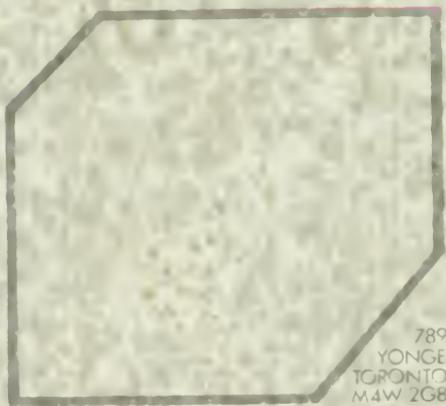


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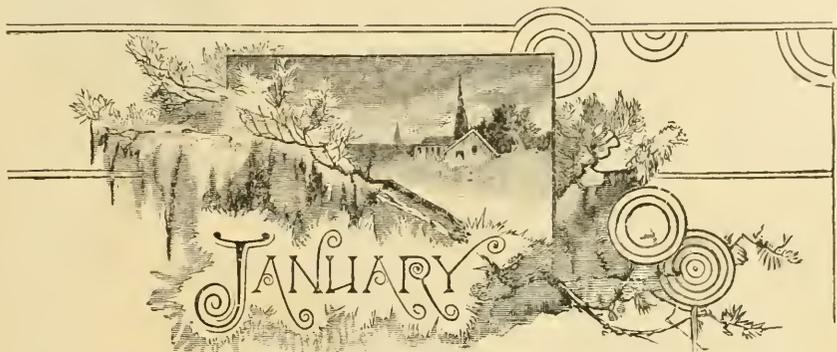
ANNE DIESBACH.

THE
Canadian Horticulturist.

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No. 1.



THE ANNE DE DIESBACH ROSE.



AMONG that valuable class of hardy roses for the climate of Ontario, the hybrid perpetuals, there is one which has given special satisfaction to the writer for two seasons past, and that is the Anne de Diesbach, shown in our colored plate for the present month. We have about two dozen roses in our rose walk, all varieties of great value, but for delicate tints of color.

grace of form, and large size, all combined in one rose, none surpasses this one. Some specimens cut last summer measured five inches in diameter, almost equalling in size its gigantic neighbor, Paul Neyron. This latter is rose colored, and is closely related to our favorite, being a cross between Anne de Diesbach and Victor Verdier, produced in 1869. It is a very desirable rose on account of its great size, but not as graceful, nor of so lovely a shade of color.

The Anne de Diesbach was raised by Lacharme, in 1858, a noted rosarian, who has the credit of sending out fewer poor varieties than any other large grower. Among a large list of varieties produced by him we may mention Victor Verdier, Alfred Colomb, Coquette des Alps, and Chas. Lefebvre, varieties of marked individuality.

The plant is hardy and grows freely. The flowers are not produced in abundance, and, when they do appear, they are half concealed by a wealth of foliage, but this is just the condition most favorable to show them off to the best advantage. They are fragrant, and of a most lovely shade of carmine. We consider this rose one worthy of a place in the amateur's garden, even if his collection be one quite limited in number.

ANNE DE DIESBACH.

In a garden quaint,
 Filled with roses rare,
 Grows the one I love the best
 Of all the posies there :

Modest maid, with cheek now blushed,
 Cannot rival thee
 In sweet and pure simplicity,
 Thou art so dear to me.

The dew drops kiss thy cheeks
 And love to linger there,—
 Ah ! words would fail me, should I try
 Thy excellencies to declare :

Thy grace, thy beauty, fragrance, charm
 E'en those who heart do lack,
 Thou art a work of Nature's own
 My Anne de Diesbach.

Grimsby, Ont.

WILHELMINA BRODIE.

STORING ICE NOT EXPENSIVE.

No expensive structure is needed for an ice house, though where it is an object to have no wasting away, it should be made tighter than where this does not matter so much. Slabs from the saw-mill do very nicely for the roof, and the sides may also be of rough boards. Where desired, the ice-house may be one corner of the wood-shed partitioned off, in which ice will keep quite as well as in a more costly structure. Even stacking is often resorted to, by laying down rails for a floor, on which to stack the blocks compactly. Cover heavily with some material which is non-conducting, such as straw, hay, etc., finishing the top so as to shed rain, bracing the sides with boards and rails to keep covering in position. Care must be taken in getting at the ice, always to open at same place and cover up thoroughly, or some hot day will turn it to water. In putting in the ice no matter where it may be, always surround it with non-conducting material like sawdust.—W. F. LAKE, in *Country Gentleman*.

THE ice-house question can be summed as follows : any cheap structure with good drainage and no circulation below ; good ventilation above ; proper space between ice and sides, filled with non-conducting material. The bugbear of expense need deter no one from storing ice. By providing a proper bottom ice can be piled on it and a building put over it later.

PLUMS FOR CANNING, MARKET, ETC.



BEING very diffident and mistrustful of being able to interest the readers of the HORTICULTURIST in this subject, so much having been written heretofore respecting the Plum and its varieties, I have hesitated before making the attempt to write anything touching the matter. But having been especially requested to name from my experience the most profitable varieties thereof, for market and canning purposes, etc., and those which will form a profitable succession for shipping, from the earliest to the latest, and the kind of stock on which they should be budded or grafted, I will with much pleasure name such varieties, and treat the above matter as follows.

The stocks on which I prefer to graft (I prefer grafting to budding), are those raised from seedlings of the common blue plum, selected from trees of rapid growth and large size. Having lost a number of trees purchased from nursery-men, which had been grafted or budded on the wild variety known as the Canada Plum (*Prunus Americana*), and commonly used by them for stocks, in consequence of their roots breaking during wind and rain, under a heavy load of fruit, I have substituted with advantage the common blue, as its roots prove much stronger and better, and the trees when grafted attain a larger size.

My experience in fruit canning has not been extensive, but such as I have had has been acquired by selecting for home use from the varieties I cultivate, of which, without hesitation, I would name Bavay's Green Gage, Monroe, and Imperial Gage, as the best three plums for canning; but as these, from their very fine quality, and especially in years of scarcity, often command a higher price than canners can afford to pay, they purchase at a lower price, largely of the blue damson, which they can sell as a much lower figure and make more money therefrom, and it might be judicious to add the damson to the list, although of much inferior quality.

As to the varieties for market purposes, extending in their time of ripening from the first to the last of the plum season, I would recommend of the varieties commonly grown, the Niagara, Bradshaw, Washington, Lombard, General Hand, Yellow Egg, Peach, Coe's Golden Drop, Bavay's Green Gage, Quackenbos and Glass, which ripen generally in the order named, as the best and most profitable. Of these I would select as the most remunerative, the Niagara and Bradshaw for earliest, and the Quackenbos and Glass for latest; and among the most latest, the Peach plum, as I have found that more money can be made, especially in years of plenty, from the very early and the very late, than from the medium ripening varieties, which come in competition with a very large number of others, which ripen at the same period; and that the dark colored sell at higher prices than the yellow. In the past plentiful season, the Niagara

and Bradshaw sold at from 95c. to \$1.10 per basket of twelve quarts; the Washington and Lombard at 50c.; the General Hand, Yellow Egg, Coe's Golden Drop, and Bavay's Green Gage at 65c.; the Peach plum at 75c. to 85c., and the Quackenbos and Glass at from 95c. to \$1.15 per basket. I regard the Glass seedling as our most valuable late market plum. The tree is very hardy and productive, and the fruit very large and attractive, showing to fine advantage in the basket. Here, by way of digression, I would say, that it appears to me very remarkable that a plum possessing so many valuable qualities, should not have found a place on the Industrial Fair's Prize List, and thereby be recommended to the public as one of the profitable varieties to be propagated. It is also remarkable how valuable the Glass seedling is to many exhibitors, when they happen to be short of a dark-colored plum to supply the section to be represented: then this plum is often used with success, to carry off the prizes which should have been awarded to the varieties named in the particular sections of the prize list for which it was substituted. At the Industrial Fair held in 1890, I noticed that the Glass seedling took prizes in three or four sections allotted to other varieties.

In the above list of market plums, I have left out Pond's seedling, as I have not found it so productive as the varieties I have named, and because in late years it has become very subject to rot. When it is free from rot, its fine size and color cause it to sell at a good price.

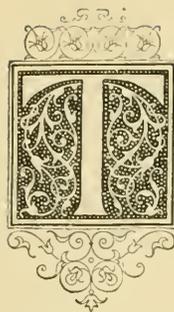
The varieties I value most for preserves and dessert, are as follows:—For preserves, Niagara, General Hand, Coe's Golden Drop, and Bavay's Green Gage. For dessert, the Green Gage, Imperial Gage, and McLaughlin, the latter being the best of all. The tree is very hardy and productive of large, finely-colored, luscious fruit, and in localities where the peach fails to bear, is the most valuable substitute therefor. I have not included the McLaughlin among the market varieties, because it ripens with the great majority at mid-season, when the market is overstocked with fruit and when plums sell at a very low price.

Whitby, 21st Dec., 1891.

J. K. GORDON.

THE EXCELSIOR, or Hale's Hardy, peach, is highly spoken of in the *American Garden*. It was recommended at the recent meeting of the American Pomological Society, and specimens there exhibited were remarkable for their high color and beautiful appearance, although of medium size and fair quality. Mr. Hale says the tree makes a low, spreading head, and will bear a good crop when the buds on all other sorts are killed. This peach originated at Lowell, Mass. It is very hardy and prolific, having borne full crops annually for five years in Massachusetts, and in Greenville and Grafton, N.H. It has stood 12° below zero and had a full crop, when all other varieties in the same locality were killed.

FLORAL FIRE CRACKER.



THROUGH the courtesy of Mr. A. Blanc, of Philadelphia, we here show our readers another floral novelty in the *Brodiaea Coccinea*, or the Fire-Cracker plant. It is also called the Crimson Satin flower. The *Brodiaeas* are named after Mr. J. J. Brodie, a Scotch botanist, and are of the genus *Liliaceæ*. They are natives of California. There are about a dozen varieties, described in the Dictionary of Gardening, and they form a pretty class of bulbs, though somewhat tender. They are easily propagated by planting the offsets, which should be removed and replanted in the autumn.



Fig. 1.—FLORAL FIRE-CRACKER.

The prevailing color of the flowers is blue, but the *Brodiaea Coccinea*, which we show in our illustration, is an exception to the rule. Its flowers are scarlet. No doubt it derives its common name from the resemblance which its peculiar flowers show to the boys' fire-crackers. The tall stems, of from one to two feet in height, bear umbels of pendant flowers, two to three inches long, of a rich crimson color, tipped with vivid green. There are twelve or fifteen flowers in each umbel, and the bloom appears in June and lasts for several weeks. This variety was discovered in California in the year 1870.

THE WINTER MEETING.



THE attendance at our winter meeting was large. Not only were there present, in addition to the directorate, a large number of members from the Niagara peninsula and the Burlington district, but there were also representatives from several local affiliated societies. The Peterboro' Fruit Growers' Association was represented by T. A. Grover, the Burlington Association by Messrs. G. E. Fisher, Wm. Fisher and A. W. Peart, and the Brant Association by Messrs. A. Dawson and J. R. Howell.

These local societies became affiliated with the Ontario Association upon payment, through their secretary, of 80 cents per member, the 20 cents balance of the \$1 membership fee being retained by the society for their own work.

The Western New York Horticultural Society was represented by Mr. S. D. Willard, their vice-president, and the Michigan Horticultural Society by Mr. L. B. Rice, of Port Huron.

Few changes were made in the directorate. Mr. A. H. Pettit was elected president, and Mr. T. H. Race vice-president; Mr. J. R. Howell, of Brantford, succeeds Mr. McMichael, of Waterford, for District No. 9.

Prof. Wm. Saunders, Director of the Experimental Farm, Ottawa, on request, gave the meeting much information concerning the World's Fair, and it was unanimously resolved that the fruits of Canada should be exhibited in the Horticultural Hall there in competition with those of other countries, and that 3000 feet of table space, not including passages, would be none too little to accommodate the fruit exhibited from Ontario alone. The matter of details were referred to a committee, consisting of Messrs. Allan, Pettit, Wellington and Dempsey, who reported in progress that the Dominion Government should provide the transportation and care of exhibits, and the Provincial Government the cost of collecting the fruits and the representation. It was resolved that Mr. Allan be a delegate to Ottawa, to co-operate with the delegates from the Agricultural and Arts Association and the Stock Breeders' Association, with regard to this very important matter.

The importance of a systematic inspection, by the Dominion Government, of the fruit for export, was again debated and emphasized. The committee, Mr. A. H. Pettit, chairman, was continued, and asked to proceed with the agitation for the accomplishment of this work, even if such fees must be charged on barrels inspected and branded by the Government inspector, as would pay the expenses of his work.

The experiment station work in southern Ontario was also again considered. The Deputy Minister of Ontario, Mr. C. C. James, suggested that the work might be done by various experimenters, in different parts of Ontario, who

would report to a central officer, whose duty it would be to visit the various sections for taking notes, and tabulate all results for publication. The Association approved of the proposal, and re-appointed the old committee to co-operate with the Government. This committee consists of Messrs. A. M. Smith, A. McD. Allan, W. E. Wellington and L. Woolverton.

The programme was rather long, and necessitated too much reading and too little live discussion. The executive will endeavor to correct this error the next time.

The third evening was given up to Floriculture. The debates were led by members of the Florists' Clubs of Toronto and Hamilton. A project, urged alike by both, was the importance of a botanical garden for Ontario. Much is being done, both at the Ontario Agricultural College and the Central Experimental Farm, in this way, yet, notwithstanding this, the Province of Ontario is far behind other countries in this department. A committee was appointed to take the matter into further consideration, viz., Messrs. Morton, Webster and Gilchrist.

It is proposed to have a monster pic-nic of fruit growers and farmers in July next, at Grimsby Park. Very cheap excursion rates will be arranged, and a good programme provided. The management of this was left in the hands of a committee, consisting of the President, Secretary and M. Pettit.

The following committees were also appointed during the sessions :

New Fruits.—Messrs. Allan, Wellington and Secretary.

Grapes.—Messrs. M. Pettit, T. H. Carpenter, Geo. Cline, E. D. Smith, A. M. Smith and Wm. Orr.

Pears.—Messrs. E. Morris, D. W. Beadle, W. Holton and P. C. Dempsey.

Experimental Union.—The President.

Central Farmers' Institute.—Mr. A. McD. Allan and the Secretary.

Audit.—Messrs. J. M. Denton and E. B. Edwards.

Industrial Exhibition.—Messrs. W. E. Wellington and Joseph Jacques.

Western Fair.—Messrs. J. M. Denton and W. E. Saunders.

Central Fair.—Messrs. R. B. White and John Craig.

Finance.—W. E. Wellington and A. M. Smith.

Farmers' Institutes.—President, Vice-President and Secretary.

Executive.—President, Vice-President and Secretary.

Western New York Horticultural Society.—The Secretary.

Michigan Horticultural Society.—Mr. A. M. Smith.

It was decided that the next annual and winter meeting should be held in the city of Brantford, in response to an invitation from the local Association at that place, who will, no doubt, exert themselves to make the meeting a success in point of attendance.

AT THE CHRYSANTHEMUM SHOW. Mother: "How do you like these, Dora?" Dora: "Wouldn't they look better, mamma, if they had their hair combed?"—*Boston Transcript.*

HOME ICE PACKING.



THE method of building ice-houses without requiring packing of sawdust, charcoal or other substances, merely by leaving dead air spaces, is to-day considered fully equal, if not superior, to the old-time way. Dead air spaces appear to have fully as much power as non-conductors as do solid packings, and, the method is a cheaper one. The system, however, must be carefully followed out for the best results. The air chambers must be distinct and must not admit a draft up or down or around the ice. The air spaces must open into the upper portion of the house above the plate, that the cold air of evening may descend into them. This also allows air which may have become slightly heated to rise above the ice without reaching it. Partitions must be tight. To receive the full benefit of the system, pains should be taken when the final layer of ice is packed and the covering with sawdust is in process, not to clog these air chambers.

At least 2 ft. of space should be left for sawdust over the packed ice. Still higher in the side of the building, one or two windows should be placed, which should be left open in warm weather to allow of free ventilation above the ice, allowing the escape of heated air and ingress for any cool air which nights and storms may bring. When small quantities of ice, it is desirable, even with these air spaces, to leave a space of at least six inches between the inner ice-house wall and the ice, which must be filled with tramped sawdust. Six-inch studding will do for the outside chamber. Is certainly heavy enough, and even four or three inch lumber will do; it need not be more than two inches thick. To secure good drainage is easy in a side hill or on a very slight slope. If only a dead level is obtainable, the house should be well underpinned and perhaps one or two courses of tiles laid in the ground a rod or two from the house, if possible into gravel soil.

If the character of your land be sandy or gravelly, you need have no anxiety about drainage, as the melting ice will take care of itself. The main point is securing good drainage so as to prevent a draft of air under the ice chamber. It is well to have a stone underpinning well pointed with mortar. A current of air will melt many tons of ice in a week. An excellent plan in use under many ice-houses is a cold storage room. A bank is most convenient for this arrangement, though by elevating the floor for ice 4 to 6 ft a moderately good storage

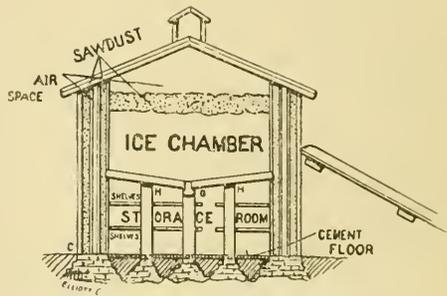


Fig. 2.—ICE CHAMBER.

room can be secured with little extra cost. The one objection to this convenience under the ice chamber is, that it is likely to allow drafts of air up through the ice-house unless great care is exercised. A tight, or nearly tight, and sloping floor should be made and the drainage carried into a trough and away from

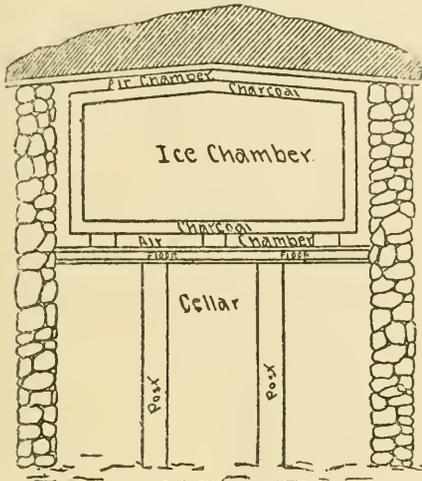


Fig. 3.—ICE CHAMBER.

the building, in a pipe. Of course the floor, which also forms the ceiling of the cold storage room, must be heavily propped, or underpinned, to support ice so the great weight above will not crush it in. Many find such a storage room extremely useful in holding, for a few days, small fruits, vegetables, meats, etc., for market, and for preserving the family supplies. For foundation walls probably nothing is cheaper or superior to concrete well laid below frost. The walls, if of wood, must be double or treble the same as for the ice-house proper. Double doors and windows must also be provided. Never overlook the rule, that the smaller the amount of ice stored, the greater is its proportionate waste.— *Farm and Home*.

ASPARAGUS.

Mr. Perkins, of Madison Station, read a paper on Asparagus Culture in Mississippi. He has been cultivating this plant but a few years. For several years he obtained roots from high-priced northern nurseries. He has since found that by saving his own seed, and planting them in the early spring, he could have by the following fall finer roots in every respect than the two-year old roots from Illinois.

Land for asparagus should be heavily manured, deeply plowed, and completely pulverized; rows five feet apart, plants two feet. 4500 plants to the acre. He objects to deep plowing in cultivating this crop. Shallow cultivation, keeping plants free from weeds and grass, is all that is needed. Asparagus is a voracious feeder. He has used barnyard manure, cotton seed and ashes with good effect.

He commenced shipping last season 23rd of February, and continued till last of April. Mr. Perkins thinks asparagus will pay in Madison Co., Miss.: latitude about two degrees above New Orleans.

Dr. H. E. McKay thinks asparagus will pay. He has 60 rows, 100 yards long, on which he put 90 wagon loads of manure. *From proceedings of Miss. State Horticultural Society.*

PEACHES IN ESSEX.



HIS locality is especially favorable for the cultivation of the peach. It consists of a high ridge of sandy loam, containing several thousand acres, suitable for that purpose, bordering on Lake Erie. About one mile from the lake, this ridge recedes slightly to the north. This northern slope is the most suitable for this fruit, as the buds do not start into growth so early in spring, and are, therefore, less liable to injury from late frosts which occur nearly every spring. Large numbers of trees are being planted every year; at the present rate of planting but few years will elapse until most of the suitable land will be planted to peach trees. The largest grower is Mr. E. Tyehurst. A late number of the *HORTICULTURIST* contained a note from him regarding a seedling peach, also comments on samples of same. Mr. Tyehurst could, with propriety, have said much more in favor of his seedling, but he is a very modest man, and did not say nearly what its merits deserve. When I tell you that he has grown that seedling for about thirty years, that he has tried all of the leading named varieties offered by nurserymen, and that this season his crop of peaches were estimated to be worth ten thousand dollars, you will see that he has had some experience in peach growing. He loaded a car in one day (of 1,500 baskets) with peaches of his own growing. This seedling has paid him better than any other kind, as the fruit buds appear to be more hardy and the trees will produce a crop of fruit when most other sorts fail. It has not yet been placed in the hands of any nurseryman for propagation.

The varieties mostly grown here are Alexander, Hale's Early, Early and Late, Crawford, Early Barnard, Tyehurst Seedling, Hill's Chili, Smock, Wager, and many seedlings. Alexander takes the lead in early peaches, although many others have been tried. Hale's Early rots badly and is not being planted to any extent now. Early Crawford does not bear regularly, the fruit buds appear to be more easily injured than are many other sorts; the trees also having to obtain greater age before beginning to bear. Late Crawford is better in this respect and will yield larger crops. Early Barnard is perhaps the best and most profitable named variety grown here. Hill's Chili, a later peach, is one of the most regular in bearing of any sort known here. It is not of the best quality, but its hardiness and regular bearing qualities make it the best paying and most reliable late kind to plant in this locality, yet fully tested.

Leamington, Ont.

W. W. HILLBORN.

ONE OF NATURE'S MYSTERIES. Willie: Mamma, how do grapes grow? Mamma: From seeds planted in the ground. Willie: Well, if the seeds are planted in the ground, how do they get into the grapes again?



MR. W. E. WELLINGTON.

SOME PROMINENT CANADIAN HORTICULTURISTS. XIII.

MR. W. E. WELLINGTON.



HE name of our Association is too narrow to define the scope of our operations. We touch on forestry, floriculture and landscape gardening, as well as on fruit growing; all of them branches of the more comprehensive term, "horticulture," or cultivation of the garden. The agriculturist cultivates the broad acres of a field, but the horticulturist concentrates his time and labor upon the small plot called a garden. The former is an extensive method, and the latter intensive.

The name, Ontario Horticultural Society, would, perhaps, better express the lines within which we operate, and yet, to an Old Country gardener, this would indicate professional floriculture, a division which, in this country, we leave to the florists' clubs of our cities and towns; ourselves dealing with it only as it is interesting to amateurs, and the general public.

The nursery is another department of horticulture. Methods of propagation of trees and plants are so essential to the best success of a fruit grower, that we welcome to our Board of Directors one or two nurserymen, in order that we may refer knotty questions on propagation to them at our meetings, and we find that they are, as a rule, quite ready to confide to us the secrets of their profession, for the general good. Not only so, but, to their credit be it said, those who have had a place on our Board have carefully avoided advocating their private interests, or, in common parlance, "talking shop."

Prominent among our Canadian nurserymen, is Mr. W. E. Wellington, of Toronto, a gentleman who has always taken a deep interest in the work of our Association, using his influence in every way possible to increase its usefulness. No one sends in larger club lists of new names, and no one is more ready to forward its projects, either with time or money.

Mr. W. E. Wellington is a Canadian, and his native place is Oshawa, Ontario, where he was born in 1849. There his boyhood days were spent among the orchards and gardens near Lake Ontario, surroundings which favored the development of his taste for horticultural pursuits. At the age of twenty-one, he resolved to enter the nursery business. He went to Rochester and engaged with Messrs. Chase Bros., afterwards entering their Toronto office, soon becoming a partner in charge of the New England States. Later, he voluntarily left them, to go into business in Canada with his brother-in-law, Mr. G. A. Stone.

In 1878, this firm purchased from Mr. Morris a two-thirds interest in the Fonthill nurseries, which had been established in the year 1842. These have since grown to such an extent that, in place of the original 100, the establishment now covers about 700 acres of land. On these grounds, in addition to the nursery proper, are extensive greenhouses, with over twelve thousand square

feet of glass, for the propagation of plants, more especially roses, clematises, and choice shrubs ; a good-sized peach orchard consisting mainly of the Wager and Mountain Rose, varieties which have proved with them most profitable ; and an experimental orchard of some 300 varieties of apples.

Some idea of the extent of their business may be had from the fact that they constantly employ at the Nurseries from 75 to a 100 men, and, in the busy season, nearly double that number, and that their sales average over \$200,000 per annum.



Fig. 4. — WELLINGTON & STONE'S NURSERY.

Besides this, Mr. Wellington, in company with Mr. Morris, gives a great deal of attention to the breeding of Shire and roadster horses, having large buildings suitable for that purpose, and having on their premises somewhere about fifty head.

A large force of teamsters are employed, many of whom give their time to scouring the country for twenty miles around, gathering wood ashes and manure, some of which are also brought from the City of Toronto.

In 1884, Mr. Wellington was elected Director of our Association, to represent Agricultural District No. 6, a post which he has held ever since, and during the year 1886 he occupied the Vice-President's chair. Three years ago Mr. Wellington was elected President of the St. George's Society in Toronto, defeating Prof. Goldwin Smith.

Among his contributions to our literature may be noticed an extended one on "The Clematis" in 1881, extensively copied by American horticultural

journals ; one on " Ornamental Shrubs " which appeared in our report for 1883 page 95, and one on " Roses " which was published in our report for 1884. page 156.

For several years, Mr. Wellington has represented our Association on the Board of the Toronto Industrial Exhibition, and it was mainly through his influence that the magnificent horticultural hall was built last spring, for the better display of the fruits of Ontario ; a building which is not only ornamental to the grounds, but is a great convenience to all fruit growers, whose productions certainly deserve as much consideration as those of our friends, the florists.

CITY MEN AS FRUIT GROWERS.

To succeed in most kinds of business, some study and some practical training is necessary. All men, and especially all city men, are born fruit growers, according to themselves. So long as they remain in the city and nurse this delusion, no particular harm results. If the city man is a capitalist and wishes some healthy employment, that may at the same time effectually check the growth of that capital, fruit growing will meet the requirements. If the city man is short of capital, and without experience, he can decrease his capital and increase his experience, and reap some bitter fruit (figuratively).

These men come ; they plant, they fail, they leave. They carry wiser heads back to the city. Would the city man, who expects to increase his capital by fruit growing, advise a farmer to undertake his city business ? He who undertakes business in either city or country, must compete with men who understand the business, and are surrounded by all the conditions of success.

The farmer, who finds himself with a suitable soil, within easy reach of manure and markets, and who is of course already possessed of mechanical dexterity in the use of implements, may study fruit growing and succeed, if he is a plucky and persistent worker. Many farmers fail as fruit growers. They do not care to fight weeds, and to cultivate and care for their trees, bushes, vines and plants for seven months in the year.

Fruit growing is an attractive business. It attracts too many. Many of these make nothing, while they hinder others who might make a fair profit. We advise city men to stay in the city and eat all the fruit they can, with a view of helping those who are striving to make fruit growing pay.

Niagara Falls South, Ont.

E. MORDEN.

To kill the rose bugs on bushes or vines, shake them off by the hand into a basin of water, or spray them with an alcoholic solution Bubach diluted with water.

HORTICULTURE AN ANCIENT INDUSTRY.

“Thus far of tillage and of heavenly signs,
Now sing, my Muse, the growth of generous vines.

Some trees their birth to bounteous Nature owe ;
For some without the pains of planting grow.
These ways of planting Nature did ordain :
For trees and shrubs and all the sylvan reign.
But various are the ways to change the state
Of plants : to bud, to graft, and to inoculate.

’Tis usual now an inmate graft to see,
With insolence invade a foreign tree.
Thus pears and quinces from the crab-tree come,
And thus the ruddy cornel bears the plum.
Then let the learned gardner mark with care,
The kinds of stock and what each kind will bear :
Explore the nature of each several tree,
And, known, improve the artful *Industry*.”



THUS wrote Virgil almost two thousand years ago. And what Virgil enjoined the ancients to do, in the two last lines quoted, is just what the CANADIAN HORTICULTURIST and the Ontario Fruit Growers' Association are endeavoring to instruct the people of this age and of this land in doing. To explore the nature of each several tree and with the knowledge gained to improve the artful—and we hope profitable as well—industry of fruit culture. In perusing Virgil, especially through his second Georgic, one is amazed at the knowledge the ancients had of the arts of horticulture. It is enough to take some of the nineteenth century conceit out of us when we come to contemplate that without the advantage of our-day literature, or the fruit growers' associations, there was no art in horticulture unknown to the ancients that we know and practice in this age. In some respects it would seem that they were more successful in their arts than we are on this continent of America, for Virgil, after describing all the methods and minutiae of cutting, tipping, layering, budding, grafting, etc., he says :

“The mastful beech the bristling chestnut bears,
And the wild ash is white with blooming pears.”

Though often tried, the efforts to make the mountain ash produce a crop of blooming pears have not met with much success in this age and climate. The ancients were no less skilled in the value and application of fertilizers than in the arts of hybridizing, for we hear them recommended to

“Sprinkle sordid ashes all around,
And load with fattening dung the fallow ground.”

In vineyardism, and all that pertains to the cultivation of the grape and the production of wine, the ancients of Italy and Sicily were unquestionably in advance of the inhabitants of this continent of America to day. But whatever those two countries mentioned may do in the grape in this age, it is quite certain they cannot compete with America, and especially this part of it which we call our Canada, in that king of staple fruits, the apple. Virgil speaks of the varieties of the apple ripened and mellowed by the frost of winter, but the winter varieties of these Mediterranean countries are very inferior to the winter lists now given in the catalogues of this country. And even their summer varieties are menaced by blights and ravished by insect pests beyond remedy. They have no Baldwin, no Northern Spy, no King, nor many other of the choice winter varieties we pride ourselves as Canadians in possessing. The pear which, according to Virgil, flourished in profusion and splendor before the Christian era, has likewise deteriorated, though in that delicious fruit the Mediterranean coasts have excelled in all ages.

But I am now reminded that in my last contribution I promised to tell you about the native home of the Saunders plum, which I believe I discovered during my summer visit east of Toronto. If I am correct in my belief, I will take back all that I have said about there being no plum tree proof against black-knot. About mid-way between the towns of Port Hope and Cobourg, there is a farm, owned twenty-five or thirty years ago by a Mr. Jeckel, conjointly with Mr. John Wade, father of the present Secretary of the Ontario Agricultural and Arts Association. Mr. Jeckel was an English gentleman, advanced in agricultural and horticultural science, and giving his attention chiefly to the latter. The farm, being situated in the Township of Hamilton, was commonly known as the Hamilton Gardens. On this farm the plum now known as the Saunders, came into existence nearly thirty years ago. The parent tree suckered freely, and Mr. Jeckel gave the young shoots to friends both east and west, some of them going down near Belleville, but none going west farther than Port Hope, that I could get trace of. I saw trees in September at least twenty years old, and ate fruit from them. In one place there were old cherry trees growing among them full of and partly dying from black-knot, but the plum trees grew and bore on without a sign of black-knot on them. The trees grow to a large size and bear when quite young, but do not bear regularly. If this one defect could be overcome, the Saunders plum—or at least the plum which I believe to be the Saunders—is the plum for this country, and cannot be too extensively disseminated. It is of good size, yellow in color and excellent in flavor.

Mitchell, Ont.

T. H. RACE.

CABBAGES can be kept nicely in a barrel, packed in cut straw or even hay well dampened. Trim the heads all ready for cooking, and pack in a layer of straw, one of cabbage, and so on, until the barrel is full. Remember, the straw must be wet when the cabbage is put in, but no water is needed afterward. Keep in the kitchen or outhouse. They may freeze, but that will not hurt them in the least.—*Weekly Star.*

KEEPING APPLES.



IN preparing the ground for some cuttings a week ago, I turned up a small pear, which, evidently, had fallen from a Brurre Clairgeau tree near by: it was about $2\frac{1}{2}$ inches long by 1 inch in diameter at the thickest part, and of the most orthodox pear shape. On removing from it the soil with which it was nearly covered, it presented a beautiful appearance, indeed, a friend to whom I showed it, thought it had been a "porcelain pear," it was most natural in color, being a rich, greenish yellow, with a handsome brownish crimson cheek, and when I cut it open, it had an agreeable, acid smell. I did not taste it, and the seeds were well formed and dark-colored, showing they were ripe. In all respects it was a perfect Beurre Clairgeau in miniature.

The discovery of this pear and its extraordinary condition struck me as being very remarkable; because it must have fallen from its parent tree as long ago as early July, it had, therefore, laid entombed in moist soil five months, and yet when exhumed it was as fresh as if fresh gathered, and in a sense more so, as it had actually ripened in the earth, which it would not have done, in its then immature condition, on the tree; indeed, in forty-eight hours exposure to the air and light, it blackened and shrank, decay had commenced.

The following day I showed the pear to an experienced nurseryman, explaining the circumstances under which I found it. It surprised him very much, and his comment was: "if that pear had been kept in the house or even cellar, so long, it would have rotted months ago," and so it would.

Is there any recorded instance of an immature fruit, buried in the earth for five months, being, when brought to the surface, perfectly sound and unchanged in any respect except that which the ripening process had caused? Surely there must be in earth something more than a merely antiseptic property, there must be a ripening and preservative property also, hitherto latent and unsuspected—perhaps I speak unadvisedly in this,—but which, if common to all soils, may be utilized in various ways, notably in prolonging the season of pears and apples, and possibly of other desirable fruits:

It is certainly my intention, if I live, to experiment in preserving pears in the soil, which, if successful, will enable us to have this most delicious of fruits on our tables about as many months as we now have them weeks, and what a 'consummation devoutly to be wished' this is.

Is this something new, Mr. Editor, or is it a "chestnut?"

Toronto.

J. L. THOMPSON.

AN English gardener, who has had great success in raising radishes, makes his radish beds with nearly or quite one-half soft coal ashes and soot. Under this plan his beds are not infested with worms.—*Michigan Farmer.*

SMALL FRUITS.



UNDER how many obligations we are to the Experiment Stations for their valuable experiments, and valuable notices on small fruits. Under the head of small fruits, we class first the strawberry. Special stress is placed on the ease and cheapness of growing this fruit by farmers, and thus allowing every family to be able to have strawberries for all purposes, with but little expense of money or time. We would urge more forcibly this matter of small fruit growing upon the attention of the average farmer, and show the large profit both in health and money to be derived from a small fruit plantation of the several varieties of fruits that mature early, and in paying results, in from one to three years. One objection usually raised by farmers when asked to grow small fruits is the lack of time and skill. These objections may be answered by saying that the time necessary to plant one-fourth of an acre of strawberries need not be more than to plant the same area of cabbage or potatoes; and, as to skill, any one who has set cabbage, celery, or sweet potatoes, can set strawberry plants. The knowledge of the fact that one must set perfect-flowering varieties, with imperfect varieties, is essential, but, further than that, clean tillage is the only very important point to be impressed on one's mind. The item of the cost of plants is also reckoned as one of the hindrances to the cultivation of this fruit, and, viewed in this way, it is a very large item; but, if plants of any of the older, well-tested varieties are selected, they can be bought by the thousand, cheaper than many of the newer varieties can be bought by the hundred. One can get any of the standard varieties at about four dollars per thousand, which, if set in rows three feet apart and the plants two feet apart in the rows, will take seven thousand two hundred and sixty plants per acre, making one-fourth of an acre cost from five to eight dollars for plants. The further cost depends on the amount of tillage given and the expense of help. While the returns will usually average from four to five hundred quarts to one-fourth of an acre, which, if calculated at ten cents a quart, will more than pay for plants and labor, leaving only the labor for the second year's crop, which often is the best, and at the same time gives runners to set a new plantation.

The New York State Bulletin says, if planting for a fancy market, use the following varieties: For *early*, Haverland, VanDeman; *medium season*, Bubach, Sharpless, Burt; for *late*, Crawford, Middlefield, Parker Earle, Gandy; if for *distant market*, VanDeman, Stayman No. 1, Burt; for *near market*, the last mentioned varieties with the addition of Beder Wood, Parker Earle, and, possibly, Mount Vernon: thus, having VanDeman to pollenize Haverland, Bubach between Sharpless and Burt; Middlefield between Parker Earle and Gandy. Most of these varieties have become so well known, and so extensively propagated, that they can be bought so very reasonably, and they will increase so rapidly, that,

starting with a few hundred plants, thousands can be had in a year's time, thus putting a beginning within the reach of anyone.

At the Station grounds, Ohio—owing to the two severe frosts of the 5th and 17th of May, no satisfactory report can be given on the strawberry. The varieties with perfect flowers suffered more than the pistillate, Parker Earle and Enhance being apparent exceptions.

It seems to be the rule, that the blossoms of some varieties are easily killed before the buds open: varieties, that give large crops in seasons of no frost, give comparatively good crops in frosty seasons. Pistillate varieties are more prolific than staminate, and are more hardy as well. They recommend, as formerly, Haverland, Crescent, Bubach, with Gandy, Pearl and Enhance as pollenizers.

Granton, 10th Dec., 1891.

JOHN LITTLE.

ORNAMENTING THE HOME GROUNDS.—Shrubs are valued for their bloom as well as for form and foliage. Each variety will serve some special end. As a rule, plant in irregular groups, as directed for trees. At projecting points in shrub masses, plant some hardy herbaceous perennials. Use vines for porches or for covering a half dead tree top or rubbish pile. Plant flowers mostly at the side of the house in irregular but gracefully-shaped beds, and about the trunks of trees when they are young, perhaps. No special paths are needed about flower or shrub groups. Rock work is seldom satisfactory, and is only appropriate in a retired portion of the grounds. A pile of shells, rocks and scoriæ in the front yard is sadly out of place. Heap them in some back and shady corner, and you will find great delight in transplanting from the woods and meadows an assortment of hepaticas, spring beauties, bloodroot, trilliums, bell-worts, phloxes, and ferns. If you have a pond near by, introduce some water-lilies, cat-tail flags, pickerel weed, arrow-head, and near by set some weeping willows and birches and ashes. Do not despise flower, shrub or tree because it is native, or "common." As a rule, the best known is better than the imported variety. Give thought and attention to all the details of making a pleasant home. It is a worthy work. You will be surprised to find how much beauty can be attained at little cost, and how rapidly everything hastens forward to the completed plan in your own mind. You will have a constant comfort and a fresh hope realized every year as the trees grow, and transformation follows transformation toward the fulfilment of your original design.—PROF. W. J. BEAL, *Michigan Agricultural College.*

SEEDS which had been kept in the seed-vessels of plants belonging to the herbarium of Tonnefort, a French botanist, were found to have retained their fertility after the lapse of nearly a century.—*Ph. Weekly Press.*

PRINCESS LOUISE AND McINTOSH RED IN QUEBEC.



AM sorry to say that, so far, Princess Louise does not appear to be hardy enough for this vicinity. Of six trees planted out in the spring of 1890, four succumbed last winter—and it will be interesting to know if the two surviving will continue through the present winter unimpaired. Of course, I am quite convinced that trees transplanted from more southerly nurseries, such as those of the Niagara district, to this province, have not the stamina to survive our winters here, as well as if grown in our Quebec nurseries, and I shall not be discouraged if the two trees of this most excellent variety should suffer injury this winter. But I shall persevere and raise the Princess Louise in my own nursery as well as make further tests by top-grafting on hardy stocks.

McINTOSH RED.

All varieties of apples were very fine this season, but, without exception, McIntosh Red, as grown this year, is the most beautiful, as well as the most delicious, apple we have seen. After some eight years' trial, I am convinced that McIntosh can be grown here as well, if not more successful, than Fameuse; I can recommend its cultivation in this province. I understand some eighty barrels of McIntosh Red were sold here this fall. They came from the vicinity of Aultsville, I believe, and were sold in one lot, at \$2.25, when Fameuse only brought \$1.75 per barrel. I have been informed by dealers that this particular variety was, without exception, the handsomest lot of apples ever offered for sale in this market, and that it is the first time the trade has ever met this apple. The party who secured the lot of McIntosh is now retailing them at \$4.00 per barrel, and to-day the finest Fameuse are only selling for \$2.75 per barrel, retail.

I believe there is money in McIntosh, not only for this market, but for export, as they promise to ship better than our Fameuse.

Yours truly,

Montreal, Que.

R. W. SHEPHERD, JR.

E. P. ROE says that the man with only one square rod of land can use it to best advantage by planting half to strawberries.

BLACK CURRANTS.



Use them for the table, with sugar, the same as red ones, but for this purpose they need to be thoroughly ripe: we make jam of them, and can them for winter. Jelly and cordial, which are highly esteemed for medicinal purposes, can also be made from them. The jelly is thought to be particularly beneficial in cases of sore throat, and the cordial in summer complaints.

It has always seemed strange to me that more attention has not been paid to them, for their cultivation is attended with very little trouble, and we have always found a ready sale for them in market. In fact, with us, the demand has always been greater than the supply, and the price obtained a little better than that paid for red ones.

The bushes are easily propagated from cuttings, which can be planted either in the fall or in the spring. With proper cultivation they make rapid growth and bear quite abundantly the second season after planting. They are long-lived, some on our premises being more than twelve years old to my certain knowledge, and they still bear fruit in great profusion. They are not troubled by the currant worm. Some think that by planting red currant bushes among the black ones the former escape the ravages of the currant worm, but I am not quite prepared to vouch for that. So far as I know, they are not troubled by any blight or disease.

Currants are so much more easily picked than strawberries or raspberries that they find favor in my sight. The stooping position necessary in picking strawberries is very tiresome, and one comes out of the raspberry season with hands scratched and full of thorns and garments as badly rent as if she had sojourned forty years in the wilderness.

To those who are raising small fruits for market, I would say try some black currants. If you have any English customers you are sure of a market for them.

A writer in Vick's Magazine.

AMOUNT OF SEED FOR DIFFERENT AREAS.

Asparagus, bed of 15 sq. yards....	1 pt.	Leek, 2 square yards.....	1 oz.
Beans, broad, row 80 feet.....	1½ qt.	Lettuce, 4 square yards.....	1 "
Beet, row 50 feet.....	2 oz.	Mushroom, 7 square yards....	1 bus.
Broccoli, 4 square yards.....	1 "	Onions, 9 square yards.....	2 oz.
Brussels Sprouts, 4 square yards..	1 "	Parsley, row 80 feet.....	1½ "
Cabbage, bed of 8 square yards....	1 "	Parsnip, drill of 200 feet.....	2 "
Carrots, drill of 120 feet.....	2 "	Peas, early, row 60 feet.....	1½ pt.
Carrots, bed of 12 square yards....	2 "	Peas, large, late, row 80 feet...	1½ "
Canflower, 4 square yards.....	1 "	Potatoes, row 30 feet.....	½ pk.
Celery, 4 square yards.....	1 "	Radishes, 4 square yards.....	1½ oz.
Cress, 3 square yards.....	2 "	Savoy, 4 square yards.....	1 "
Endive, 4 square yards.....	1 "	Spinach, 10 square yards.....	2 "
Kale, 4 square yards.....	1 "	Spinach, drill of 120 feet.....	2 "
Kidney Beans, row 80 feet.....	1 pt.	Turnip, 4 square yards.....	1 "

RASPBERRY CULTURE.



WITHIN a few years back a notable change has been introduced in the general management of the raspberry. The only pruning formerly given to this plant was confined to cutting out old stems which had fruited, thinning out the young stems which were to produce the next crop, and shortening them by cutting off a portion of their tops. These would then be fastened to a stake or some similar support, and this completed the pruning for the season. But the more modern system obviates the necessity of any kind of support and the plants are managed so that they are able to support themselves when full of fruit. This is accomplished by allowing the first year's growth of newly set-out plants to grow undisturbed; the second year two or more shoots will be produced, and when these have reached to a height of about two feet their tops are pinched off, so as to stop their further upright growth: they will then proceed to push out side shoots or laterals on all sides, balancing and supporting themselves very effectually and appearing like small, evenly headed trees. When growth has been completed for the season and the leaves have fallen these side shoots are pruned back so as to leave them from 12 to 16 inches in length, according to their strength. This pruning can be done quite rapidly with pruning shears. At the same time, if not before, all the old stems or canes which have fruited are also removed; but many cultivators prefer to remove these old stems immediately after the fruit has been gathered, claiming that by so doing the young canes have greater freedom of growth; also, that by promptly removing the old canes many kinds of insects which lodge in the old wood and have cocoons and nests upon it are thus destroyed by burning all the prunings as they are collected. This system is continued annually; no greater number of young shoots than is required are allowed to grow, all others being destroyed as they reach a few inches in height. The summer topping is attended to as previously stated, and the result of this routine treatment is a self-supporting plant and improved fruit.—*Exchange.*

IN storing celery for market, it is dug and put in trenches or in store houses. The latter are made with four inch packing on all sides, of sawdust or leaves, and with provision or shedding rain and for ventilation. Trenching is preferable where the celery is to be kept a long time, but in severe weather the trenches are often controlled by the frost for weeks. For family use, it can be kept in the cellar or in boxes. The boxes should be as high as the celery, one foot, and any length. Four inches of sand or soil is then placed in the box, soaked with water. The plants should be packed closely in the box, straight up with their roots in the wet sand, but without any soil between the plants. Examine the soil occasionally, and saturate it with water if it has become dry, but do not wet the celery. It will keep in this way two or three months. The crop for storing should be dug only when perfectly dry, and even the dew should be allowed to dry off.—*Farm and Home.*

BULBS FOR WINTER BLOOMING.

HOW TO SELECT THEM AND THE BEST METHOD OF PREPARATION
AND CULTURE.



UNLESS one has had some experience, it is hard to select from a catalogue bulbs that will do well for the house. Many of the imported bulbs are dry and worthless, and what are advertised as home-grown are too old to do well in the hands of an amateur, but if your dealer is reliable and can assure you of the freshness of his stock, it will be safe to select the following as among the best for winter blooming :—Single Tulips, Jonquil, Crocus and Lily of the Valley, Giant Oxalis, both yellow and pink, Fairy Lily, a species of Amaryllis, Hyacinths, Cyclamen, a Calla and Prince of Orange Amaryllis. The Tulips, Jonquil, Crocus, and Lily of the Valley must be potted in the autumn and

BURIED WHERE THEY WILL FREEZE

two or three times before they are brought indoors, then put them in the cellar where they will thaw and become well rooted. When they are well above the soil bring them up and put them in the window, not the most sunny one, but a north or west window, and as far from the stove as possible ; keep quite moist and you will soon have Crocus, Tulips and Jonquil will follow, and Lily of the Valley for the last. Hyacinths should not be grown in glasses, they are unsatisfactory and the bulbs are worthless for further use. Pot them in good rich soil eight or ten weeks before you wish to put them in the window, and

BURY THEM IN THE CELLAR.

When they are rooted sufficiently the tops will push above the ground, and when an inch or two high bring up and give rather more light and heat than the first named bulbs. The Roman Hyacinth is easiest of culture, and each bulb will throw up two or three flower stalks.

The Fairy Lily, Oxalis, and Freesias need much the same treatment. Four or five bulbs of either kind may be allowed to a five inch pot ; give them good soil, plenty of sun and a good degree of warmth and they bloom very soon. The Freesia is the finest thing I have ever grown for winter blooming, requiring little care, sure to blossom, and beautiful to look at, while nothing can compare with

ITS DELICIOUS FRAGRANCE.

Procure your Cyclamen of the florist, well started for winter growth ; they are very fine and remain in blossom a long time. A Prince of Orange Amaryllis will blossom twice in the year, in August and again in December. After the summer blooming set it away in a somewhat cool and dark place, giving little water until the new growth starts, then give plenty of water and a sunny corner and the bud stalk will soon appear. If your Calla does not show signs of blooming after a reasonable time, water quite freely with warm water, nearly as hot as you can bear your hand in.

There is a fascination about the growth of bulbous plants, the unfolding of leaf and bud under one's very eye, that nothing else can give, and I much prefer them to any other class of plants, both for out-door culture and for winter blooming.—*Myra C. Durfee.*

WINTERING APPLES.



AN abundance of fruit this season has caused prices to be extremely low, so much so that in many sections farmers declare that apples are not worth gathering. In many parts of the country six cents per bushel are only offered at the cider mills or distilleries. Of course this price refers to windfalls and fruit that insects have caused to drop, but it is much better to haul them away and dispose of them even at such low prices, for the number of bushels that could be picked up in a day in an orchard would be sufficient to make the occupation pay quite well. Aside from this, removing the fruit gets rid of the insects they would produce another season. The low prices should stimulate farmers to store choice fruit away in as careful a manner as possible; as better prices may be realized in the winter or the spring. The following hints and suggestions from *Stuart's Agriculturist* on keeping fruit all the year round are of special interest just now:

“The comfort of a supply of apples the year round depends as much upon the keeping as the growing of them. The average house cellar is not the best place in which to store them, but attention to cleanliness, ventilation and temperature guided by a thermometer, will make it a fair success. Temperature is the strong point, and the nearer and more uniformly the air of any room in which apples are stored can be kept to the freezing point, but always above it, the longer and better they will keep. Carefully picked and assorted apples, packed in boxes or barrels in almost any fine, dry material that will aid in keeping them dry and the temperature about them uniform, may be kept in any convenient outhouse, or even the barn, covered with three or four feet of hay, straw, leaves, chaff or other material, to keep the frost from reaching them. All the better if they can stand upon the ground, which will aid in maintaining an unchanging temperature. To those who have heretofore kept their apples in bins or on shelves in the house cellar without satisfactory success we suggest the following experiments, which have before appeared in print: Select fifty good sound apples from the shelf or exposed mass, wrap each in paper and replace them. Count out fifty more, the same in condition, and place them aside exposed. Place successive lots of fifty equal specimens in boxes of suitable size and pack in each the following, viz.: fine shavings, fine chopped oat straw, coarse and fine chaff, bran, sifted coal ashes and plaster; put them in a cold, not freezing, apartment. Fill boxes large enough to hold half a bushel or a bushel, with apples in the more compact packing, as plaster or fine chaff, and place them in the barn, with a few feet of hay or a foot or two of chaff upon them. Leave them all undisturbed until after those kept in the usual way are gone and you get hungry for apples; then examine them all at the same time carefully, bearing in mind the differing conditions under which each lot has been kept and you will get a deal of information.” — *Husbandman*.

CLIMATE AND FRUIT CULTURE.



PROPOSAL, the importance of which to the fruit growers of Ontario is not easily exaggerated, is set forth in the report recently published by Parliament, of the evidence given by Mr. Gordon Mowat, before the Agricultural Committee of the House of Commons, on the Relation of Climatology to Agriculture and Horticulture. A climatic survey of the Dominion—a careful study and mapping in detail of the characteristics of our very many different local climates—seems scarcely second in economic value to the great work being done by our experimental farms. To know the average temperature of the growing season in each locality, the average cold of winter, the ordinary and extra-ordinary extremes of the cold season, the rainfall, the average length of time between killing frosts of spring and autumn, and such other details of local climate as have a direct bearing on fruit culture, is to have at the command of the fruit growers and others, the means of determining at once, what kinds and varieties of fruit can or should be grown in any locality. The information, which would of course be mapped as accurately as possible, by lines winding and twisting with the varying climatic conditions, would be based upon the records accumulated by our Meteorological service, aided by the facts of altitude, slope and local topography supplied by our railway and geological surveys, facts, the bearing of which on climate, it is in the province of climatology to measure the influence of, even where meteorological records are scanty or absent. With the light thus brought to bear, the experience gained in Ontario and elsewhere, as to the fruits that grow or fail to grow in particular localities, could at once be applied to all localities, even where fruit culture has never been attempted, and this, too, with a certainty of conclusions otherwise to be attained only by a costly process of actual testing, requiring, in many cases, years of time, and involving an incalculable waste of money and effort.

Our experimental farms can never test the adaptability of certain fruits to local climate. They represent only a few varieties of our climate. There are but two farms—those at Nappan, N. S., and Guelph—that represent any of the points in the great range of climate between that of Niagara and that of Ottawa, a range as great as exists between Niagara and North Carolina. Such farms would have to be multiplied many-fold, to test the climatic capacity of this province for fruit growing, and spend many years' time to arrive at conclusions which may be immediately known by the means proposed.

As it is an axiom, that on similar soils and with like culture, any variety of plant that succeeds or fails in a given locality, will succeed or fail in all other localities having essentially the same conditions of climate and soil. The survey proposed would give the experimental farms and the fruit growers' associations valuable aid in deciding where to test Canadian, Russian and other fruits, etc.

In Ontario the climate varies so much within short distances, and owing to the influence of lakes great and small so independently of latitude, that hitherto the question of what varieties may be best suited to particular localities, has been puzzling indeed. Differences of fifty days of the frostless season occur even south of the main line of the Grand Trunk, in Western Ontario. Further north, where altitudes suddenly vary and small lakes abound, the contrasts are still sharper. Localities, especially on the eastern and southern sides of our little lakes, have frequently a frostless season a month longer than other localities scarcely a mile away. Some particular varieties of fruit can be grown in some localities a hundred miles further north than their general line.

A climatic survey would unravel these many characteristics of local climate, and greatly stimulate fruit growing, by suggesting a full use of our possibilities and assisting us in determining the most profitable varieties suitable to each locality, and would also enable the Fruit Growers' Association to give a wider scope and a more definite direction to the investigations which are being made by it from year to year.

Lindsay, Dec., 1891.

THOMAS BEALL.

↔ New or Little Known Fruits. ↔

THE ROUND BORSDORFER APPLE.

SIR,—I see by the December number of the HORTICULTURIST that one of the trees you are sending out for trial for next season, is the Russian apple, Round Borsdorfer. I have had that variety bearing for a few years and like it very much. It is a smallish apple of very good quality and a long keeper. The tree is *perfectly* hardy, and a good bearer for the cold sections of Ontario and Quebec; where an iron-clad tree is required, it is very desirable.

Yours truly,

Grenville, P.Q.

ROBT. HAMILTON.

PERENNIAL VEGETABLES.—Asparagus, rhubarb, and horseradish are the principal representatives of this class. Asparagus, when once planted properly, will last almost forever. The principal condition for success with this plant is to give it plenty of room; a distance of four feet each way is found best for field culture. In the garden, we prefer a single row, with plants two feet apart, to planting in beds. Rhubarb will also yield a crop for many years, but in most cases it is better to take up the plants and make a new bed or row every six or eight years. To have large, crisp stalks, cover each clump with two or three forkfuls of stable manure after the ground freezes in the fall. Horseradish in the family garden is generally left to take care of itself, but if first-class roots are desired, it should be treated like an annual and re-planted every spring.—*American Agriculturist.*

‡ The Kitchen Garden.

ONION RAISING AND HOW TO OBTAIN THE BEST RESULTS, AND HOW TO CATCH THE HIGHEST MARKETS WITH THE CROP.



EXPERIMENTS conducted at the station in 1889 and 1890, fully demonstrated that much is to be gained by sowing onion seed in the green-house or hot-bed in February or March and transplanting the young plants into the open ground in April or May. As compared with onions grown by the ordinary method, the transplanted ones were from fifty to one hundred per cent. ahead in size and total marketable product. A marked difference has been observed in varieties, however, as to their adaptability to this method of treatment. An extended and careful study of varieties has been made the past season, with reference to their adaptability to transplanting. The following are some of the most important results of the investigation :

EARLY VARIETIES.

These require separate mention for the reason that as a class they are peculiarly adapted to transplanting. Nearly all are white and very much flattened. Some attain five inches in diameter and less than two inches in thickness. If sown in February and transplanted into the open ground as early as it can be worked in the spring, the young onions may be pulled for bunching in May and June, or nearly as early as those grown from sets. By the first of July they are ripe enough to be pulled and sold in the dry state. Both in the green and dry state they are much superior to onions grown from sets and sell for a higher price.

In these early onions the greatest profit is found, as they not only bring fancy prices, but the crop can be cleared from the ground in time for celery, or other fall crops. The varieties best adapted to the purpose are Barletta, Marzajola, Pearl and Bermuda. The first named is sold under various names, such as Extra Early Barletta, Adriatic Barletta, New Early Adriatic, Bloomsdale Pearl, New Queen, Early Radish, etc. Barletta is the earliest of those named, but Marzajola is only two weeks later and much larger. These two are the best of the early sorts.

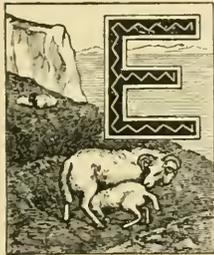
SECOND EARLY AND LATE VARIETIES.

These classes are not easily separated although there is considerable difference between the extreme in time of ripening. Some of the second early sorts, such as Danvers, Wethersfield, Michigan and White Globe do not respond so readily to this method of treatment as the extreme early and late sorts. They have, in every instance, given increased yields by transplanting, but the gain is less than with some of the early and late sorts.

On upland soil, however, where onion growing is somewhat precarious and uncertain, transplanting pays even with these varieties.

Of the second early and late sorts those that give the best results by this method are White Victoria, Prizetaker, Rocca and Pompeii. Prizetaker, is also known as Maule's Prizetaker, and the Spanish King of some dealers is the same, while with others it is quite different. Rocca is also known as Giant Red Rocca and New Giant Rocca. Pompeii comes under various names such as Giant Pompeii, Red Mammoth Pompeii and Mammoth Pompeii. Rocca and Pompeii possess considerable merit, but both are so badly mixed with other varieties as to make them quite unsatisfactory. White Victoria and Prizetaker are the best of all the varieties, for the general crop, thus far tested. Both attain a large size, frequently weighing more than a pound each. They have, at the station, in several instances yielded at the rate of fifteen hundred bushels per acre, and two thousand bushels per acre is quite within the bounds of possibility.—*Bulletin Ohio Exper. Station.*

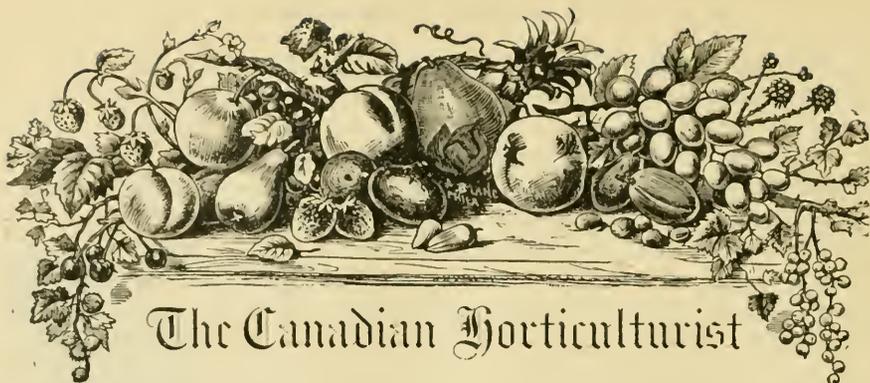
BEST FERTILIZER FOR CABBAGE HILLS.



ETHER ashes or bone, separately, or phosphate, such as are to be found in the market, make excellent starters for cabbage, when well fixed in the hills. I have sometimes put these in the hills before planting. At other times, when I had reason to fear that they would not be sufficiently well mixed with the soil to prevent killing the young plants, I have had them scattered around the plants just before hoeing them, taking care to cover the fertilizer with the earth drawn around the plants.

During the past season I have tried a new method, which has afforded me great satisfaction. I first spread a two inch layer of fine soil on the shed floor, which I moisten well with the sprinkler, and then add two inches of flour of bone, also well sprinkled, and then finally one to two inches of unleached wood ashes, which was also well moistened. In this order I formed a heap about three feet high. In about a fortnight this heap had heated sufficiently to dry the moisture, when it was cut down with a hoe, and all the dry lumps knocked up fine. I used a closed handful of the mixture in each cabbage hill before planting.

In all my experience in growing cabbage, for upwards of thirty years, I never saw more thrifty plants than grew over that manure. The leaves were broad and open, with that healthy green color that delights the farmer's eye, and without that naked stem connection of the leaves with the stem which characterizes feeble plants. The caustic potash of the ashes had so acted on the fine bone as to make it very much more valuable as a fertilizer. Though it was not made soluble, yet it readily became so when in contact with the soil.—*American Cultivator.*



The Canadian Horticulturist

SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

NOTES AND COMMENTS.

SMALL FRUITS AT GENEVA.—Mr. C. E. Hunn, of that station, speaks very favorably of the Caroline as a fine yellow raspberry for the amateur's collection. He is right in saying that it is very productive, that it is hardy, and that, owing to the softness of its berries, the fruit is not suitable for shipping, but when he speaks of the superb flavor of the Caroline as entitling this variety to a place in every collection, we must differ with him very decidedly. The Caroline, in our opinion, is of exceedingly poor quality, and no more desirable for home use than for market.

Of the blackberries he highly commends the Agawam as being hardy and able to resist drought, maturing all its fruit. While this is true, we do not give it a very high place for market on account of its small size. Large berries like the Erie or the Kittatinny bring the most money in our markets. The Agawam, however, is of good quality and quite productive.

Of black currants, Mr. Hunn recommends Ogden's Black Grape and Champion Black as two of the best. He condemns the Crandell as utterly worthless.

Of red currants, Fay's, Cherry and Prince Albert are the leading varieties, the latter being especially valuable on account of its late fruiting. The Prince Albert, he says, begins to ripen its fruit when the other varieties are ready to pick, and can be left on the bushes for a long time, as the foliage completely covers the bunches and keeps them from being scalded by the sun.

Speaking of gooseberries, he places the Triumph at the head of the list of large-fruited varieties.

TESTED.—Mr. L. Pache, of Bryson, Que., writes that the Princess Louise apple tree, which was sent him by the Association two years ago, has so far proved itself hardy with him.

GIPSY GIRL.—Our readers will notice on our premium list a hardy variety of apple of great promise, called Gipsy Girl. It is one among the new varieties introduced by the Experimental Farm from Russia. Prof. Craig says that it is an extremely handsome apple and that the tree is a strong, healthy grower. He counts it one of the very best in the trial orchard at Ottawa. It gave some samples of fruit the second year after planting, and is again bearing the third year.

The other varieties are also new importations of great promise, probably of equal merit, especially the Round Borsdorfer and Blushed Calville. Both are very excellent varieties for growing in the north, but are of such merit as to be well worth cultivation anywhere in Ontario. They will compare favorably with the very best varieties we grow, and possibly may be found superior to any of their season.

The **SILKEN LEAF** and **LITTLE HAT** are new importations by the Experimental Farm, which are thought to have special merit for the cold north.

We would particularly recommend a trial of these new Russian varieties by all our subscribers in the northern parts of Ontario, for we have great hopes that they will prove of special value.

ROYAL TABLE is a Russian apple which Prof. Craig highly commends. In his examination, before a select standing committee of the Parliament of the Dominion last July, he stated that the tree was a compact grower, with round top and slender twigs, and medium sized leaves. It has borne abundant crops for three years past, at Abbotsford, Que. The fruit is medium to large, keeps well, even as late as the month of April.

THE LONGFIELD apple is a Russian variety of much value, according to Dr. Hoskins. It is an annual bearer, and keeps better into the winter than the Fameuse. The fruit is very handsome, very good, and of fair size, when not allowed to over-bear. It counted equally good for eating or for cooking.



❖ Question Drawer. ❖

FRUITS FOR THE NORTH.

SIR,—Which would be the two best kinds of cherries, plums and pears to plant in the north, say 45½ north latitude?

L. PASCHÉ, *Bryson, Que.*

Of cherries, Mr. Craig, who has been testing these at Abbotsford, Que., recommends Early Richmond, English Morello, Dyehouse and Montmorency Ordinaire. Should these not succeed, we would recommend a trial of the Ostheim and Vladimir. Of plums, we would suggest a trial of the Weaver and Moore's Arctic. Of pears, the Flemish Beauty and Bessemianka.

HARDY CHERRIES.

SIR,—I am planting a number of cherry trees and would like to know whether I could get the Bohemian Queen. I see it highly recommended in Vol. 13, page 104. I have written to several nurseries and none of them have it. Do you think the Windsor cherry will stand our part of the country, twenty miles north of Guelph?

THOS. HANDLEY, *Orton, Ont.*

The Bohemian Queen is not propagated by any nursery in Ontario. Some pits were sent us by Mr. Jaroslav Niemetz, a Russian officer. Should we succeed in growing them, we shall in time have some trees to distribute among our members. We cannot say how far north the Windsor cherry would succeed, but we would like our correspondent to test it and report.

GOLDEN QUEEN vs. CUTHBERT.

Sir,—Does the Golden Queen raspberry produce and sell better than the Cuthbert?

A. BROWN, *Bethel, P. E. I.*

Reply by E. Morden, Niagara Falls South.

The Golden Queen closely resembles its parent, the Cuthbert, except in color. Its color is a golden orange. It seems to be a somewhat better grower and equally productive. Its quality in the dark could not probably be distinguished from that of the Cuthbert. In size and texture of berry it does not differ appreciably from the Cuthbert. Although, in my opinion, it is attractive in appearance, I would not advise any one to plant it largely for market purposes. The Cuthbert is a safer variety in this respect.

❖ Open Letters. ❖

A REMARKABLE PLUM.

SIR,—I am not an aspirant for fame, present or posthumous, but I have the largest plum tree I ever saw in any country in which I have travelled. It is fifteen years old and has never had the black knot in the smallest degree, while many varieties surrounding it have been badly mutilated each year on account of the knot. The plum is a seedling. The fruit is like the Green Imperial in appearance and very excellent either for table or for canning. It was so loaded this year that it was a curiosity to all visitors. The crop was estimated at from six to ten bushels. The branches were very fine, mostly the size of a pipe stem and all weeping. Even the larger branches had to perform the same ceremony out of sympathy, so that the tree formed a perfect weeping tree. The curculio does not damage this variety as much as the others, indeed I failed to notice any ravages by this insect this year. The tree is a good bearer, though never before has done so well as this season. The chief defect is the quantity of sprouts which come up all about the trunk.

I would very much like to discover a Russian apple that would thrive in the North-West, besides the Siberians. The Duchess of Oldenburg will grow and flourish up to the end of Lake Superior, but I think not beyond.

CHAS. JARVIS, *Brantford, Ont.*

NOTE.—Our friends who are desirous of discovering some hardy apple that will flourish in the North-West, should give a fair trial to the Gipsy Girl, and the other Russian kinds, which are upon our list for distribution for the spring of 1892.

FRUIT INSPECTION.

SIR,—I realized 50 cents more per barrel for Fameuse shipped to Scotland than I could get in Montreal (\$2 25 net).

I am in hearty sympathy with Mr. A. H. Pettit, regarding a system of fruit inspection, if a practicable plan could be devised. It would be a slow process to examine twenty, or thirty thousand barrels of apples that leave our port every week. I had occasion to be in one of our leading commission houses last season when a lady came in with some small wild apples she had found in the middle of a barrel of Kings! All the commission merchant could do was to hand her back 50 cents, with strong language against the fruit grower who sent the apples, who also was docked 50 cents on each barrel. I asked him why he did not write the fruit grower about the matter. He answered, "I cannot kick, he sends me such lots of berries."

I always make a practice of branding my name upon the barrels, but we do not get the credit. For instance, I had occasion to load a car of onions for one of our leading commission houses. They had their man scraping off my name and putting on theirs. "Of course they are not going to pay to advertise another man's business."

What about a Dominion Fruit Growers' Convention this season?

R. BRODIE, *Montreal, Que.*

THE CRANDALL.

SIR,—Last spring I purchased some plants of the "Crandall Black Currant" from a nurseryman in whose catalogue it was lengthily described as a most desirable novelty. Of course, they have not yet fruited with me, but the foliage and habit of growth is so exactly similar to that of a large bush of the old established yellow flowering currant (*Ribes aureum præcox*), growing in my garden, that I am getting suspicious that this vaunted "novelty" may be none other than our old friend under a new name. If so, it is worthless as a fruit producer, as a few scattered berries, single or in pairs, is all that my old bush produces. I think it well to ventilate this subject in your pages for the consideration of others before the next planting season arrives.

ARTHUR GEO. HEAVEN, *Boyne, Ont.*

THE FRUIT EXPERIMENT STATION.

Sir, — Being at the meeting of the Fruit Growers' Association when they were discussing the establishment of an Experimental Station in the interest of fruit growers, I will add my opinion to those expressed in the meeting. Would it not answer the purpose as well, to have a fund for experimental purposes without the station? To illustrate, take the "Excelsior Peach" for example (a gentleman in the meeting said it was a cling stone, I see by description in *American Agriculturist*, it is a free stone). The price was said to be \$1.00 per tree single, or \$25.00 per 100 trees. Now, if there was an experimental fund, buy 100 trees, and after supplying the present stations, divide the balance into lots of two each, and send to trusty fruit growers all over the province from Windsor to Ottawa, and from Niagara to Owen Sound, to report on the hardiness of the tree, and character of the fruit.

Thus, the value of the tree would soon be known, and the section of the country in which it would succeed. Whereas, if it was tested at a station, it would take as long time to test it, and the test would only be of value for that immediate locality, and individuals in other localities would lose as much more time to find out if it would suit them. Or, if the 100 trees was retailed at wholesale price, I think there are very few fruit growers who would grudge 50 cents for two trees, when they would not give one dollar for one tree. You will thus see the drift of my idea, which is to test new fruits or plants, over as wide a section of country, in as short a time as possible, and with as little expense. I would like to emphasize what one speaker said about growers confining themselves more to such fruits as they could grow to perfection.

R. R. HUNTER.

Dundas, Dec. 29, 1891.

THE KENTISH COB-NUT.

SIR, — In answer to numerous enquiries regarding the English cob-nut, I would state, there was an extra crop this year, something over a bushel to the dozen trees; the young trees four or five years of age also bore well. Mr. H. E. Van Deman, Pomologist of Washington, is introducing and recommending the English cob for planting in the States. By request, I forwarded him a specimen of the nut last year. This nut does not become hollow, nor has it that rank taste from age as the Spanish nut. I have some gathered in 1889 still sweet and sound. Planted twelve feet apart, I judge to be the proper distance, unless for a wind break, then six feet: fertilizing like corn. I would not advise planting a tree by itself.

E. WARDROPER, *Pelee Island, Ont.*

❖ Our Book Table. ❖

MEEHAN'S MONTHLY for December contains a beautiful colored plate of *Sarracenia purpurea*, or side-saddle flower. This magazine is one of especial interest to all gardeners and fruit growers who have the slightest interest in the study of botany. Magazines devoted to that science are now far beyond the reach of amateurs; even botanical students can scarcely appreciate them, unless each is provided with a first-class microscope. But in *Meehan's Monthly*, we have the various native plants brought before us, one by one, in a way that will interest the amateur botanist. A monogram is written showing its history and its botanical relationship, its peculiarities and its habitat in a very interesting style. In addition to that, much attention is given to general gardening and fruit growing. It is published by Thos. Meehan & Sons, Germantown, Philadelphia, Pa., U. S.

FRUIT GROWING FOR PROFIT, is the title of a pamphlet published by W. O. Creighton, a graduate of the Nova Scotia Provincial Agricultural College, and editor of the *Maritime Agriculturist*. This work is calculated to encourage fruit growing for profit in Nova Scotia, and is, on the whole, a creditable production. It is evident, however, from some details of operations there, that we in Ontario are in advance of the Nova Scotia orchardists in our methods of handling fruits.



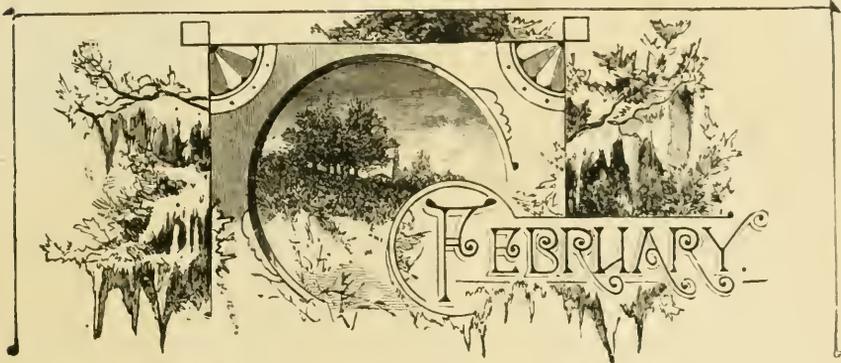
ANJOU PEAR.

THE
Canadian Horticulturist.

VOL. XV.

1892.

No. 2.



THE ANJOU PEAR.



HE late M. P. Wilder, who was for so many years at the head of the American Pomological Society as its revered President, has the honor of introducing to American fruit growers this excellent early winter pear, the Beurre d'Anjou. He considered it the best of all pears, and said it would be his choice, if he were limited to one variety.

Its name would seem to imply that it is of French origin, but it is said to have first originated in Belgium, whence it was brought into France, and it soon became one of the most popular varieties in that country.

This pear was also the favorite of the late Patrick Barry, former President of the Western New York Horticultural Society. In January, 1888, he exhibited the most magnificent specimens of Anjou pears that we ever saw, at a meeting of that society held in Rochester on the 26th of January. They were quite as large as the ones represented in our colored plate, and quite as yellow. He had kept them in a cool room, and they were in prime condition for eating, though a month after their usual season. "As an early winter pear the Anjou is unequalled," were the words of this veteran pomologist at that time. Had the Anjou a red cheek like that of the Clairgeau, it would be generally accepted as a perfect market pear, but its dull color, at least until it yellows up, is somewhat against it in the market.

The late E. Moody, of Lockport, N. Y., remarked, at the same meeting, that with him the Anjou had suffered considerably from the blight, but that otherwise he considered it a magnificent variety, and worthy of being planted much more extensively than it is at present. Others stated that they had not found it to be any more subject to blight than other varieties, and with this the experience of the writer agrees.

"The Anjou is one of the most profitable pears for the orchard," was the testimony of the late A. J. Downing, "bearing abundantly and evenly, whether grafted upon the pear or upon the quince stock." With regard to the profits of growing this or any other kind of pears, however, times have wonderfully changed during the last twenty years. In the year 1869, Mr. P. T. Quinn published a book on pear culture, the reading of which filled the writer with dreams never to be realized. He stated in that book that pears would bring an average of some \$20 or \$30 per barrel, and that they were, by all odds, the most profitable of all fruits.

Certainly at such prices they would be, but the cold reality is a little different nowadays, when we find the average is only about \$4 per barrel, for our finest varieties.

In this connection, it will be of interest to include Charles Downing's description of the Anjou pear: Fruit, large, obtuse pyriform; stem, short, thick and fleshy, inserted in a cavity, surrounded by russet; calyx, very small, open, stiff, in an exceedingly small basin, surrounded by russet; skin, greenish, sprinkled with russet, sometimes shaded with dull crimson, and sprinkled thickly with brown and crimson dots; flesh, whitish, not very fine, melting, juicy, with a brisk, vinous flavor, pleasantly perfumed; very good to best; October, November.

THINNING FRUIT.—A Missouri farmer says that he thinned the fruit on his trees at the rate of twelve trees in ten hours. They were large enough to yield an average of six bushels to a tree. He figures in this way: If he had a thousand trees it would cost him \$85 to have them thinned, with labor at \$1 per day, or \$170 at \$2 per day. He has but few culls among his apples, and the selected crop will easily bring him ten cents per bushel more than the fruit from trees which was not thinned out, which, at six bushels to the tree, would increase his sales by \$600.

Again, he claims still another great advantage. It is not the growth of the fruit that exhausts the tree so much as the formation of the seed, and reducing the number of seeds grown by picking off one-half or two-thirds of the fruit that sets, he relieves the tree so that it can form fruit buds in the fall for the next year's crop. In ten years he has not had a failure of the trees to bear every year, excepting when they were overloaded and he neglected the thinning. Then all the strength was used up in growing fruit, or rather seed, and there were no blossom buds formed.—*Massachusetts Ploughman.*

THE WORLD'S FAIR.



OUR readers will have noticed, in our January number, some reference to the important exhibit of Canadian fruits which is proposed to be made at the great World's Fair of 1893, in the City of Chicago. That both the Provincial and Dominion Governments will heartily endorse the accomplishment of so worthy an object and make liberal grants, such as will be necessary, is quite evident; and it is to the Ontario Fruit Growers' Association that the authorities will look for a collection of Ontario fruit for this exhibition.

The great point of importance before us in Ontario is, to see to it that every fruit grower in the province is prepared to do his part. Nor is it too early to consider this matter, for we must begin with the opening of the present spring to give the most careful cultivation and fertilizing to those trees and plants from which we expect to gather the fruits for such an important exhibit. Then, the fruits on these must be most carefully thinned so as to produce the large size and high color, which should characterize the perfect specimens selected.

There is another reason why it is necessary to consider at once the careful preparations for this great exhibit. The Fair opens in the month of May, before any of our northern fruits have ripened. What can we do at that season with three thousand square feet of space which we have asked for to accommodate the exhibit of fruits from Ontario, unless we have a large collection of our finest fruits, both large and small, put up in glass to help fill it up and attract the attention of visitors until the arrival of the fresh fruit. A collection of this kind was made at the Colonial and Indian Exhibition, under the superintendance of the worthy Director of the experimental farms of Canada; and the effect is very marked in the attention which has ever since been given us in the Old World. Mr. Saunders, who will do everything he can to forward the work before us, under the approval of the Minister of Agriculture of the Dominion, has already been making extended experiments with regard to the most approved liquids for

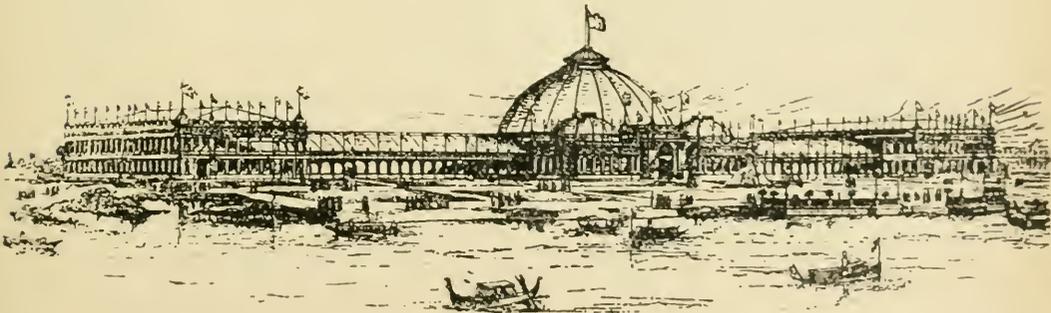


FIG. 5.—HORTICULTURAL BUILDING AT CHICAGO EXPOSITION.

preserving our fruits, and at the proper time he will, under the sanction of the Dominion Government, send out the proper appliances, for preserving our best fruits, to all those in each of the provinces who are willing to aid in this great work.

It is evident from what we have said that this work, of collecting and preserving fresh fruits in glass, must be done during the present year of 1892, and begin with strawberries in the month of June.

Now, while this exhibit is one which should appeal to the patriotism of every Canadian fruit grower, still it is not the intention to ask our growers to furnish their finest fruits without some remuneration, in such cases where payment is desired. No doubt, a great many would esteem it a privilege to make contributions free of charge, for so laudable an object, but this matter rests with the donors themselves. Whether by sales or donations, the fruit must be had and the work carried out to a successful issue.

We believe no country in the world excels Ontario in the production of some varieties of fruit, particularly the apple. Ontario apples are already sought for in the markets of Great Britain and the continent, and, since the nations of the world will be so largely represented—both in the visitors and the exhibits—at Chicago, it is evident how important it is, for the best interests of our country, that our exhibit should be one that does us credit.

THE FARMERS FOURTH ACRE FRUIT GARDEN.

Our garden being 66 feet wide and 165 feet long, and wishing to do all labor possible with a horse and cultivator, we stake off the ground in rows 150 feet long and seven feet apart.

Strawberry rows to be one half this distance, leave a head land 7½ feet wide at each end for turning. Make the first row three feet from the outside and set as follows :

	Production.
1st Row—13 Plums and Crab-apples—5 Desoto, 2 Cheney, 3 Transcendent, 3 Hyslop.	5 bushels.
2nd Row—50 Blackberries—40 Ancient Briton, 10 Snyder.	3 bushels.
3rd Row—50 Black Raspberries—40 Ohio, 10 Gregg.	2 bushels.
4th Row—50 Red Raspberries—25 Marlboro, 25 Cutlibert.	2 bushels.
5th Row—50 Currants—25 Victoria, 25 Red Dutch.	4 bushels.
6th Row—50 Currants and Gooseberries—25 White Grape Currants, 15 Downing, 10 Houghton.	5 bushels.
7th, 8th and 9th Rows—300 Strawberries—Warfield No. 2, Jessie, Crescent, Wilson.	5 bushels.
10th Row—17 Grapes—3 Moore's Early, 6 Wonder, 5 Delaware, 3 Concord.	4 bushels.
Total.	30 bushels.

These suggestions are based on practical experience in growing forty acres of small fruit, twenty-five acres of same in blackberries and raspberries. — M. A.

THAYER, *before Wis. Hort. Soc.*



MR. A. H. PETTIE.

SOME PROMINENT CANADIAN HORTICULTURISTS.—XIV.

MR. A. H. PETTIT.



R. A. H. Pettit, of Grimsby, the new President of our Association, comes of one of those old families of U. E. Loyalists who settled in Western Ontario during the close of the eighteenth century, choosing to leave the country rather than live under a flag hostile to their own.

It was a wise choice when the family settled at Grimsby, in that favored fruit belt protected, on the one side, by the beautiful Niagara escarpment, and on the other by the picturesque waters of Lake Ontario.

Born in 1836 on such soil and with such favorable surroundings, is it any wonder that Hamilton A. Pettit soon found that his farm was better adapted to fruit culture than to ordinary farming?

Leaving one side his experience in mixed and dairy farming, we notice that his first large venture in fruit growing was in planting a ten-acre peach orchard, some years ago, and at a time when few, as yet, had planted any large orchards of that fruit. The large crops of fine yellow Crawfords, harvested as a result of that venture, gave him a lift in financial matters and encouraged him to plant more of his farm with fruit trees and vines.

Some acres of grapes, mostly Concords, also made a good record, yielding, one favorable season, at the rate of six tons per acre, at a time, too, when grapes brought a much higher price in the markets than they do now. Since that time he has engaged in the cultivation of pears, plums and small fruits, in addition to a large orchard of apples and pears, of standard varieties.

Mr. Pettit has also been active in advancing the interests of his fellow-growers, as is evidenced by the positions to which they have appointed him.

In 1878, Mr. Pettit was instrumental in organizing the Grimsby Fruit Growers' Association, and he was elected the first president. For a long time this Association was very active, and consisted of a large number of prominent fruit growers in the Niagara district. Among the first things which Mr. Pettit did, as President of this Association, was the calling of a meeting to discuss the question of the yellows in the peach trees, and, as a result of this agitation, we have the present Act for the destruction of this disease.

In 1880 he formulated the basis upon which the Niagara District Fruit Growers' Stock Company has since been operating, and he, therefore, might be called the originator of that scheme. The first circular of this Company was issued on the 6th of May, 1881, the Company having been organized in April, 1880.

When Farmers' Institutes were being organized throughout the country, the Lincoln County Farmers' Institute was organized on January 25th, 1886, with Mr. Pettit as its President, and this office he holds at the present time.

It is scarcely necessary to speak of his position as Secretary of the Central Farmers' Institute, as that is so recent and well-known to our readers all through the country. The first secretary of the Central Farmers' Institute was Mr. Thos. Shaw, who relinquished it on accepting a professorship at the Ontario Agricultural College, Guelph. Mr. Pettit was then unanimously elected to the position. He was a man fitted for this appointment, being a prominent member of the committee which drew up the report, laying out its plan of operations.

For some time Mr. Pettit has been the Director of the Fruit Growers' Association of Ontario for agricultural district No. 8. In December, 1890, he was elected Vice-President of that old and respectable body, and at the annual meeting, held December 15th, 1891, he was elected President.

We have been very fortunate in securing a first-class photogravure of the subject of our sketch, which, we believe, will interest a large number of our readers.

OSAGE HEDGES.—In the best farm districts of Pennsylvania the progressive farmer still sticks to the osage orange fence. They are by all odds the cheapest, but the leading objection is the robbing of the earth by the roots. The roots of trees grow no further away than the top is allowed to grow. A well-managed hedge only throws out the roots to about ten feet on each side. But even this is begrudged by a good farmer, who can plow to within two or three feet of a post and rail fence. The Chester county farmer uses a corn-knife or hook to trim the hedges. They are cut twice a year—hay time and harvest. A man can cut a mile a day.—*Meehans' Monthly*.

IVY ON WALLS.—A friend recently called attention to a case which he thought subverted our view, that the ivy growing on walls tended to make them dry rather than damp. On looking at the case, we find that the wall was covered with the *Ampelopsis Veitchii*, or as it is called, Japan Ivy, and that the vines had been suffered to grow over the shingle roof of the house some four or five feet from the gable end, and that the spouts and other water conduits were completely choked by this growth of vine and filling up with leaves. It is no wonder that a house should be damp under such circumstances. It should not be forgotten that the vines on walls must never be allowed to reach the roof or clamber in the gutters, but must be confined entirely to the vertical surface of the walls on which they grow. The innumerable number of small rootlets absorbing moisture continually, generally make walls so dry and hard that it has been found at times in the old world, when necessary to take down a building, almost impossible to do so, on account of the extreme hardness of the mortar, which has been kept dry for so many years through the agency of these roots. The case we have referred to, shows how often a good idea may be spoilt by reason of the thoughtless manner in which the idea is carried out.—*Meehans' Monthly*.

WIRE WORMS.



THE experiments at Cornell with the various methods, supposed to help in exterminating the wire worm, have proved the utter futility of most of them, and shows that much useless expense is incurred by farmers in their vain efforts to destroy them.

The true wire worms are larvæ of the Click beetle, a class known to entomologists as Elaters; both the larval and perfect form of one species of which are shown in the accompanying illustration.

The larval form is only too well known to our readers, but some may not be aware that the Click beetle is the same insect, under another form. It is now proven that almost the only effectual way of destroying them is by fall ploughing or by spading of the ground, thus disturbing the insects at the most critical period of their existence—just when in a state of transformation into the adult form. It appears that a long time is required before the body of the mature insect becomes sufficiently hardened to bear exposure, which, therefore,

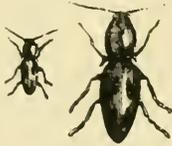


FIG. 6.

A CLICK-BEETLE.
Drasterius elegans,
natural size and
enlarged.



FIG. 7.—WIREWORM.

Dorsal view, enlarged two diameters.

at this season means certain death. Since, however, the wire worm remains three years in its larval state, it is evident that this treatment must be continued during that length of time, before the soil can be at all cleared of this troublesome pest.

There are a great many supposed remedies which have been recommended in the public press, upon which farmers and others have spent much money, but it would appear that all these are comparatively useless and are a simple waste of means. They are such as the application of kerosene, salt, kainit, lime, gas-lime, etc., but the experiments at Cornell have proved that, while some of these are useless to destroy the wire worms, others—to be effective—would need to be applied in such quantities to the soil as to render it barren, and, therefore, so to speak, the remedy is worse than the disease.

BLENHEIM PIPPIN APPLE.



OW that our Association is considering the relative values of the standard varieties of apples for the various districts of Ontario, it will be interesting to note the reputation which that excellent late fall or early winter apple, the Blenheim, sustains in Great Britain. The following extract is from *The Garden*, one of the leading English magazines :—

“ This is of all British apples the best known, and it is well, for the sake of future apple consumers, that its merits should be kept before the public, or it may happen that the present generation will refrain from planting it largely, and thus, when our present fine old trees have died out, the best all-round apple in cultivation will have ceased to exist. It is a fact even now that, as compared with the Baldwin, Wealthy, King of Tompkins County, and other showy transatlantic apples in the market, we have few varieties which will, in the eyes of purchasers, find more favor than the Blenheim Pippin. As a high-class dessert variety, none, on the whole, excel Cox’s Orange Pippin or Ribston Pippin. These are, however, attractive only under superior culture and when carefully selected and packed. America can send us nothing equal to these in flavor, but in external appearance they beat us. Hence it is that whilst the sale of British apples is limited to the fruiterers, we see the richly-colored American sorts in every grocer’s window, where, sold at per pound, just as Spanish onions or dried fruits are, they find favor which our own varieties never can apparently possess. The hot American summers produce in the apples a drier flesh and brighter skins than our poor summers can give. It is a great pity some efforts were not made to plant the Blenheim Pippin on warm sites and slopes, where, in addition to being forced into fruiting rather earlier than happens when the trees are planted on cold soils, or indeed anywhere, we should always get the richest color the variety will produce. In some positions the Blenheim is almost rosy tinted ; when so colored it is one of our very handsomest apples. But generally its matured hue is of a russety gold, and being of good size also and of the most perfect form, it is not possible to furnish in the bulk a more taking market apple.

RASPBERRY PLANTING.—Five or six years is the average term of duration of raspberry plantations ; if retained longer, the fruit is small and but little of it. As it takes a year or two for the plants to reach their best bearing condition, it is well to make a new plantation every third year, and thus have two plats, one coming into full bearing as the other is going out. Plants can be set in fall or spring. — *Vick’s Magazine*.

PEARS. VARIETIES AND CULTIVATION.

SIR,—Kindly give me the names of a few varieties of pears likely to do well in this part, for fall and winter. Pears, as a rule, do not succeed very well here. Mine usually take the blight as soon as they begin to bear, and, with some, the Flemish Beauty cracks badly. Still, I think I shall try that variety. Clapp's Favorite seems to do pretty well about here. The worst difficulty we have to contend with is the blight. The ground is a well drained, rich, clay loam. I shall also be glad of a little information upon the general cultivation of the pear.

A. J. COLLINS, *Listowel, Ont.*



THE questions asked by our correspondent are somewhat vague. Most of the varieties which grow in the Niagara district should succeed in the County of Perth, but which of them would fail in that section, we are scarcely prepared to say. This will be more fully taken up by our Association in a future report in which we hope to give a list of the pears adapted to the various sections of Ontario, similar to the one already prepared on apples.

Of course, it is generally known that the Flemish Beauty is one of our hardiest pears, and there are some of the Russian varieties which succeed well in very cold districts; but, as our correspondent says, the Flemish Beauty is badly subject to the blight and the scab, which almost rules it out of any collection in places where other varieties will succeed.

South of Lake Ontario the following list embraces most of the best varieties for home use and market: Doyenne d'Ete, Beurre Giffard, Osband's Summer, Tyson, Clapp's Favorite, Bartlett, Buffum, Beurre d'Anjou (*d*), Louise (*d*), Duchess (*d*), Howell, Sheldon, Doyenne Boussock, Lawrence, Winter Nelis and Josephine de Malines.

With regard to the cultivation of the pear, it differs very little from that of the apple. A good loamy soil, with a dry sub-soil, not too rich, is found to favor the health and longevity of the pear tree. It adapts itself to a variety of soils, and will succeed even upon sand, but the trees are not so healthy, nor so fruitful, as upon a soil of a heavier texture, neither is the fruit of as good a quality. We usually plant our standard pear trees a little closer in the rows than the rows are themselves apart from each other; for instance, the rows might be twenty feet apart and the trees ten or fifteen feet apart in the rows. If one desires them to be in more regular form, they would succeed very well at a distance of fifteen feet each way. Some of the larger growing varieties, however, would be better planted twenty feet apart; while the dwarfs may be planted ten or twelve feet apart.

Seeding the pear orchard down to grass is often advised, but we should not consider this advisable for any length of time, at least, not unless the ground is well mulched with ashes, or some other manure, to keep the ground moist and

Those marked "*d*" are better grown as dwarfs.

loose. The best plan is to cultivate them freely in the early part of the season, and then cease stirring the ground at midsummer, in order that the young wood may become well matured before the cold weather. A light dressing of ashes and superphosphates, applied every year is most desirable. Barnyard manure may be used, but, if applied too freely, it produces too succulent a growth of wood and a consequent liability to blight.

Less pruning is required for the pear than for the apple. A simple thinning-out of crossing branches, and heading back of a too rampant growth of the young wood, is about all that is required on the standard varieties. In the case, however, of the dwarf varieties, a half or two-thirds of the young wood should be removed every fall or spring. By this means the dwarf trees are kept in a bushy form, which is more symmetrical in appearance, besides being a better form to resist high winds. Neglected dwarf pear trees, which have not been cut back as we have described, grow up too high; and, being top heavy, are easily overturned.

The blight is the terror and despair of pear growers, in every section of the country, but we hope to overcome this difficulty in the near future, by the use of copper solutions, which seem to have a most beneficial effect upon the general health of the pear. These sprayed on the foliage early in the season gives it a bright, green color and renders the fruit bright and clean.

THE HYDRANGEA.—Thomas Hogg is an old favorite with us, with its many clusters of pure white flowers. Hydrangea rosea, beautiful rose color, with the freeness of its flowers will always be a market variety. By mixing iron filings with the soil during the summer, and watering with alun water when potted, you can change the color of the flowers of Otaksa to a blue. The Hydrangea is easily grown from cuttings. One struck in March, planted out before the first of May in rich soil and mulched and watered regularly, will by October make a plant fit to go into a seven or eight inch pot. Do not pinch or top the Hydrangeas after the middle of June that are wanted for Easter forcing. Secure the Hydrangea against frost, as it is liable to injure the flower bud. I lift mine by the 10th of October, pot them in good rich soil and place them until New Year's in a cold frame, giving air during the day and protecting them at night from the frost. They are brought into the greenhouse at New Year's and given a temperature of 60 degrees at night with air during the day, then increase the temperature to 65 degrees at night with little air during the day, until the flowers begin to color. Then gradually give them more air during the day and reduce the temperature at night, this will give a bright color to your flowers and hardy plants. The Hydrangea and Plantier Rose if grown in a warm temperature and exposed without being hardened will wilt. The Hydrangea when in growth requires plenty of watering and an occasional watering of liquid manure.

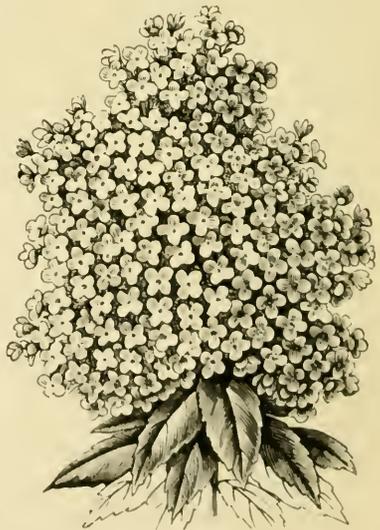


FIG. 8.—HYDRANGEA PANICULATA
GRANDIFLORA.

NOTES AND CRITICISMS ON THE STRAWBERRY.



HERE is so much that can be said about the strawberry and its culture, and the place it fills in the field of fruit growing, that one may be pardoned for throwing out a few thoughts respecting it, although there is much that is valuable on record already. It is what we can put into practice to insure success in its culture, that is most desired, and if one's experience can encourage others in their efforts there is some excuse for setting it forth. Though we may not be doing great things in our endeavors, yet principles can have their action and results, on a small scale as well as on a large one, and here lies the encouragement for strawberry culture in preference to any other fruit, that a greater return in value from a given space can be realized, and a more varied range of interesting experience can be enjoyed. The possessor of an acre of ground can indulge in experimental effort, and have as good encouragement to note his results as the cultivator of ten or more, so that each can contribute his mite with the same confidence as though he were leading the van in fruit culture.

As to modes of cultivation, there are varied objects to be attained which must, in a measure, determine the way we seek to attain them. If profit be the aim, the matted row system yields the greatest return from a given area, and affords an easier protection, as the foliage, if of rank growth, will be a sufficient protection in the spring against heavy frosts, and the sun's scorching rays. The addition of a very light coating of straw, tomato tops, evergreen brush, or any light laying litter, will more than insure sufficient protection. I do not like long manure, as it lays down too close on the plants and has a tendency to smother and make them too tender, in case of late frosts after uncovering. A neighbor of mine covered his patch last winter with coarse manure, and after he uncovered it in the spring the late frosts so injured his plants that he plowed up his patch this fall. I believe the freezing and thawing weather in March, after the snow goes, is the worst time for the strawberry, and those who have not covered their vines in the fall, will do well to attend to it as soon as the snow melts low enough to leave the vines exposed. A hint thrown out lately (by a gentleman who carried on a garden for several years at Torquay, England), for lengthening the picking season, I will repeat for any who may wish to test it the coming season. Plow up ridges two or three rods wide, running east and west, raising them as high as three or four plowings will, and set out early varieties on the south side of the ridge and late ones on the north side. It is claimed that this plan will lengthen the season two weeks or more. Early varieties, as the Crescent and Covil, and later ones as James Vick, will serve as a test for this plan. As a criticism on varieties, with my limited experience, I would speak favorably of the Crescent, Manchester, Bubach, Maggie, Johnson's Wilson, Covil, Woodruff and

Sharpless. I expected much of the Jessie, but did not realize to my expectations. I never have seen the Maggie spoken of in any accounts of varieties, but I like to grow it. It is good size, fine flavor, and holds on well in the picking season, and stands the winter well. It is a rough, ill-shapen berry, however, and this may account for its background estimation among fruit growers. I expect something above the ordinary from the Williams. Nine plants which lived through last winter, out of the dozen that Mr. Craig sent me, produced a fine lot of good healthy plants last summer, and generally when we see fine foliage we hope for fruit to correspond. Last season was proverbial for fine growth in this section, of all kinds of vegetation, after the rains commenced in June. But the late frosts and spring drouth shortened the strawberry crop fully one-half with us.

Nepcau, Ont.

L. FOOTE.

MAKE A HOT-BED AND USE IT.

In preparing a hot-bed for starting early plants or for raising lettuce, it is best to calculate upon having the dirt within at least two inches of the glass when the heat is first put in. It will settle a little, and ought not to be at any time more than three or four inches below the level of the plank. Plants will not grow to perfection in a pit. They must be up near the glass where they can have plenty of light and air, and where they can be made to grow stout and strong. The best frame for a hot-bed is made by setting two planks on level ground (the right distance apart to accommodate the glass), one being eleven inches wide, the other nine. This gives a pitch of two inches to the glass, which is sufficient. The usual size of hot-bed sash is 6x3 ft., and this size is the most convenient.

Through February and March good bottom heat is needed. Strawy horse manure is the best and should be used when about one week old. In putting in the heat, begin at one end of the frame and throw out a square of dirt 6x6 feet and eight inches deep. A good cart load of manure will fill this space up. It should be well trodden. Then shovel the next square of dirt directly upon the manure and fill the space thus made as before. Continue the work until the last square is reached, when the first dirt thrown out can be carted to cover the last load of heat. When seeds are sown it is a good plan to sift sand over the loam and press it down with a shovel, level and smooth. Lettuce sown early in February ought to be ready for market by May 1, which is about the time that people get hungry for it. Through May it invariably sells well. Tomato plants are sown about March 1, and should be twice transplanted. If sown a month later they will do very well. The glass can be used upon cucumbers to good advantage after getting through with the lettuce and tomato plants. — *Farm and Home.*

GROWING WATERMELONS.



HAVE tried many methods of culture, many kinds of manure, and many kinds of soils to grow the best melon, and I find the following the best. I have found some soils, even light soils, that will not produce fine melons. They would have a rusty look. As a rule the best soil is a light, sandy loam, and if newly cleared, or not having been cultivated for three years previous in melons, so much the better.

Whatever tends to compact the soil, whether rainy weather or a deficiency of vegetable matter, is detrimental to the crop. I find the richer the soil, provided it be warm and light, the finer the melons. The ground should be broken quite deep, the deeper the better; broadcast manure over it quite liberally, and then thoroughly mix it with the soil. The finer the soil and the better the manure is mixed with it the better the crop. I prefer marking both ways, as the plants can be cultivated better. Two shovelfuls of good manure should be put in each cross. The best manure used is well-rotted leaf mold and stable manure, put in alternate layers of equal proportion. This should be well rotted and turned over until thoroughly mixed. It may not rush the plant while young, so much as all stable manure, but it will bring more and finer melons. I make good-sized hills, not too high, and drop at least a dozen seeds in each. This is important, for two reasons: so many plants aid each other in raising the soil, and come up better; some seed give stronger plants than others, and will bear better fruit. Planting so many in the hill, we are more apt to get strong plants. These can be selected after the plants are up, leaving two of the best in the hill. As soon as the plants are up well, go over the patch with the hoe, and loosen the soil around the plants. Be careful not to disturb them. I cultivate deep the three first plowings, then shallow until done cultivating. I plow the ground thoroughly between the rows each plowing. The less the vines are moved the better. I ruined a crop by moving the vines after they began to set fruit. As to pinching the vines, I doubt if it pays. There may be a small per cent. more melons, but on the average they are smaller.

After the melons are grown there is much gained in picking at the right time. Some varieties are more difficult to tell when ripe than others, and such are likely to be inferior in quality. The Iceing Rind (Ice Cream called by some), is by far the best flavored melon I know, and the most profitable to grow. It is also the easiest to pick or tell when ripe.

In picking, observe the following rules: The rind of melons generally becomes hard, and the pulp brittle when ripe. The part in contact with the ground will be changed from a white to a yellow, and upon close examination numerous small pimples, somewhat like the measles, will be noticed on the surface, particularly on the outer edge. With these signs, if the melon be gently pressed, and it cracks inside, it may be regarded as ripe. The top side of a melon when ripe is of a dull, lifeless brown color. In "pulling" the melon, cut the stem with a knife, leaving at least an inch of the stem to the melon, and they keep better.— *Farm and Fireside.*

FRUIT GROWING IN ALGOMA.



R. A. McD. ALLAN has been inquiring into the adaptability of Algoma for the cultivation of fruits, and it would appear, from letters which he places in our hands, that many of the best varieties of apples and pears will succeed in that section, a place generally supposed to be entirely unfit for fruit growing. Mr. W. Harris, of Bay Mills, writes, "Ten years ago, I commenced to plant apple trees in Algoma, having moved from the county of Huron, where I had an orchard of the ordinary varieties that succeed in Central Ontario. I first planted fifty trees of those kinds. The next winter being very severe, they were all cut down to the ground. I then planted Duchess, Wealthy, Tetofsky, Haas and Mann; all of these varieties are doing well and have begun to bear fruit. I have now 150 trees in my orchard, composed chiefly of the varieties last mentioned, with the addition of the Yellow Transparent and other hardy trees, such as St. Lawrence, Scott's Winter, McIntosh Red and Ben Davis. I find that almost all the new Russian kinds will grow and do well in Algoma. I have also the Lombard and some other varieties of plums in bearing. Some hardy cherries are beginning to bear fruit. So far as I can see I shall soon have a valuable orchard.

What is needed in Algoma are hardy trees that will stand the long, hard freezing weather. Our summers are very favorable for apples, pears, plums, cherries, and some kinds of grapes might succeed. Small fruits do remarkably well. We have plenty of good, cheap land for thousands of settlers who are willing to do the clearing up, and, thereby, soon secure for themselves good homes. I have been living here twelve years and have cleared up a large farm and have proved that we can grow all kinds of fruit, as well as all kinds of grains, grass and vegetables."

Mr. D. Dunn, of Jocelyn, writes, "I have had very little experience in fruit growing, but my father has had a great deal. Twelve years ago my father brought over a hundred fruit trees from North Oxford to this island. All the tender sorts succumbed year by year to the cold climate, but the hardier kind have survived. Five or six years ago father was induced to begin experimenting with Russian grafts, and so pleased was he with the results, that he began to go quite heavily into the business. At the time of his death, he had over one thousand trees in the nursery, besides having over five hundred planted out in the orchard. The fruit of these varieties is remarkably fine and free from blemishes.

Among the hardy apples growing in our orchard we may mention the Charlamoff, Duchess of Oldenburg, Alexander, Haas, McMahan, Pewaukee, Montreal Peach, Yellow Transparent, Canada Baldwin, Walbridge, Bordsorf, Winter and Switzer. Of crabs, Shield's, Whitney, Montreal Waxen, Hys-

lop, Transcendent and Martha. Of pears, Boussock and Flemish Beauty. These varieties are twelve years planted. Of plums, Duane's Purple, Imperial Gage and Lombard; all twelve years planted. Of cherries, the common Canadian and some Russian kinds. Of red currants, Victoria, Versailles and Fay's."

Mr. A. Eddy, of Marksville, St. Joseph's Island, writes, "I think we ought to encourage fruit growing here. I came here from the county of Oxford, when the country was new. I do not think Algoma will be able to compete with Oxford for fruit growing, but I do think that Algoma will be able to supply its own apples within the next ten years. My best experience has been with the Duchess and a few varieties of crabs. I have now over one hundred trees which have been bearing for four years past. If I were planting again, I would plant more Wealthys. They are very hardy and are better than the Duchess."

TRANSPLANTING ONIONS.

In order to test the claims made for this method of growing onions, seeds of seven varieties were sown in a hot-bed April 10, and on the 16th of May they were transplanted to the field, and seeds of the same sort were on the same day sown in a parallel plat for comparison.

The transplanted onions were placed in rows fifteen inches apart and at intervals of four inches in the rows. The soil was a rich sandy loam and received the same care as was given the adjoining tract containing a field crop of onions.

The result in every case was in favor of the transplanted onions; the results from the three best kinds being as follows:

VARIETY.	Bushels per acre.	
	Transplanted.	Not transplanted.
Prizetaker.....	548	216
Southport.....	296	172
Rocca.....	556	110

The four weeks following the sowing of the seed in the open ground were quite dry, and the plants made a slow start. The transplanted ones received a copious watering when set out and did not suffer. The results were certainly in favor of transplanting but although it will probably pay for home and for truckers, it is doubtful if it would for large crops.—*Bulletin 79, Mich. Agr'l. Coll.*

The Garden and Lawn.

WEEPING TREES.



PLANTING these with a niggardly hand is, after all, not what is wanted, that is, if we are to derive pleasure from their presence in combination with the general run of our park and woodland trees. Single specimens dotted about here and there, and planted ever so wisely, are by no means to be compared with those clumped or massed in threes or fives, and at irregular distances apart, a fact the truth of which dawned forcibly upon me when visiting a well-managed and well-planted estate in the south of England.

Generally, as seen, weeping trees, like those of upright, habit are planted singly, perhaps in appropriate enough situations, but in such a way as to give one the idea that the planter had this rigidly before him, that such a class of trees spoils the landscape, and requires to be very carefully dealt with and in unusually small numbers. Such ideas may have done well enough for the old school of planters, but now-a-days hard and fast lines are not tolerated, and the departures from the strict routine of century-old ideas are nowhere more prevalent than in matters connected with trees and shrubs, their planting and after management.

A group of the Weeping Willow, some eight or nine in number, planted in no cramped or confined spaces, by the side of a fair sized lake has a most pleasing and effective appearance, but they are planted far from any other trees and shrubs, and on the gently sloping grassy banks thus, I fancy, adding much to their charm and beauty. No single specimen of the same tree could have produced such an effect as this clump, which covered nearly a quarter of an acre, but yet did not look out of place, the size and outline of the grounds being boldly laid out and quite in keeping with the broad sheet of water. Within sight of these, but several hundred yards away, a mass of the red-stemmed Dogwood quite enlivened the end of the lake; while in a recess, where the margin of a plantation came nearly down to the water-side, were three fine old trees of the Hemlock Spruce, or rather what to me appeared to be a weeping form of this Canadian Conifer. These with their rich background of Scotch Firs had a truly imposing appearance, the long, cord-like twigs hanging gracefully down for more than a couple of feet. Even at their advanced size and age the trees were by no means cramped for room, although when viewed from the opposite side of the lake the trio seemed as if but one gigantic specimen. For small places such a method of planting would never do; although, even then, it is wise policy to have only a few well laid out clumps in preference to single specimens dotted about here and there, and which latter are hard to place so that they may look well and be in keeping with their surroundings.

To those with plenty of ground space I would say plant no. or very few, single specimens, but instead, clumps or masses, particularly of weeping, fastigiate, or brightly-tinted trees and shrubs, and these, if well arranged, will afford an infinitely greater amount of pleasure than single subjects, be they dotted about ever so thickly, and planted with more than a usual amount of care and attention.

To sum up concisely, I may say that, generally speaking, weeping, upright, or other peculiar-habited trees and shrubs look better in clumps of irregular size if the grounds are boldly laid out, while at the same time a few species, such as the Weeping Ash, which ramify extensively, can with all appropriateness be used as single specimens.—A. D. W., in *The Garden*.

GRASS UNDER TREES.—It is often very difficult to get grass to grow under the shade of trees, and yet in places where something green to cover the ground is very desirable, a number of plants have been named as being adapted for furnishing these green surfaces. The common Periwinkle is one of the best known; another excellent thing is some of the species of *Hypericum*; two European species, *H. calycinum* and *H. androsæfolium*, thrive particularly in these comparatively dry and shady places. Another very fine thing is the Japanese Honeysuckle. It keeps very low, and perhaps is a better substitute for grass than many of the others named. There are two forms which can be employed for this purpose; one, frequently known in catalogues as *Halliana*, and the other form as the *L. brachybotria*; this is more generally known as the Japanese evergreen honeysuckle, although the varieties are all more or less evergreen. This particular one is more fond of trailing than the others.
—*Meehans' Monthly*.

THE FIRST PRIZE STRAWBERRIES.—If you want the finest and nicest strawberries next year do not allow your plants to set runners. Keep them cut off, and where every runner is cut off there will come up a fruit spur next spring that will bear many berries. The quickest and easiest way to keep back the runners is to go through the patch every week with a good sharp hoe. Do not cut off merely the runners, but take all the weeds as well. It is necessary to keep the ground cleared of weeds so that the plants may receive all the strength of the soil. Running the cultivator through the patch every ten days or two weeks will help in time of drought and make the hoeing much less work. If you want fine berries and are willing to give the plants a little extra care, the hill system is by far the best. Where the matted row system is followed the weeds are a little easier kept down, but the berries will not be as large or handsome. In starting the matted rows the runners are allowed to take root between the hills.—*Farm and Home*.

VINES FOR PORCHES.



It is a question with many what vines to choose for climbers about porches. It does not seem desirable to cover a porch entirely with any vine, but at certain portions, when one wishes to exclude an unsightly view, or is desirous of shade, a free-growing climbing plant proves effectual.

The climbing bitter-sweet (*Celastrus scandens*) with its glossy leaves and scarlet berries, false buckwheat (*Polygonum scandens*), clematis (*C. Virginiana*) with its copious clusters of white blossoms, trumpet flower (*Bignonia*—named after Abbe Bignon, librarian to Louis XIV), the scarlet blossoms of which are familiar to every one, are among the numerous wild plants that have been adapted to our use in this direction. They are decorative and all of them rapid growers, but they lose their foliage earlier than our less hardy vines.

The moon flower (*Ipomœa grandiflora*) in our northern climate does not mature early enough to give us the wealth of blossoms we are led to expect from it, but it retains its large, glossy leaves until late in October, is clean, and free from insects, and makes a good screen from the sun. *Cobœa scandens*, with its curious twining leaves, is a beautiful climber and keeps its foliage until frost comes, which, for porches, is a strong recommendation.

Madeira vine, Allegheny vine (*Adlumia*), Canary Bird Flower (*Tropæolum peregrinum*), are pretty growers, but to be effective for shade must be planted thickly. Our Virginia creeper is good and will grow everywhere; it must be kept free from aphid by infusions of tobacco. The honeysuckles are desirable, and fragrant climbers. The foliage is a beautiful green and by combining the varieties one can have constant bloom from June until November. They grow rapidly and are easily trained upon wire trellises. They possess every requisite of a climbing plant.



FIG. 9. COBŒA SCANDENS.

WM. SAUNDERS, Washington, in *California Fruit Grower*.

RAVAGES OF RABBITS.—A writer in the *Revue Horticole* gives the following remedy for preventing the depredations of rabbits in his garden: He mixes three pounds of blue vitriol with four pounds of fresh slaked lime and adds the mixture to 18 gallons of water. The blue vitriol is first dissolved in two or three gallons of water, and then both are thrown into a barrel and the water added to make 18 gallons. The mixture is applied with a whitewash brush, in dry weather only to the trunks of the trees from the ground to a height of a foot or two.

A HUGE LILY.



SEND you photograph of a most striking exhibit in flowers made at our annual county exhibition. It is a single spike of *Lilium Auratum*, with 120 fully developed blooms, and expanded as far as possible. The photo was taken as the lily grew in the garden. The stem on the left hand is a normal stem, with, perhaps, eight or ten blooms. The stem of the thickly flowered lily is concealed by the leaves. It started in the spring, flat, two or three inches broad, as one often

FIG. 10 — *LILIUM AURATUM*.

sees in an asparagus plot. There were two or three flat stems and four or five normal in the same clump of *L. Auratum*. One of the flat stems began to wilt in August, I think, and was cut off and given to me. I sent it to Prof. Saunders, of Ottawa. The other grew to perfection and expanded into full bloom just in time for our exhibition, October 8th-10th. At the close, it was shipped to the Massachusetts Horticultural Society, and arrived in good order. The Secretary reported to me that they had a similar spike of *L. Auratum* in 1878, grown at Salem, in Massachusetts, with 170 blooms, of which photos were taken. On each side of the flat stem, for about eighteen inches from the top, buds broke and developed to perfection.

You will notice that we took the liberty of copying the rating given on varieties by the Ontario Fruit Growers' Association. This is a most useful table. A column, showing the season of use, would be valuable as a guide to customers, say Red Astrachan, July to September: Northern Spy, January to June, or whatever the month for each may be.

Mr. P. D. Kinney advises me this morning that he has a carload of Canadian apples, shipped by A. M. Smith, of St. Catharines, just arrived *via* Boston in eleven days. The assortment is excellent and a large part sold to arrive, and there will be no trouble in selling the balance at a good profit.

Yarmouth, N.S., November 11th, 1891.

CHAS. E. BROWN.

FINE EVERGREENS.—The writer was asking himself a few days ago, as he sat under the Yellow-wood of the Rural Grounds, and admired first one, then another of the many different kinds of evergreens in view, which he would choose in case he was confined to one or two. We thought it over very carefully, and chose, first, the common Hemlock Spruce, and, second, the White Pine, and this, too, after cultivating for 13 years the rarest conifers known. Few know of the surpassing beauty of the White Pine when, during youth, it has been disbudded, or cut back in a way to induce an ample furniture of foliage from the ground to the top.

FIELD MICE.—Here are two suggestions regarding field mice, from *Farm and Home*:—

Field mice will work very badly in orchards when there is a great depth of snow. The snow should be trodden down about the trees the first time it is damp enough to do so, especially in runs where it drifts, as trees six or eight inches in diameter at the collar are often completely girdled in such situations.

To protect trees against mice, rabbits or sheep, paint the trunk above their reach with a cold wash made by mixing one peck of unslacked lime with 4 lbs. of sulphur slacked in 8 qts. of boiling water, and while still hot add half a gallon of crude carbolic acid and the same of gas tar, stirring well and mixing thoroughly. A flat brush is the best thing to put it on with.

MAKING GRAVEL WALKS.



HERE new walks are to be made, it is important that they should be made with due regard to their surroundings. If they are to be intended for vehicles as well as walking on, as is generally the case in the main walks in large gardens and pleasaunces, a greater depth of soil than would be necessary in the case of walks for pedestrians, should be dug out, to admit of a greater thickness of hard material being laid in the bottom for drainage, and to sustain the harder traffic. The first point to determine when making a walk, after the line of direction has been decided upon, is the width that it shall be made. Main walks should be from ten to eighteen feet in width, according to the extent of the grounds, the others being from five to seven feet wide. This done, due regard should be paid to the level of the ground on either side of the walk, as well as the direction in which it is proposed to take the surface-water. A depth of from nine to eighteen inches, will, in a general way, be ample for walks of the dimensions mentioned above, but in cases where the top-soil is shallow, and resting on a substratum of chalk, gravel or stone, all that is necessary is to remove the top-soil, and with which the ground on either side the walk can be made level, together with the filling up of any depressions that may happen to be close by. Whatever edging be used, turf, box, flints, heather, etc., it should be laid before the bottoming of the walk is proceeded with. The bottom of the walks should be deeper at the sides than in the middle, that is, it should be slightly arched or convex, so as to convey the surface-water to the sides. If the substratum be chalk, it should be well pounded all over, allowing sufficient fall (longitudinally) to the points towards which it is decided to drain the walks, providing means at each outlet to convey thither any water that might lodge on the opposite side of the walk—that is, when it is not convenient to have outlets connected with drains or “catch-pits” on both sides of the walk. In the case of walks being made on soils resting on a bed of chalk, gravel or stone, as mentioned above, a smaller quantity of hard materials becomes necessary. A broad walk, having an excavated depth of eighteen inches, should have at least one foot of coarse materials in the bottom, over this three inches of coarse gravel, followed by a like depth of fine red gravel, if obtainable. This should be raked level and smooth, and rolled as soon as dry enough—first, with a light roller, and then with a heavy one, repeating the operation four or five days in succession, or until a level, firm surface is produced. Walks of from nine to twelve inches deep should be given a layer of proportionate thickness of the several materials recommended for the walk described above. Bold, yet graceful curves should be observed in making winding walks. Where box is used as an edging, taste and judgment, only to be acquired by practice, are necessary to do the work with precision and neatness. H. W. WARD, *Longford Castle, Salisbury.*

❖ The Kitchen Garden. ❖

MANURE HOT BEDS.



THE construction and management of hot-beds is an exceedingly simple matter, and yet it requires careful attention to keep plants growing in a healthy condition. Manure beds are most commonly used, horse manure being preferable to any other ready available substance. Fresh manure recently removed from the stable is the best, but if collected in too small quantities, it should be frequently spread through the winter in order to keep it from heating and spoiling before spring. If a good proportion of fine straw or forest leaves are used in the bedding it improves the manure greatly for hot-bed purposes.

When ready to begin operations the manure should be forked over, shaken out finely and *thrown into a high conical heap to heat*; if anyways dry it should be watered until well dampened throughout the heap. Leave it standing in this heap about a week and it will surely heat and begin smoking like a small volcano.

There are two methods of forming the bed, some digging a pit and sinking the manure in it, and others simply building the manure up into a square bed and setting the frame on it: the first named method requires the most labor, the second the most manure, so we will let labor *vs.* manure decide which you shall adopt.

FIG. 11, shows a perspective view of a bed constructed on the manure without a pit. If the manure is fine, and contains little or no long straw, it will be found necessary to put a plank frame around it to keep it in position. After levelling the manure there should be three or four narrow boards laid across it on which to rest the hot-bed frame, so that after the manure heats all will settle together, otherwise the weight of the frame and sash will force it down into the manure, and the centre of the bed will appear to raise and perhaps displace the plants.

Of course you should select a spot for the bed which is sheltered as much as possible on the north and west by some building or high board fence. The sash should slope gently towards the south or east, both in order to carry off the rain water readily and to catch the sun's rays and gain light and warmth.

The most common sashes are 3x6 feet. The frame should therefore be

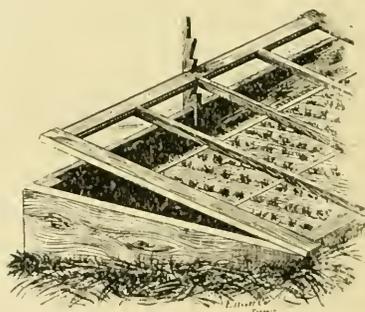


FIG. 11. — COLD FRAME.

made six feet wide and as long as necessary to accommodate the number of sashes to be used.

A vital point always to be observed in making a hot-bed is *to spread the manure down while hot*, it then continues to heat, but if spread down cold it will heat very slowly and unevenly or perhaps not at all. Early in spring, when considerable cold weather may yet be expected, it will be necessary to use about a common wagon box full of manure to each sash, but later in the season, when forming beds in which to transplant seedlings, one-half that quantity will suffice.

The soil to be used should be prepared in advance. It must be light, loose and rich. Good sods placed in a heap with alternate layers of cow manure and allowed to stand and decay for about one year, makes a fine compost for starting a hot-bed. In removing the soil from an old hot-bed, shovel out some of the fermented manure with it each year, this will keep it loose and in good mechanical condition. The poorest article I ever saw used in a hot-bed was

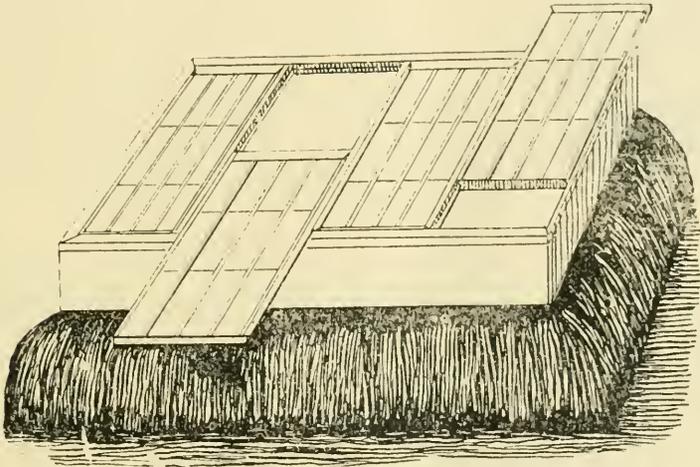


FIG. 12.—HOT-BED.

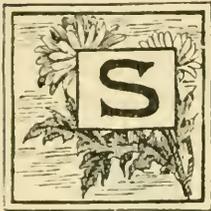
sand washed from the road, which it was thought would be rich and nice, but it packed down so hard that the whole bed was a failure.

Soil should be placed on the manure to the depth of from four to six inches, and the glasses adjusted properly. After the soil becomes warm, sow the seed in rows about four inches apart and scatter them quite thickly in the rows. Never sow broadcast, as the labor of keeping free from weeds is much greater. When the seedlings are about three inches high, they should be transplanted into rows, 3x6 inches, and as soon as these need more room, or are in danger of running up spindling, transplant again.

In transplanting tomato plants, the stem should be set down well into the soil, and will take root wherever covered. The object sought is plenty of

fibrous roots on a short stocky stem. The temperature of the beds must be closely watched, though it may vary considerable. The mercury may run from 50 to 80, though the mean, 65, should be as closely kept as possible. This for tomatoes, peppers, etc. Cabbage and cauliflower plants require much less heat and should never be placed in the same bed with tomatoes. In fact very little or no bottom heat is required to produce good early cabbage plants. Fit a frame as for a hot-bed except to omit the manure for the bottom heat, cover it with sash and sow the seed in February, or early in March, and better plants will usually result than if bottom heat is used (see Fig. 12).—*Tillinghast's Manual.*

MARKET GARDENING AS A BUSINESS.



SOIL is of first importance. Choose land, when it can be done, that is level and well drained by having a gravelly or sandy subsoil, not less than ten inches in depth of good soil. Again, get as near to your market as possible, and see that the roads leading thereto are good. This is particularly important if your market is a large city like New York, Boston or Philadelphia, but less important for a local market.

The business of market gardening, though healthful and fairly profitable, is exceedingly laborious, from which any one not accustomed to manual labor would quickly shrink. The labor is not what might be called heavy, but the hours are long—not less than an average of ten hours a day for both summer and winter. No one should engage in it after passing middle life, nor men of feeble constitution, for it is emphatically a business in which one has to rough it; and if it is to be prosecuted successfully the owner must put his own shoulder to the wheel at least as strongly as his roughest employee.

The capital required for beginning market gardening in the vicinity of any large city should not be less than \$300 per acre for anything less than ten acres. The first year rarely pays more than current expenses and the capital of \$300 per acre is all absorbed in horses, wagons, implements, sashes, manure, seeds, etc. If the capital be insufficient to secure these properly the chances of success are correspondingly diminished. Above all, be careful not to attempt the cultivation of more land than your capital and experience can properly manage. More men are stranded both on the farm and garden, in attempting to cultivate too much, perhaps, than from any other cause.

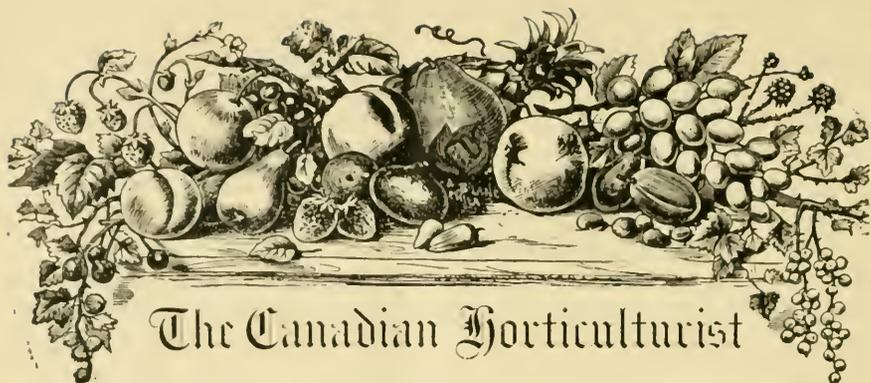
It has been the practice in the past to use hot-bed ashes almost exclusively for the purpose of forcing vegetables, or forwarding plants for use in the open ground. But of late years greenhouses are being largely used, both for the purpose of *forcing* lettuce, radishes, beets and cucumbers, as also for *growing* plants

of early cabbage, cauliflower, lettuce, celery and tomatoes, and in either case, we believe, that in well-constructed greenhouses not only is work better done, but that the saving in labor in three years will more than offset the greater cost of the greenhouses.

Lands, in some gardening localities, have become actually surfeited with manure, and for this reason vegetables, such as cabbage, lettuce, and celery, do not now average as good as those grown where land is cheap enough to allow one-third to be put down annually with some grass and clover crop. I believe that, in a garden of fifteen acres, if one-third is laid down to grass each year, and the balance kept under the plow, the gross receipts will be greater, and the profits more than if the whole fifteen acres were under tillage: for less labor will be required, and manure tells better on sod land than on land under tillage.

I can tell you nothing new on the subject of manure, except that the use of dried peat moss, now being used in the cities for bedding, is likely to be of great value to the market gardener, if it can only be had in sufficient quantities. We have had it in use in our own stables for about a year and find it not only more economical than straw for bedding, but its absorbing qualities make it of great value for fertilizing purposes. We can buy ordinary straw manure in our vicinity for \$1 per team load; but we are buying all we can get from stables where the moss is used at \$2 per ton, but is yet quite scarce. PETER HENDERSON, at *Farmers' Institute, Jamaica, N. Y.*

MANURE FOR ONIONS.—For twenty years an onion specialist in Fairview, Pa., has raised his onions upon an acre of ground adjoining his home: he placed but little faith in commercial fertilizers, for the one year previous to this one, that he used proved disastrous to his crop, and seemed to fairly burn the onions to death; but that year was an excessively wet season and the substance was literally washed out of the ground. But last spring, when he plowed his land again for onions, he made up his mind to give the fertilizers one more trial, as the soil was becoming impoverished by continual cropping. He accordingly procured four hundred pounds of phosphate and spread it over the ground before sowing his seed, and the result was an enormous crop of onions, equal in quantity and quality to twenty years ago. Another man in an adjoining town, plowed up a clover field and sowed it to onion sets, for his grain and clover always lodged there and he would lose a good share of them, being near a building and under a high state of cultivation. The crop was harvested lately, and yielded at the rate of 450 bushels of sets to the acre. This shows beginners that old ground requires phosphate, and new ground clover sod.



The Canadian Horticulturist

SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

NOTES AND COMMENTS.

NOXIOUS WEEDS.—Among the subjects discussed at the wide-awake farmers' meeting of Wisconsin, is that of noxious weeds, and considering the rapidity with which they are gaining ground on our farms and orchards and gardens of Ontario, it appears to us that we ought to make that a more common subject for discussion at farmers' meetings throughout Ontario; not, perhaps, in mere general terms, but one by one they should each come under discussion, until every farmer is up in arms against the large army of noxious weeds which threaten to drive him from his farm.

The common burdock, *Lappa Officinalis*, is one of our worst weeds, and one which pathmasters, as well as farmers, too often allow to grow unmolested in waste corners. No weed is more troublesome in the orchard, and none harder to eradicate, especially where the ground is left any time in grass. We are inclined to commend the practice of Mr. Cole, of Wisconsin, who says that in his experience the best method of eradicating them is by

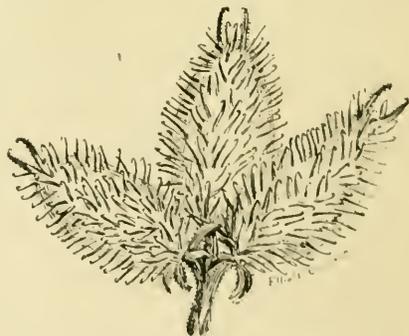


FIG. 13.—COMMON COCKLEBUR.

cutting them off about two or three inches below the surface of the ground during the first year of their growth. We believe that this is better than the practice that we have been following, namely, of cutting them the second year, as late in the season as possible, just before the seeds were mature. We hoped that, in this

way, the plant would be unable to throw out branches from beneath, in time to mature their seeds, but our experience is, that unless we watch sharply the second growth of branches from below will succeed in maturing their seeds very late in the fall, especially if the weather is favorable.

Another vile weed is the Cocklebur, which is gaining ground upon us of late, and which, like most others, secures a strong foothold before we are aware of its bad habits (Fig. 13) In Illinois, according to Prof. Goff, of Wisconsin, the farmers consider this one of their worst weeds. We have two varieties in Ontario, one, the Common Cocklebur, with rough stem, not spiny, and the other, the Spiny Cocklebur, of which the stem is armed with slender spines at the bases of the leaves. The latter is a native of South America. We give a drawing of the burs of this weed, so that our readers may the more easily identify it and be more guarded against it. Among the other evil weeds may be mentioned the Sow Thistle, the Wild Mustard, the Quack Grass, the Canada Thistle, the Corn Cockle, Beggar Ticks, and Toad Flax, and even the pretty Oxeye daisy (Fig. 14). Fields of this latter may be seen west of Toronto, along the line of the Grand Trunk, covered with this pretty, but troublesome, weed, and anyone who has noticed how completely the pastures there are overrun with it, will at once decide that, though pretty enough to be transplanted to the flower garden, it is entirely out of place in our fields, and must, therefore, be treated as a dangerous enemy to farmers and horticulturists who aspire to have their orchards and gardens present a creditable appearance, when left for a time seeded down to grass.



FIG. 14.—OXEYE DAISY.

THE ANNUAL REPORT for 1881 will be the most valuable one ever issued. In it are found the reports of the meetings of 1890 and 1891, making it double the usual size. Formerly the winter meeting was held in February, just after the issue of our report, but now that this meeting is held in December, the report of it may be at once made public without waiting until the matter is a year old. This report will contain catalogues of apples, pears and grapes, as prepared by committees on these fruits appointed by our Association. There are several illustrations given, beginning with a fine frontispiece of Mr. A. H. Pettit, the new President. The report will be sent out as soon as it is possible to get it through the hands of the printer.

THE BRITISH APPLE MARKET.—It is a remarkable thing that the prime Canadian apples exported to British market should not return the grower more money than they do, especially in a season like the one just passed. The average returns of those who have shipped to the old country has been from \$1.50 to \$1.75 per barrel. Some, it is true, have done a little better, but these are about the average returns for fruit of the most excellent quality, the writer judging not only from his own experience, but from the experience of others who have exported. At the same time that his apples sold in the old country markets so as to return the net prices quoted above, his apples of the same quality and put up in the same style were sold retail to private parties in the old country at \$4 per barrel, f. o. b. at Grimsby. It seems strange that there should be so large a difference between the wholesale and retail prices of apples in Britain.

The same thing is treated of in an article in the January number of the *Garden and Forest*, by a writer in London, Eng., who says that he priced Canadian apples in Covent Garden and found Gravensteins, Baldwins and Ribstons quoted at 20 and 30 per barrel. Surely if some means could be devised by which we could get into a nearer relationship with the consumers in the old country, our business in exporting Canadian apples would be a greater success.

PEACH YELLOWS INSPECTOR.—At a recent meeting of the Lincoln County Farmers' Institute, this subject was introduced by Capt. Shepherd of Niagara, who showed the futility of the present Act for destroying diseased peach trees. The inspector, it appears, is allowed but a limited time in which to do his work, and cannot act unless a complaint is made, and, even then, he fears making enemies by cutting down his neighbors' trees. Further, he is subjected to the necessity of proving each case of yellows. If a man is qualified to act at all, his judgment ought to be final, and he should be at liberty to inspect orchards at any time during the summer, and receive due compensation for the work.

A resolution was passed at the meeting above referred to, approving of the plan formulated by the Canadian Institute, Toronto, which looked for an appointment, by the Legislature, of a general inspector for the whole province, to whom local inspectors might report cases of refusal to destroy the trees affected with black knot or the yellows, and on whom will rest the duty of inflicting the penalty of the law upon such offenders.

SULPHURING FRUIT.—Dr. J. W. Smith, of Charles City, Iowa, writes in the transactions of the American Public Health Association, very decidedly opposing the use of sulphur for bleaching dried or evaporated fruit. The use of sulphur, it is true, gives the evaporated fruit a light color; this, at first, attracted the attention of consumers and commercial men, and, consequently, raised the

price of the article so treated. But the fact is now becoming generally known that sulphured fruit loses much of its flavor, and is, therefore, inferior in quality.

The doctor shows that while sulphuric acid is a preservative and disinfectant, still, its use with food is objectionable. It has further been noticed by retail grocers that the public does not use dried fruit as freely of late years as it did before the days of bleaching with sulphur. In the near future the probability is that fruit, which has been evaporated without the use of sulphur, will be more appreciated and more in demand than that which is bleached.

BEE MEN AND FRUIT GROWERS.—We are informed that our friends, the aparists, are alarmed at the wide-spread practice of spraying fruit trees and are seeking legislation to prevent it, on the ground that it is the means of destroying many bees. Such extreme measures would bring fruit growers into contact with them, and we would be inclined to ask for legislation against the keeping of bees, on the ground that these insects injure our grapes and carry the yellows from tree to tree. It is stated in *Meehans' Monthly*, that in a small garden in the suburbs of Philadelphia, where the owner has a dozen or so of grape vines, the whole crop is annually destroyed by neighboring bees.

Bee men tell us that a hole must be first made by birds or wasps, or else by cracking, before the bees will harm the fruit; but even granting this, the small holes and cracks referred to would not interfere with the ripening of the grape, and would only injure its value to a limited extent, were it not for the work of the bees. The only basis of agreement between us will be that we do not spray our trees when in blossom, and to this, no doubt, all fruit growers will consent.

TREE WASH.—The recipe for tree wash given on page 369 for destroying bark lice, keeping out borers, etc., probably contains a printer's error. The usual amount of carbolic acid to two gallons of water is one pint; and an excellent wash may be made as follows: One pint crude carbolic acid, one quart soft soap, and two gallons hot water. Mix thoroughly. Apply with old broom.

THE WINDOW GARDEN.—Be *sure* that every plant is free from scale aphid, or other insects, before placing in window, and if any plant becomes infected afterwards, remove it from the window until once more clean, as one lousy plant will infect a windowful. Shower the plants often to keep down the red spider, and also to keep the pores of the leaves open. The leaves of a plant are its lungs, and should be kept clean. See that every pot has an inch of charcoal or broken crocks in the bottom for drainage. Water only when the soil is really dry, and then water thoroughly. Add a fifth or sixth part of *sifted* manure, or a small quantity of the fertilizer florists keep, to the potting soil, or else water growing and blooming plants once a fortnight with liquid manure diluted to the color of weak tea. A pot plant must have food to blossom long and well. Turn plants frequently, pick off all dead leaves, and you will be rewarded by an abundance of flowers.—*Good Housekeeping*.

❖ Question Drawer. ❖

A TEN-ACRE FRUIT GARDEN.

SIR,—We are preparing to plant a fruit garden of ten acres, and want the result of the latest experience as a guide as to what kinds of raspberries, blackberries and strawberries to plant. Could you give me a summary in the next number of the journal?

D. REESOR, *Toronto, Ont.*

So much depends upon circumstances that it is impossible from ones experience at Grimsby, to give advice that will serve as a perfect guide to one living near Toronto.

In the first place we approve of the proposed size. "Ten acres enough" is ten times more applicable to the fruit garden than to the farm. We say this after spending twenty years in trying to cultivate one hundred acres in fruit; and after finding out some of the difficulties of such a large undertaking, we would plant very few apple trees in such a lot, but pears, plums and grapes should have due attention, and might have one-half the space. The rest should be saved for small fruits.

These should be planted freely at first over the whole, and then removed when necessary, that is, as soon as they are in danger of interfering with the growth of the larger fruits.

Of small fruits, we would plant such varieties as would give a constant succession throughout the season. Strawberries, currants, gooseberries, raspberries and blackberries would fill up the time until grapes begin to ripen. Everything should be planted in long rows, for convenience of cultivation by horse power, and it would be all the better if it could be arranged for cultivation in two ways.

Of strawberries, we are pleased with the Wilson, Bubach, Williams and Haverland; of currants, Fay's Cherry, Victoria and Black Naples; of gooseberries, Triumph and Downing; of raspberries, Turner, Cuthbert and Shaffer; of blackberries, Agawam, Snyder and Taylor. Where the Kittatinny will succeed we prefer it to either, but it would be too tender near Toronto.

REPORTS WANTED FROM PLANTS DISTRIBUTED.

SIR,—We do not exactly understand the position that members are expected to take with respect to their premium plants. Do you wish an account of the success or failure of plants and trees which have been distributed?

A. J. COLLISS, *Listowel, Ont.*

It is certainly very important that all members of our Association receiving plants for testing, should report to the Secretary concerning their success or failure. It will be understood, however, that no really reliable result can be

obtained until after a lapse of series of years, and, therefore, it is not necessary for our readers to report to us concerning plants or trees that have been sent out within the last year or two. But we would be very glad to hear, at any time, reports of those plants which have been tested long enough to give some reliable results. Previous to the year 1881, the following varieties were sent out for testing: In 1875, Swazie Pomme Grise apple; 1876, Glass Seedling plum; 1877, Goodale pear; 1878, Burnet grape; 1879, Ontario apple; 1880, Saunder's New Hybrid raspberry. These have been tested in various parts of the country for nearly ten years, and reports concerning them will be of considerable value. We, therefore, ask from the readers of the journal, who have received these varieties, or have otherwise tested them, to send a report as early as possible, to the editor of this journal, in order that the results may be tabulated and made public at any early date.

✻ Open Letters. ✻

SIR,—We have a copy of your journal for October, and note the comment you have made on the Early Ohio grape. We notice that in copying our letter you have made an error which makes quite a different meaning to it. You say, "It is *nearly* as hardy as the Concord," while our letter read, "It is *fully* as hardy as the Concord." The facts of the case are, that during a hard winter, in which nearly all of the buds on a Concord vineyard were severely injured, the buds on an Early Ohio vineyard by its side were not injured in the least.

Yours truly,

C. S. CURTICE Co., *Portland, N. Y.*

A CORRECTION.

SIR,—In your article of last month, by mistake, the style of the Fonthill Nursery firm was made to read Wellington & Stone's Nursery. The style of the firm should be Morris, Stone & Wellington. The nursery is owned by Mr. Edward Morris, of Fonthill, and Mr. W. E. Wellington, of Toronto, Mr. Wellington attending to sale of stock and Mr. Morris giving his personal supervision to the growing of stock. Much of the success of the firm has been the result of the able and careful management of Mr. Morris, who is a thorough practical horticulturist and propagator of nursery stock.

W. E. WELLINGTON, *Toronto.*

THE CAROLINE RASPBERRY IN QUEBEC.

SIR.—I observed in "Notes and Comments" in your January number a reference to this from the Geneva Station, as being a raspberry of "superb flavor," while the opinion you gave was that it was of "exceedingly poor quality." Being the first to test it for adaptability for the Province of Quebec, I may say that it occupies the place amongst raspberries that the Wilson does amongst strawberries, except that it is too soft for a market berry. The Caroline originated at New Rochelle, N. Y., the home of the once famous Lawton Blackberry, and it was introduced by the Carpenters, a nursery firm of that place in 1878; they also originated the New Rochelle black raspberry, which was not successful up here. They claimed the Caroline to be a hybrid of Brinckle's Orange, but if so,

the offspring has not the fine properties of the parent. I have cultivated it for thirteen years and have in that time given it to friends interested in improved fruit for our province and it has everywhere proved exceedingly productive and hardy. In a number of seasons of early summer drouth it has been my sole dependence when some two other varieties have failed. Four years since, the late S. O. Caywood, of Marlboro, N. Y., sent me for testing, a variety he named the "Crystal," which has thus far proved very promising. In color it has a beautiful canary shade, a remarkable contrast to the dingy yellow of Caroline, being transparent, fairly large and firm, with much less tartness. All who have seen it here admire it. The death of its eminent originator has likely delayed its introduction.

January 16, 1892.

WM. MEAD PATTISON, *Clarenceville, Que.*

❖ Our Book Table. ❖

CATALOGUES.

GENERAL ANNUAL CATALOGUE OF GARDEN, FIELD AND FLOWER SEEDS, 1892, J. A. Simmers, Toronto.

GARDEN, FIELD AND FLOWER SEEDS, 1892, Faust, 64 and 66 North Front St., Philadelphia, Pa.

SEEDS AND BULBS, 1892, Wm. Elliot & Sons, Importers and Growers, 54 and 56 Dey St., New York, N. Y.

ILLUSTRATED AND DESCRIPTIVE CATALOGUE OF FRUIT AND ORNAMENTAL TREES, SHRUBS AND PLANTS, 1892, Morris, Stone & Wellington, Toronto, Ont.

FORTY-FIRST ANNUAL DESCRIPTIVE CATALOGUE, 1892, John A. Bruce, Hamilton, Ont.

FLORISTS' STOCK, Spring 1892, Webster Bros., Hamilton, Ont.

EVERYTHING IN SEEDS AND BULBS, 1892, Steel Bros., cor. Front and Jarvis Sts Toronto, Ont.

CIRCULAR OF THE VANDEMAN STRAWBERRY, L. J. Farmer, Pulaski, N. Y.



WILKINSON'S NURSERY

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No. 3.



THE MAIDEN'S BLUSH APPLE.



OF the long list of apples ripening in the autumn, there is, probably, not one which is so deserving of admiration, on the score of beauty, as the old and well-known Maiden's Blush, a very good representation of which we show our readers in this number. It would, indeed, be a fair maiden whose blush could equal it in coloring, and to say of any apple that it almost equals the Maiden's Blush for beauty is saying almost all that could be said for it under that head. This apple is a native of New Jersey, and was first described by Coxé. The season is mid-autumn, ripening from the 20th of August to the end of October. For table, cooking and market, it is valuable; although deficient in richness of flavor, a point in which the famous Gravenstein far surpasses it. The showy appearance, however, always gains for it the highest price in the British market. The writer has shipped it to Covent Garden, London, about the first of September and it has brought as high as \$6.00 per barrel, for extra choice stock.

In our experience with it, however, it has not proved to be a heavy bearer, nor is the tree a very large grower. Our committee on apples, in preparing the catalogue of fruits for the guidance of judges at fairs, has only given it a total of twenty-five points, out of a possible forty, as an autumn apple. Its rating is as follows: Dessert, 3, cooking, 7, home market, 7, foreign market, 8, out of a possible 10 under each head. Possibly, it might bear a point or two more for dessert, on the score of beauty.

STRAY HINTS ON GENERAL MATTERS.

EXPERIENCE ON A TEN ACRE FARM.



"TEN acre Farm " seems rather small to the ambitious minds of most farmers, but, when you utilize ten acres in an economical, judicious way, there is quite enough to occupy the time of the average working man, that is, if he works as well as *manages* his little domain. Some men do not work themselves, but manage only, depending on others to do the work for them. Such require more land from which to realize a fair margin of profit, yet, their risks are *greater* and the satisfaction *less* than if they listened to the old adage, that,

" He that by the plow would thrive,
Himself must either hold or drive."

There seems to be an exquisite pleasure connected with eating anything you have cultivated with your own hands : partly, because if you are in the habit of working, you are apt to have an appetite to relish what you eat, and, partly, because you carry out the divine principle of industry, which, if acted upon by mankind at large, would banish many of the "ills that flesh is heir to," and carry prosperity and comfort into many a household, where misery now prevails. Where intelligence and manual labor are combined, there is sure to be something good and profitable resulting from the combination.

The great study of the future must be the utilization of smaller areas of land to produce corresponding results. If ten acres can be tilled to show the same margin of profit as often results from fifty acres in the usual mode of cultivation, a step in advance is made by its possessor, and a grand achievement obtained for future generations to profit by.

It pays, then, to let ambition for large cultivation subside into a determination to make the most out of a smaller compass, and let wisdom and intelligence make up for what one may lack in acres. The more the appliances of science and good management are brought to bear in tilling the soil, the more interest and importance attaches to it. If we can make the tilling of the soil an interesting and profitable occupation, and keep the children of farmers from rushing into the towns and cities to seek more "interesting" callings, there will be a point gained worthy of much endeavor to bring it about. Surely, the quiet and purifying influences of country life are much to be desired to the feverish, jostling, scheming influences of city life, by every one who has a heart to appreciate the handiwork of an all-wise Creator. Some one has beautifully said, "God made the country, but man made the towns."

Now, as to our "hints." From experience on a ten acre farm, we find it *pays* to keep one horse and three good cows. The horse, of course, is an indispen-

sable servant, and, if one were to keep account of what it would cost to hire horse help every time one would need it, we would find our faithful friend would almost pay for himself in one year, beyond his keeping.

As to the cows, our three in the year just closed paid \$99, *clear of expenses*. That is, \$33 per cow, and this was for what butter and buttermilk was sold, not including what was used in a family of five persons, and what skim milk was supplied to two families that had no cow. We have regular customers in the city for our butter, at twenty cents per pound in the summer, and twenty-two cents in the winter. We feed the cows bran mash in the summer, besides the pasturing, and with bran and provender in the winter, with their feed of hay and straw. Salt them every morning, and stable them not too warm, and in the spring when turned out to open ground, they bound and play like deer. The horse gets his rations of hay and provender according to his work, with a handful each of salt and wood ashes in his feed twice or three times a week. This is all the condition powder he needs, and he thrives and is on hand to his work.

We keep about forty laying hens that yield *their* margin of profit as well. We do not believe in stimulating them to lay in the winter, and they begin to lay early in spring, and do duty faithfully all summer to late in the fall, as a rule.

About three acres in fruit and the same in vegetables, if handled rightly, will yield a fair margin of profit, and will keep two hands busy enough to keep down the weeds, prepare the market loads, and do the marketing. Of course, in the fruit-picking season extra help must be employed. We make strawberries a specialty, and do something in raspberries, currants, grapes, and have a cherry and apple prospect in the near future. Gooseberries have not paid with us.

The vegetable market is somewhat overstocked in Ottawa, except extra early productions, which pay well. The fruit market for home produce is *good*.

Taking everything into account, there is a fair margin for encouragement on a ten acre farm, within five miles of the city. But, economy in living must add its measure to the common interest. Extravagance in style, in high-toned table expenses, etc., are the canker-worms which eat out the prosperity of many a well-meaning man, but the hard-pan essentials of existence can be fully enjoyed with health and wholesome contentment, which are, in themselves, real luxuries.

Nepeau, Ont.

L. FOOTE.

POISON VINES.—Some careful experiments have been made by eminent pathologists on poison by the sumach, the result indicating an almost perfect identity in the result with the disease known as erysipelas; and it is suggested, therefore, that the same remedy may be used for Rhus poison as for the trouble in erysipelas. A lather of common potash soap, made strong, and applied with a shaving brush on the affected parts, is a well known and effectual remedy. Those liable to be poisoned by this plant, will do well to remember this.—*Meehans' Monthly*.

SPRAYING WHEN THE BLOOM HAS FALLEN.



JUST after the bloom has fallen is the right time to spray the trees, as that is the time the moth lays the eggs, when the fruit is forming. To spray trees while in full bloom is a waste of time and materials, and don't do the fruit grower *any good*, but kills bees by wholesale that work on the blossoms at the time. If every fruit grower in every locality was to spray his trees with poison while the trees were in full bloom, it would kill every hive of bees in Ontario, and what would be still worse, it would kill every family that used the honey after the bees were poisoned. While on my rounds through the province inspecting hives of bees, I heard the sad news in many places of bees being poisoned by the spraying of fruit trees while in full bloom. I brought this up at the Bee Convention held lately in London. I also moved, and Mr. Jacob Alpaugh seconded it, that Messrs. Allen Pringle, F. A. Gemmill, and E. D. Smith, a nurseryman at Winona, be a committee to wait on the Minister of Agriculture to get an Act passed fixing the proper time to spray trees, that is, after the blossoms have fallen. I knew Mr. Smith to be a just man, and for the sake of having the interest of the fruit growers looked after, as well as the bee keepers, I put him on the committee with Mr. Gemmill and Mr. Pringle, who are two of as just men as can be found in any country. I see by the HORTICULTURIST of February, that we have been reported as wanting to prevent the spraying of fruit trees altogether, which is a mistake. All we want is the proper time fixed for spraying, which is just after the bloom has fallen. If the fruit grower sprays when the bloom has just fallen, he will make a success of the spraying business, and won't kill any bees.

Mr. Charles Baker, a nurseryman at London, said that the trees should not be sprayed until after the bloom had fallen, and he voted for my motion to have the time fixed for such work. Every real fruit grower agrees with me on this point, that is, when the bloom has just fallen. In the February No. of the HORTICULTURIST, the Editor says that if we would ask to have the spraying done after the bloom had fallen, that every fruit grower would agree to that. Many thanks to the Editor for helping to fix things so very nicely, by hitting on the very way we want the Act passed, and then it will be in the interests of the fruit grower and bee keeper. I am well pleased with the HORTICULTURIST. It is a journal that every fruit grower should take.

Woodburn, Wentworth County, Ont.

Wm. McEvoy.

NOTE BY EDITOR.—Will we be transgressing if we spray *before* the bloom opens? We need to use a solution of copper, for apple scab very early, because it lives through the winter on the scales of the buds, and must be destroyed before it spreads in spring. We hope there will be no antagonism of interests between bee men and fruit growers, and probably there will not.

THREE POISONOUS PLANTS.



REPORTED cases of poisoning, from handling the foliage of certain plants, having come under the writer's notice, he has deemed it worth while to describe three plants that possess this property to a considerable degree.

Anacardiaceæ (Cashew Family).

This order embraces trees and shrubs, with a resinous, gummy, caustic or even milky juice. This juice is poisonous, but is of considerable economic value; sometimes being used as an indelible ink, and also as an ingredient in the preparation of varnish. Even the exhalations from some species are poisonous. Here we find *Rhus Aromatica*. Sweet Sumach is a small aromatic shrub found by the writer on the banks of the Niagara River near Lewiston. *Rhus Typhina*, the common sumach of our Canadian woods, sometimes called Staghorn sumach; but the plants we wish to notice particularly are:



FIG. 15.—RHUS VENENATA.

1. *Rhus Venenata* (Fig. 15), Poison sumach, Poison elder. Swamp dogwood, is one of the poisonous varieties referred to. The leaves are arranged in pairs along the leaf stem, from seven to thirteen leaflets, oval, entire pointed, each about three inches long and one-half inch wide; these soon change color in the fall and present foliage of a very attractive appearance; flowers small,

greenish, and in loose panicles. The fruit is in the form of small, nut-like structures, dry, smooth and shining, whitish in color and about the size of small peas. The drupes are well separate from each other and not crowded, as in the case of common sumach. This species grows from ten to fifteen feet high, and usually in low spots. Several are to be seen in the Dufferin Islands, Niagara Falls. One very good specimen can be seen at the south end, right-hand side, of the second bridge, as you go south. This labelled would be useful to visitors. Its convenient position and gorgeous foliage in autumn, I have no doubt, ere this has been a sorrow to wanton visitors who visit the Park from time to time. This species is very poisonous to many persons if they come in contact with it, or even get in its immediate vicinity.



FIG. 16.—RHUS RADICANS.

2 *Rhus Toxicodendron*, Poison oak, Poison ivy. This, a low variety, leaflets in clusters of three, broadly oval, pointed; two to five inches long, three-quarter inch wide; leaf stalk three inches. The plant seldom, if ever, exceeds three feet in height, and occurs most frequently about two feet high. It is exceedingly common along the banks of the Niagara River, in the vicinity of Victoria Park. Flowers, yellowish-green in panicles; fruit dry, smooth, shining, pale-brown berries. This is also a poisonous variety, but not to such an extent as the preceding. This plant is very common in many parts of Ontario. It is often seen along the railroads. Resembles (Fig. 16) a climbing form.

3. *Rhus Radicans* (Fig. 16), Climbing Poison ivy, much like the preceding,

but climbs by tendrils, ascending trees as high as forty to fifty feet, or climbing over fences; the stem is quite woody and sometimes attains a thickness of two inches. Some confound this with the Virginia creeper; but its leaf clusters have five leaflets, while this has only three, much wider and more oval in outline. Flowers, greenish, and fruit in dull white berries.

These three poisonous varieties can be seen in the Victoria Park. Some persons seem to be able to handle them without serious results, while others dare not touch them, nor even come near them.

Views differ regarding the way in which the poison from these plants is communicated. Some maintain that actual contact is necessary, others that it is given off from the leaves, during sunshine, when wetted by dew; some attribute it to the pollen, and some say that the plants give off a gaseous vapor.

Persons affected show redness about the eye-lids, ears and throat. These parts quickly show inflamed blotches, rising in blisters, the whole face becoming swollen so as to produce blindness, sometimes for days. The poison in some cases spreads over the arms and other parts of the body, and the patient suffers from fever and headache, and even becomes delirious. It is not an uncommon thing for persons once affected to experience attacks from year to year, though not being near any of the plants.

The application of a strong solution of bi-carbonate of soda (baking soda) to the pustules as soon as seen is highly recommended.

Bathing parts affected with sulphate of soda (glauber salts) is also well spoken of.

These three comparatively common plants should be known by everybody, and should be destroyed wherever they are likely to prove injurious. The accompanying cuts will enable the reader to readily identify them.

CHIEF SAMUELS, of the Horticultural Department of the World's Fair, has returned from a trip to Florida and Cuba, where he stimulated interest in the Chicago Exposition and secured the promise of many fine palms and other tropical plants, to be exhibited in his Department.

PLANTS FOR THE FLOWER GARDEN.—A happy mean may, perhaps, be found between the pretentiousness of an over-display of bedding plants and the total neglect of old-time favorites. A bed or two of rich color, with or without softening foils of foliage or shaded tints, is a great adornment even in a small yard, but the ground should be well flanked or whiskered with choice shrubs in cleanly kept beds, with the standard flowers set among or fronting them, or in separate borders, as suits their individual requirements. Such an arrangement gives, even on small space, ever-varying subjects of interest for hour after hour.

—*Vick's Magazine.*

THE BLENHHEIM ORANGE APPLE.



OW easy a matter it is to provoke the query, "Who shall decide when the doctors differ?" This interrogatory adage suggested itself to my mind when looking through the *HORTICULTURIST* of February, and finding therein an extract, taken from an English magazine, in praise of the Blenheim Pippin apple. Had the extract been taken and presented to the readers of the *HORTICULTURIST* for just what it was worth from an English standpoint, it would not have attracted any particular attention, but when it was copied without note or comment, we are naturally led to the conclusion that it was copied approvingly: that everything said was endorsed: and that the Blenheim Pippin apple was recommended to the Canadian fruit grower without qualification.

If I understand the purpose of the Ontario Fruit Growers' Association aright, it is to encourage, as far as practicable, such varieties of apples in the several districts most likely to prove profitable to the grower. It was with that sole object in view that the Committee on Apples labored for two years in the preparation of a report for the guidance of growers in the several districts of the province, which report was presented to the public but a few months ago. That report does not give an unqualified endorsement of the Blenheim Pippin as an apple for profit in this country.

I agree with the English authority in all that is said of the Blenheim Pippin, so far as its individual qualities are concerned. It is a very desirable apple to have in one's own cellar, and upon one's own table, but when we keep in view profit, as the main object in growing apples, some of the most desirable, or at least the most pleasing, for their individual qualities, have to be passed by.

One year ago I met with the Blenheim Pippin—some very fine specimens of it—in the County of Middlesex. The farmers brought the apple to their Institute meetings to inquire concerning its name and rating. The objection to it was invariably that it was too shy a bearer for profit. This year I met with it again in the southern counties, along the Michigan Central Railway, and southward from Simcoe. In all these localities it vied with the King as a pleasing and attractive apple; but I met with one man only who was satisfied with its productiveness. I carried a sample of the Blenheim among my other specimens and at all the meetings I pointed out to the farmers its merits and defects, emphasizing especially the high favor accorded it in the British market. If the farmers, knowing its high qualities, are satisfied with the prospect of one good crop in every six or eight years—which is as much as can be expected from the King—they plant knowing what they are to reap, and will not be disappointed. One man in South Norfolk had intended placing an order for twenty-five

Blenheim Pippin trees in the spring, together with a like number of other highly recommended varieties ; but when he heard my remarks concerning the Blenheim, he felt discouraged. Since the February number of the HORTICULTURIST has reached him, however, containing the unqualified English endorsement, he is in doubt as to the wisdom of his change from his first plan and has written me about it.

I repeat, that in matters of this kind, we cannot be too careful, and those of us at least who go out among the farmers to speak upon horticultural topics, should be in accord touching the methods of cultivation and the merits and comparative values of the various fruits receiving attention. Still more, should we be in accord with the teachings of the HORTICULTURIST. Otherwise we lessen our influence as an Association, and in a measure stultify our efforts in the grand work in which we are engaged. I say grand work, because I believe horticulture to be the most ancient and the likeliest employment, for which man was adapted in his creation, of all the industries known. I am also persuaded that it is to become one of the most profitable industries of this fair province.

T. H. RACE.

NOTE OF EDITOR.—We would be pleased to receive for publication post cards from every county in Ontario, giving the experience of growers of the Blenheim Orange. We value the criticism of our friend, Mr. Race : but it is a question whether, in the near future, productiveness will count as largely, in estimating the value of an apple for planting in the commercial orchard, as in the past. Beauty of appearance and excellence of quality, bring the high prices in the market, and must be considered more and more by planters. We do not wish, however, to be understood as commending the Blenheim to our readers in general. It succeeds well at Grimsby, our readers must say where else.

THE Horticultural Department of the Chicago Exposition is planning to have a magnificent rose garden in which will be fully 50,000 plants, besides large groups in special areas. The garden will be of classic design, with temples, arbors, archways and trellises.

FOOD OF A LIFE-TIME.—A curious calculation of the amount of food consumed in a life-time of seventy years, has recently been made by M. Soyer, a French savant, now *chef* of the Reform Club of London. Among other things he says that the average epicure of three-score and ten will have consumed 30 oxen, 200 sheep, 100 calves, 200 lambs, 50 pigs, 2,200 fowls, 1,000 fish, 30,000 oysters, 5,475 pounds of vegetables, 243 pounds of butter, 24,600 eggs and four tons of bread, besides several hogsheads of wine, tea, coffee, etc. This enormous amount of food will weigh but little short of 40 tons.

THE CANADIAN HORTICULTURIST.
AMATEUR GREENHOUSE.

ARRANGEMENTS FOR HEATING IT AT A SMALL EXPENDITURE OF
LABOR AND MONEY.



THE well-to-do home gardener, who can afford to spend a little time and money for the privilege of running a miniature greenhouse which will not only give him an abundance of flowering plants, but also a few crisp vegetables in the winter months, will be interested in the plan here illustrated for heating his house. The plans are reproduced from "How to Make the Garden Pay," published by William H. Maule, and the descriptions are from the pen of T. Greiner. The structure shown in Fig. 17 sufficiently explains itself.

Hot water will be found the proper method of heating, and a base-burning water-heater, that manufacturers furnish for from twenty-five dollars upward will do good service. The people of Hamonton, N. J., use a boiler of this kind for heating the brooders in their hen houses, and it may be arranged somewhat in the same manner as shown in Fig. 18. When the house is all made snug and tight, and where winters are not exceedingly severe, it seems that a single pipe for each bench, either in an air chamber under it to provide bottom heat, or near the outside, would be fully sufficient.

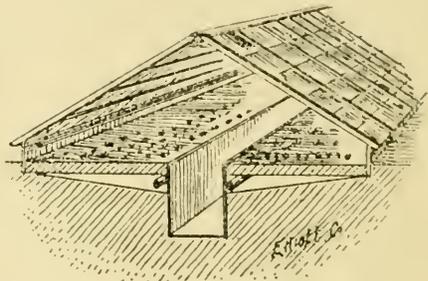


FIG. 17.—GREENHOUSE.

To make the arrangement perfectly clear, we will say that the barrel B is used merely to give pressure to the water in the stove; C is the faucet for drawing water from the barrel; D the faucet for emptying water out of stove, pipes and barrel. E is a cock for letting out air from the pipes in order to prevent it from interfering with the water circulation. F and G are cocks by which the connection between stove and water pipes can be broken. If one of them is shut the circulation stops and the pipes will gradually cool off.

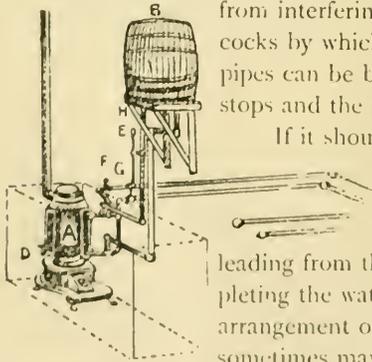


FIG. 18.—BASE-BURNING
STOVE HEATER AND PIPES.

If it should be desired to heat or boil the water in the barrel, it can be done by shutting off the two cocks, F and G, and opening the one in the vertical pipe leading from the upper heating pipe to the barrel, thus completing the water circulation through boiler and barrel. An arrangement of this kind, simple and inexpensive as it is, sometimes may come handy, even if not entirely necessary for the regular purpose of green house heating.

THE WESTERN NEW YORK FRUIT GROWERS.—I.



THE annual meeting of this Society was held in the City Hall, Rochester, on the 27th and 28th of January. Most prominent among its leading spirits are Messrs. W. C. Barry, the able President ; S. D. Willard, the wide-awake, enthusiastic Vice-President ; T. S. Woodward, Charles Green, and others, supported by horticulturists and professors from the experiment stations and schools of horticulture. Of Canadians, there were present, Mr. Craig, of the Experimental Farm, and the Secretary of the Ontario Fruit Growers' Association.

The *French system of growing potatoes* was advocated as the most remunerative, because (1) seed was so planted as to get moisture ; (2) it gave advantage of level culture ; (3) it necessitated a better preparation of the soil. The potato scab was the most minute of all the fungi, and could be propagated by planting affected seed ; therefore, the greatest care should be exercised in its choice.

Among *fungus diseases of the apple*, the rust was quite serious in places ; it was identical with that causing the so-called cedar apples, and the ripe or bitter rot. Speaking of the scab, Prof. Beach said it often caused loss of one-quarter to one-sixth of the entire crop. It winters on buds and old leaves, and checks growth of both leaves and fruit.

The *powdery mildew of the gooseberry* produces both summer and winter spores, which are easily carried about in the atmosphere for its propagation. It was proved at Geneva that the fruit and foliage could be kept clear by use of sulphide of potassium, using one ounce to two gallons of water, first dissolving it in hot water. One gallon would spray ten or twelve large bushes. The article only costs about one cent an ounce.

The *black knot of the plum and cherry* were probably identical, at least they could be infected the one by the other. The winter spores were formed in sacs during the month of February, and by them was carried about in winter. Mr. Powell, of Seneca, had lost an orchard of 1000 trees. The disease was communicated from an old hedge row of plums near by, which the owner neglected to destroy. The spores could be carried a long way, a mile or two at least, possibly, much farther. It was resolved to apply to the Legislature of the State, asking that steps be taken to eradicate the disease.

Mr. Cook, of Genesee Co., had a fine crop of *Yellow Transparent* apples this season, and esteemed them highly. The *Duchess* and *Anjou* were favorite pears. One orchard of the former, of two and a quarter acres, yielded a single crop worth \$600 this past season. The excellence of the latter was little understood. It should be in every garden.

The Bartlett had been sold at the Geneva Canning Factory this season as low as sixty cents per bushel, but it was thought that if potatoes could be grown at twenty five cents, surely pears could be grown at from sixty cents to one dollar per bushel.

The *apple crop* of one county (Orleans) was estimated at 200,000 barrels, and the total value of the fruit crops of that county this past season at \$389,000.

Speaking of commercial fertilisers for the strawberry, Mr. VanDeman said that potash was the chief element required. Mr. Palmer had excellent results with a complete fertilizer.

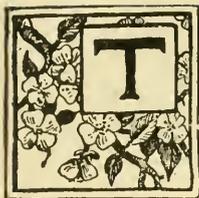
Of *new apples*, Mr. Willard spoke highly of the Sutton Beauty; it was of good quality, productive, uniform in size. Mr. Powell said it was just right for a dessert apple in size, color and quality, and at its best from January to March. The *McIntosh Red* equals Fameuse, but better in size and general appearance.

The *apple leaf blight*, Prof. Fairchild said, was a great evil. It caused premature dropping of leaves: carrying with them potash and phosphoric acid, which later on, would have been withdrawn from the tree, and stored away for future use. *Quince leaf and fruit blight* was also serious; in Maryland the quince could not be grown on account of it. The *plum leaf blight* was a similar evil, and all could be largely kept in check by spraying with copper solutions. Mr. VanDeman called attention to the danger of spraying while trees were in bloom (1) for fear of destroying tender organs of the flower, and so ruining the fruit crops, and (2) poisoning the bees.

NITRATE OF SODA.—As a rule, the best way to use nitrate of soda is to sow it hand cast at the rate of six bushels per acre, or 500 lbs., over the whole surface of the land. An average handful of nitrate of soda weighs 4 ozs. There are 289 handfuls in a bushel of 70 lbs. In sowing, every time the right foot strikes the ground you scatter a handful of 4 oz. If the breadth of land covered is 2 yards and you step 2 feet you will sow 450 lbs. per acre. Stepping 1½ feet, you will sow 606 lbs. per acre. Stepping 1 foot you will sow 900 lbs. per acre. The breadth of land covered is easily regulated by the angle at which the nitrate leaves the hand. A gardener had better use sulphate of potash than kainit, and he will usually find more benefit from super-phosphate than either. The better way is to buy a super-phosphate containing 3 or 4 per cent. of potash, and 10 or 12 per cent. of soluble phosphoric acid. Sow 300 or 400 lbs. of soda super phosphate and 500 lbs. of nitrate of soda per acre over the whole garden in the spring as soon as the frost is out of the soil. Super-phosphate is now so extensively made and is sold at such reasonable prices that it does not pay a farmer or gardener to make it himself. Better sell the bones and buy super phosphate and nitrate of soda: or, if there is no market for them, set out some grapes or asparagus, and bury the bones a foot or eight inches deep in the ground below and as wide as your time and patience will permit. — *Pop. Gar.*

LETTERS FROM RUSSIA.—VIII.

APOINT (ALEXANDER).



THIS has been known for a long time in Russia, and was mentioned in books of horticulture, even in the last century. It is not known whether it originated in Russia, or was introduced from other countries. Some horticulturists suppose that the Apport, or Oport, is of Turkish origin, but this is only a supposition. On account of the practice of the Russian people of propagating fruit trees by seeds, there have been grown from the Apport ten or more varieties, differing in time of ripening and in taste, and all are very showy apples.

Many nurserymen offer, in their catalogues, four varieties of the Apport for sale. These sorts bring a good price in our markets, though they must not be planted in narrow valleys, gardens with high walls, or in wet ground, or they will not succeed well. The Apport succeeds best in an open exposure, on good black, but not wet, soil. For this reason it succeeds well in the southern governments. It is more sensitive to cold than some other Russian varieties, and winter-kills north of Moscow.

The most beautiful samples of this sort, I saw in South-Western and Southern Russia.

One of our horticulturists, Mr. Ryloff, described several varieties of the Apport. He divides the Apports into four groups, as follows :

GROUP I.—UKRIANA APOINT (FIGS. 19 AND 20).

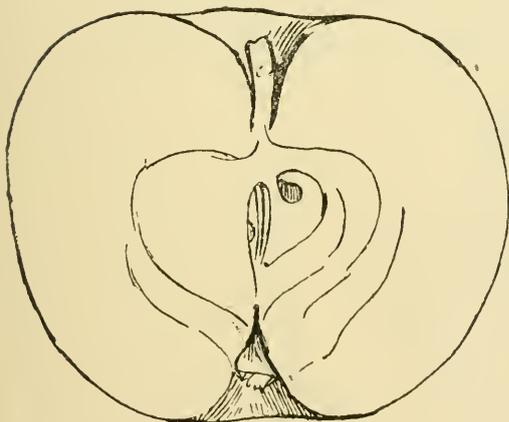


FIG. 19.

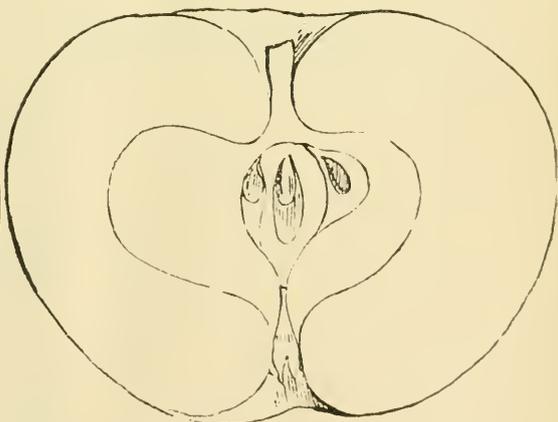


FIG. 20.

Fig. 19 is South Russian. Form, regular, not ribbed; skin, aromatic, colored all around, with rose-colored blush, on which are rose-colored spots, more highly colored on sunny side; at the cavity the apple is yellowish, and the peduncle green, much blighted. The flesh is dense, fine-grained, sub-acid, of high flavor.

Fig. 20 is of a larger size and lighter ribbed at the peduncle, which is thick. The color of it is like the first, but not so crisp. Both apples keep equally well until February or March. These varieties are good for market, especially the second one.

GROUP II. APORT, WHITE (FIGS. 21 AND 22).

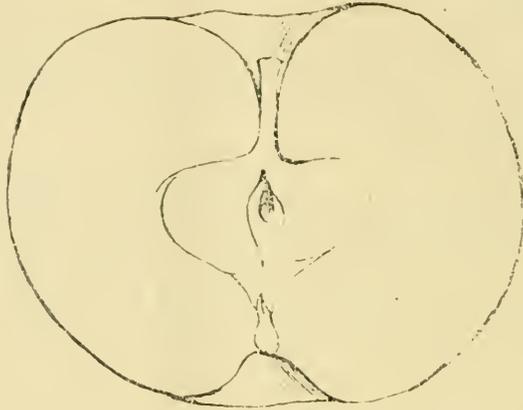


FIG. 21.

The first of these forms (Fig. 21) has both sides equal, without ribs; skin, rosy yellow with light stripes. Flesh sweeter than those of the first group, but not so good for keeping. Fig. 22 has large, prominent ribs, thick at the peduncle, and very shallow cavity. The peduncle, short and thin; skin, colored on sunny side only, with light rose-yellow blush. The flesh is dense, fine-grained and sub-acid. Apparently, this form of ribbed Aport originated from a cross with the Calville.

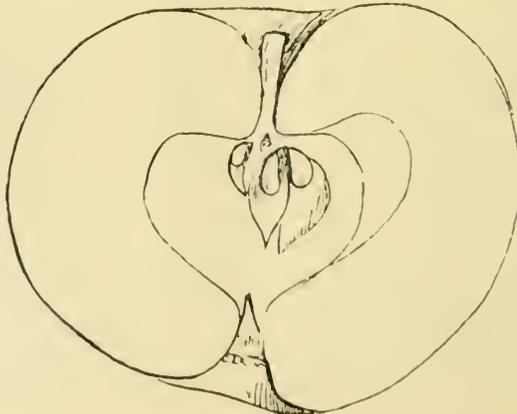


FIG. 22.

GROUP III.—GRAND ALEXANDER (FIGS. 23 AND 24).

These forms are largely distributed abroad. Andrew Leroy, in his Dictionary of Pomology, writes that this apple was received from Russia in 1817, by a nurseymen named Lee, at Hammersmith, London, and is named by him in honor of the Emperor, Alexander I. From this time it commanded the

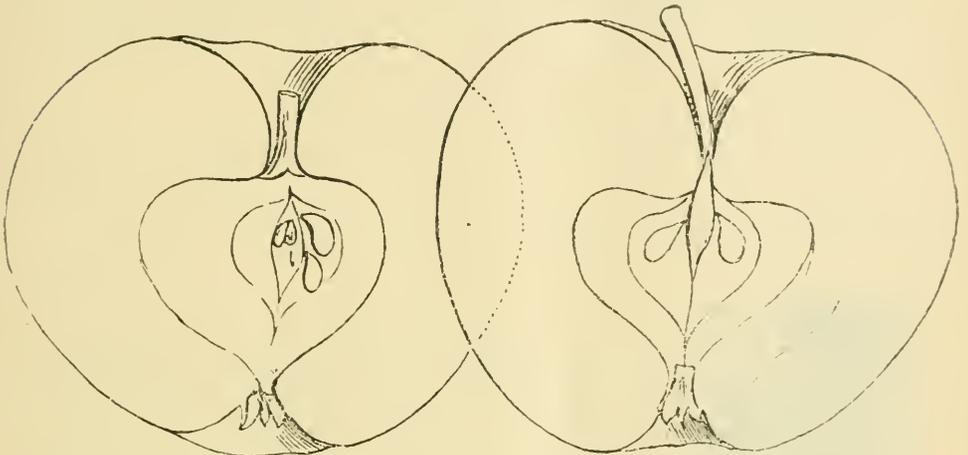


FIG. 23.

FIG. 24.

attention of fruit growers in Western Europe. Fig. 23 has transparent skin, greenish, with occasional spots, and, on the sunny side, striped with carmine. Fig. 24, which, from its outline, may be considered the type of all Apports, has yellowish-green skin, brown on the sunny side, without any signs of stripes, very few spots. The flesh of both apples is greenish, fine-grained, tender, sub-acid. The latter variety keeps better than the former.

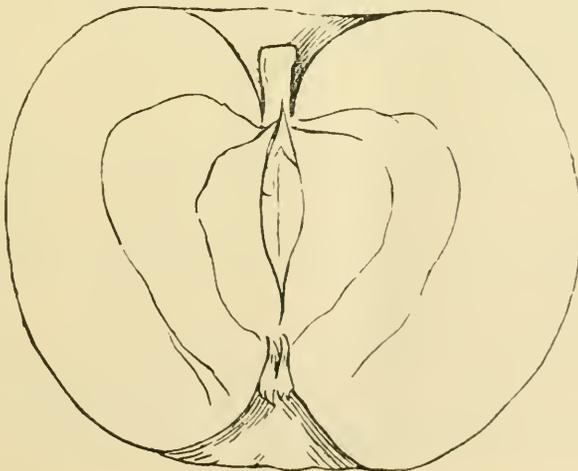


FIG. 25.

GROUP IV.—GRAND APORT (FIG. 25).

This variety was exhibited in Kharkov, and it may be called the Jumbo of apples, on account of its large size. It has prominent ribs, skin waxen-yellow, without many spots. The flesh is large-grained, sub-acid, somewhat juicy: seeds, red. It does not keep very long.

Royal College, Winnitza, Podolie, Russia.

JAROSLAV NIEMETZ.

❖ The Kitchen Garden. ❖

EARLY RADISHES.



EARLY, tender, crisp radishes can be grown the year round with little care, and in the early spring, when vegetables are scarce, and one is anxious to do work in the garden, this early vegetable may be grown with much pleasure and profit. As it is one of the earliest vegetables to mature, and will stand considerable cold, it should be one of the earliest sown in the spring. Edible radishes have been grown from seed in the vegetable gardens here in forty-three days, and in the hot-beds in thirty-eight days.

Seed should be sown every ten days or two weeks, as the forcing varieties will not remain edible longer than three or four days, when they become pithy. For growing in the hot-bed, either of the early turnip or of the olive shaped varieties will do as well, as there is little difference in earliness and quality. Of the other types the French Breakfast may be mentioned as one of the best. Early White Turnip may be grown to make a pleasing contrast in a plate of the above red varieties.

All of the above are very dwarf, have only two pair of leaves above cotyledons, and grow only from four to five inches high, consequently the rows may be sown in the hot-bed as closely as four to five inches.

For growing in the garden, the soil should be worked deeply, and cultivated till in very fine tilth. Seed should be sown early in April, and every two weeks afterwards. This will produce a continuous supply all summer and until time for the hot-bed in November.

The following are excellent second early varieties. They are very crisp, and grow long, spindle-shaped. Edible ones have been grown in the vegetable gardens here in forty-eight days, from seed: Wood's Early Frame and Beckert's Chariot. — R. H. PRICE, *Experiment Station, Va.*

THE ONION MAGGOT.

SIR,—I have been trying to collect all the information possible concerning the new system of transplanting onions. I have, however, not come across, either in Mr. Greiner's book, the "American Gardening," or the CANADIAN HORTICULTURIST, any mention of the onion maggot. May I suppose the new culture has checked this little pest, or has it still to be taken into consideration? It would appear that if he is likely to take a hand in the operations, he may prove very much more troublesome than under the old system.

GEO. BUNBURY, *Oakville.*

Some light may be thrown upon this question of Mr. Bunbury's by the following article on "The Onion Maggot," written by Prof. Fernald, of the Hatch Experiment Station :

The onion maggot (*Phorbia-ceparum* Meig) has caused a great amount of injury to the onion crops both in this country and in Europe. Its life history is briefly as follows :

The eggs (Fig. 26, *a* natural size and *b* enlarged) which are laid on the leaves near the ground, are white, smooth, somewhat oval in outline and about one twenty-fifth of an inch long. Usually not more than half a dozen are laid on a single plant, and they hatch in about a week from the time they are laid. The young larva, as soon as hatched, burrows downward within the sheath leaving a streak of a pale green color to indicate its path, and making its way into the root (Fig. 27) devours all except the outer skin. When the bulb of the plant has begun to form, several of the larva may be found feeding in company in it, and after it has been consumed they desert it for another, and still others



FIG. 26.—*a*, eggs of onion maggot natural size; *b*, eggs enlarged; *c*, larva of natural size; *d*, larva enlarged; *e*, puparium of natural size; *f*, puparium enlarged.

in succession. The larvæ reach their full growth in about two weeks, when they appear as shown in Fig. 26, *c*, natural size, *d*, enlarged. The smaller end, which is the head, is armed with a pair of black, hook-like jaws. The opposite end is cut off obliquely, and there is a pair of small, brown tubercles near the middle, and eight tooth-like projections around the edge.

The larva usually leaves the onion and transforms to pupæ in the ground outside. The puparium is shown of the natural size at *e* and enlarged at *f*. It does not differ very much in form from the larva, but the skin has hardened and changed to a chestnut brown color within which the true pupa is contained. They remain in the pupa state about two weeks in the summer, when the perfect flies (Fig. 28) emerge, after pairing, the female deposits her eggs,



FIG. 27.—Showing the eggs and the larva at work on the onion plant.

for another generation. The winter is passed in the pupa state, and the flies emerge in the early part of June or about the time that the young onions are sufficiently grown to furnish food for the young maggots (Fig. 28).

The following preventives and remedies have been suggested :

Instead of sowing onion seed in rows where the young seedlings grow in contact, or nearly so, giving every facility for passing from one to another, they should be grown in hills, so that the larvæ cannot make their way from one hill to the other.

Scattering dry unleached wood ashes over the beds as soon as the plants are up, while they are wet with dew, and continuing this as often as once a week through the month of June, is said to prevent the deposit of eggs on the plants.

Planting the onions in a new place as remote as possible from where they were grown the previous year, has been found useful, as the flies are not supposed to migrate very far.

Pulverized gas-lime scattered along between the rows has been found useful in keeping the flies away.

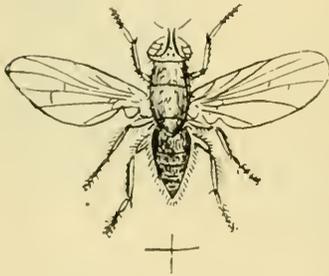


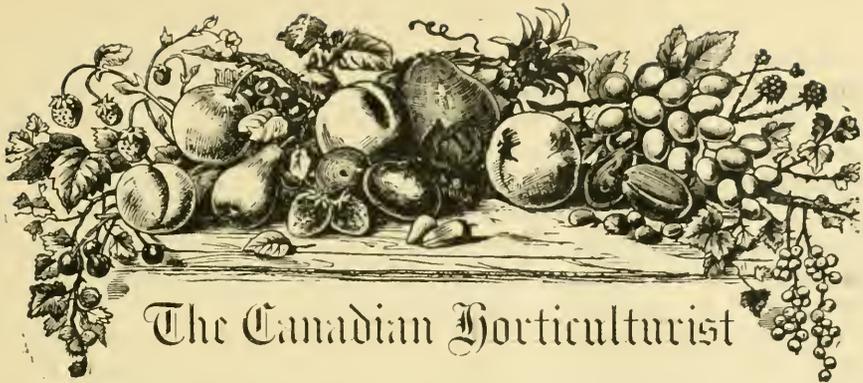
FIG. 28.—THE PERFECT INSECT
OR FLY.

Watering with the liquid from pig-pens, collected in a tank provided for the purpose, was found by Miss Ormerod to be a better preventive than the gas-lime. It is recommended to run a roller over the ground a few times after the seed has been sown, thus compacting the soil so that the maggots cannot make their way through it from one plant to another.

Water raised nearly to the boiling point and poured along the rows from a tea-kettle or other convenient vessel, has proved destructive to the maggots without injury to the plants. The water should be applied so as to go directly to the bulbs and not to the leaves.

Most excellent results have been obtained in England by growing onions in trenches, and as the bulbs grew, the earth was worked down upon them so as to keep them buried throughout the season. The onion bulbs should be covered with earth up to the neck, or even higher, so that the fly cannot get at them to lay her eggs.

When the onions have been attacked, and show it by wilting and changing color, they should either be taken up with a trowel and burned, or else a little dilute carbolic acid or kerosene oil should be dropped on the infested plants, to run down around them and destroy the maggots in the root and in the soil around them.



The Canadian Horticulturist

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NOTES AND COMMENTS.

THE EXPOSITION BUILDINGS of the World's Fair will be dedicated with appropriate ceremonies on October 12th, 1892, the 400th anniversary of the discovery of America by Columbus. Some \$300,000 are to be spent to make these ceremonies as impressive as possible. The exposition is to open its doors to the public on May 1st, 1893, and close them on October 31st, of the same year. The buildings are all making satisfactory progress, and the horticultural pavilions are up at the roof line. The electric lighting of these building will require 138,218 electric lights, and the cost will be something like \$1,500,000. Transportation conveniences to and from the exposition, both for visitors and exhibits, are to be as perfect as possible, and the facilities will be so abundant that a maximum of 400,000 persons can be carried to and from the grounds every day.

GROUNDLESS ALARM OVER AMERICAN FRUIT.—The *Horticultural Times*, of London, England, in its attempts to develop the English fruit growing industry, is lending itself to the trick of abusing the American competitor. In its issue for the 18th of January, an article appears headed, "Arsenic in American apples. Death stalks in the wake of the poisoned fruit." This article states that American apples are coated with arsenic to destroy insects—that a fine delicate powder may be rubbed off all such apples when the barrel is first opened, which is arsenic—that this is absorbed through the skin into the apples, poisoning the flesh—that the high color of American apples is unnatural, and is due to the presence of arsenic. A mysterious case of poisoning is noted where the husband was suspected of administering arsenic, but he was acquitted on the ground that the lady has eaten freely of American apples, which perhaps contained arsenic.

This scare, it seems, has been noticed by no less than five hundred English papers, and is calculated to do our country incalculable harm. That there is not the slightest ground for it has been over and over proved by chemists. They have carefully examined the mature fruit, and cannot find the least trace of arsenic upon the skin, much less in the fruit. The amount used, 3 ounces to 50 gals. of water, sprayed in a fine mist over twenty or thirty large trees, is too infinitesimally small to do harm, if the fruit was eaten at once, skin and all: but, as at least three months elapse between spraying and harvesting, even this small amount is washed off long previous to fruit season.

Our unjust contemporary speaks of the grapes which were confiscated by the New York Board of Health, as a proof of the ground taken. But no notice is taken of the fact that the Department of Agriculture caused these grapes to be analyzed, and the result was a statement by scientists that the amount of arsenic found was so small that a person would need to eat 16,000 lbs. at a single sitting, in order to take a poisonous dose!

At the recent meeting of Western New York Fruit Growers at Rochester, Prof. Van Slyke, chemist of the Geneva Experiment Station stated that he had analyzed some grapes which had been heavily sprayed with the Bordeaux mixture. He found only $\frac{1}{30}$ of a grain of copper sulphate in a pound of grapes. Physicians administer one quarter of a grain at a time as medicine, hence, to get a single dose one would need to eat eight pounds of such grapes at one time, skins and all. At the same meeting, Mr. Perkins brought up the matter of the injustice done American fruit growers by the English press, and, as a result, a committee was appointed to bring the matter before the Secretary of Agriculture of the United States, asking for some action to correct the false impression now abroad in England and on the Continent, regarding the use of American fruit.

It is claimed that pyrethrum powder is growing in favor as an insecticide. It is composed of the dried flowers of the pyrethrum. This plant grows in Dalmatia, Persia, but is now extensively cultivated in California. Hence it is known as Persian or Dalmatian insect powder, but the California brand is called bubach. It possesses an oil or volatile principle that kills insects by contact. It may be used as a dry powder, as a fume, as an alcoholic extract diluted, as a tea decoction, or in solution in water, the latter being most efficient. Half an ounce imparts to two gallons of water the insecticide principle so strongly, if promptly applied, as to destroy all insects not protected by hard or hairy skins, including cabbage or currant worms and young canker worms.

❖ Question Drawer. ❖

PROFITABLE VARIETIES OF CURRANTS AND GOOSEBERRIES.

SIR,—I wish to plant from one to two thousand currant and gooseberry plants between the trees in my young plum orchard. The soil is partly black and fairly well under-drained. Would you name the best varieties for profit.

L. G. CARTER, *Port Colborne, Ont.*

Here again much depends upon the market and the patience and skill of the cultivator in putting up the fruit for sale. Where one has plenty of time to devote to it, and much taste in handling the fruit, he may succeed best with such varieties of currants as the Cherry, which is very large but does not yield very heavy crops to the acre. But, in general, we would recommend among currants for market, the Victoria and Fay's as two of the most profitable of the red varieties. Of the black currants, we are not yet satisfied that Lee's Prolific is any great advantage over the old Black Naples and Black Champion. Black currants sell well in the markets, but, on some soils, they are very scant bearers. On soils such as our correspondent speaks of they should succeed well. Of gooseberries, the three best varieties we know of, for planting in Ontario for market, are the Downing, Pearl and Triumph. Should our correspondent be able to overcome the mildew, it would certainly pay him well to grow some of the English varieties, such as Crown Bob and Whitesmith.

FERTILIZERS FOR THE GARDEN.

SIR,—Which fertilizers do you prefer for the garden? I am at a loss to know which to order, there are so many kinds offered. I have about an acre in cultivation, chiefly planted with grapes and peaches.

WM. McMURRAY, *The Rectory, Niagara.*

For the garden nothing is better than barnyard manure, which contains all the principal elements required for rendering the land fertile, viz., phosphoric acid, potash, and nitrogen. But, since one cannot always procure this in sufficient quantity, commercial fertilizers are exceedingly desirable, and, in many cases, the more economical.

For the vineyard and peach orchard, we have found potash and phosphoric acid to be particularly beneficial. Much nitrogen seems to encourage too free growth of wood and leaves. We have had good success in a liberal use of wood ashes for the supply of potash, and in the use of phosphates for the supply of phosphoric acid. Forty bushels of wood ashes to the acre is a moderate quantity, and 100 pounds of phosphates is about the least that would be desirable in a single season.

LIST OF TREES FOR PLANTING IN THE COUNTY OF OXFORD.

SIR,—I have taken your valuable paper for two years, and make free to ask you a few questions. What kind of apple trees would you advise me to plant in a new orchard on a rich clay, loamy soil? The thermometer sometimes goes down twelve or fifteen degrees below zero. Is the Northern Spy much longer in coming into bearing than other varieties? What distance apart would you advise me to plant? What do you think of the Wealthy, or what kinds would be more profitable in my section?

J. C. HARRIS, *Ingersoll*.

It would not be wise to give an absolute list of varieties for planting in any particular section in our province. Very much depends upon the circumstances, such as markets which are accessible, the convenience of the grower with regard to the harvesting and handling to advantage certain varieties. Some people who have plenty of time at their disposal for that work, will succeed well with summer apples. Others would fail entirely in handling them and should only plant staple varieties, such as Baldwin, Greening, Northern Spy, etc.; others, again, might succeed in growing such fancy varieties as Blenheim Orange, King, Wealthy, etc.; but, unless he has time and patience to put them up in fancy packages and put them in the proper markets, he would not make as much money from these as from more productive varieties. In such particulars as these, every man must judge for himself.

The Northern Spy is certainly much longer in coming into bearing than other varieties. The writer has an orchard of three hundred of the Northern Spys which have now been planted about nineteen years; they have been bearing about three years. Had this orchard consisted of Baldwins or Greenings, no doubt they would have yielded profitable crops five years earlier.

Apple trees should not be planted closer than thirty-five feet apart each way, indeed, it would be better, with strong growing varieties on rich soil, to plant them forty feet apart. The writer has an orchard of full grown trees planted forty feet apart, the limbs of which are now interlacing.

The Wealthy is an exceedingly desirable apple in the north, but is rather tender in flesh for long shipments. Our correspondent will find, in the next annual report, a valuable list of apples, adapted to the various districts of Ontario, which may help him in his selection.

SPREADING ASHES.

SIR,—What is the best way to evenly spread ashes on the land? The shovel does not spread even, and hand sowing is tedious.

A. W. G.

The writer knows of no more convenient way than to spread as evenly as possible with the shovel. No one has time to sow ashes with the hand. Unless the ashes are in a lumpy condition, there will be little trouble in distributing them evenly enough for all practical purposes. If not, some one might follow and break up the lumps.

HYDRANGEA PANICULATA GRANDIFLORA.

SIR,—In your next issue would you kindly inform me about the culture of hydrangeas, what kind of soil, etc. I have bought during summer some of these, reared at Port Hope, but they have not grown well; remained very small and only flowered once this season. I am very glad of the explicit directions in journal about bulbs, planting and treatment. I have a great many growing.

RICHARD HENRY LIGHT, *Toronto.*

Reply by Mr. A. H. Ewing, Secretary Florists' Club, Toronto.

Your correspondent has, probably, got hold of some old stunted plants of the above, and has planted them in poor soil. No shrub pays better for good treatment and good feeding than this. Young plants should be planted in the spring, in good rich soil that has had lots of well decayed manure dug in, and they should be kept well watered during dry weather; when in full growth they may have liberal doses of liquid manure. With this treatment they are sure to have large panicles of flowers towards the end of the summer. They should be well cut back every year, before the buds begin to swell, leaving only two or three strong eyes to each shoot, except, perhaps in order to shape the plant, when more may be left, but the less eyes left the stronger will be the growth. It is a most beautiful shrub, and will well repay all the attention bestowed on it. The flowers last a long time—well into October; it should be in every garden. Here is a description of a round bed of them at Elizabeth, N. J., taken from the *American Florist*, Dec. 15, 1888:

“The bed was 25 feet in diameter, and contained thirty plants, the centre plants reaching to a height of eight feet. The plants will be seven years old next spring. They were in bloom August 1st. and made a handsome show for two months. When at their best there were two or three thousand panicles of bloom, the largest measuring fourteen inches in length, and ten inches in diameter at the base.”

FRUIT ON SANDY SOIL.

SIR,—I have bought a farm six miles from Lake Erie, where the soil is a sandy loam with quicksand bottom. What fruits and vegetables would be best on such soil?

S. G. FISCHER, *Leamington, Ont.*

Among the fruits plums, pears and apples succeed better on heavier soil than the kind described by our correspondent, but it would be well adapted to the growing of peaches, cherries, black and red raspberries, black currants and blackberries. Red currants and gooseberries would succeed better on heavier soil.

NEW VARIETIES AND EXPERIMENT STATIONS.

SIR,—What do you think of our plan of having all new fruits, that are hereafter introduced, to be accompanied by reports concerning their value from some Experiment Station? This would help to weed out a large number of worthless varieties which are thrust upon the public, recommended solely by their introducers.

EDITOR, "AMERICAN FARM AND HORTICULTURIST," *Richmond, Virginia.*

The *American Farm and Horticulturist* is a live paper, and the contents appear to be very valuable. It makes a specialty of giving publicity to the reports of the Experiment Stations concerning new fruits. The plan proposed by this journal of requiring new fruits to be accompanied with the reports of Experiment Stations as to their value, is certainly a most desirable one. Whether this could be legislated upon or not, there is no doubt at all that in the course of time this will be required by the public when people get to know the value of the reports coming from these stations. The first inquiry will be, What is said concerning this variety by the Experiment Station? and surely this will save growers generally from much waste of time in testing new varieties, many of which, after years of cultivation, prove entirely worthless.

PREVENTING GOOSEBERRY MILDEW.

SIR,—I have mislaid my copy of your journal giving the formula for preventing the mildew of gooseberries. Would you please repeat it in your next number and oblige.

W. H. MAWDSLEY, *Mayne Island, B. C.*

A remedy recommended at a recent meeting of the New York Horticultural Society by Prof. Fairchild, was *cau celeste*, which is prepared as follows: Dissolve two lbs. of sulphate of copper in two gallons of hot water; in another vessel dissolve two and a half lbs. of carbonate of soda; mix the two solutions, and when all chemical reaction has ceased, add one and a half pints of ammonia, then dilute to twenty-two gallons with water. This should be applied once before the leaves show in the spring, then three times during the growing season, being careful to wet thoroughly all the foliage and wood.

Complete success has been reported at the Geneva Experiment Station by the use of potassium sulphide; liver of sulphur. Formula: One half ounce dissolve in one gallon of water. If hot water is used the sulphide will dissolve more readily. As commercial liver of sulphur costs but little, from fifteen to twenty cents per pound, and one gallon will spray ten or twelve large bushes, if applied with a force pump and spraying nozzle, it will be seen that the largest cost will be that of labor.

PLANTING GRAPE VINES.

SIR.—What is the proper distance for grape vines, between the rows and in the rows?
A. W. G., *St. Thomas.*

Grape growers in the Niagara district usually plant their vines about ten feet apart each way, but more or less according to the variety. Slow growing kinds, like the Delaware, are often planted seven or eight feet apart in the rows, while large growers, like the Concord, are often planted as much as twelve feet. Ten feet is none too much to give between the rows, not only for convenience in cultivation, but also in order to give abundance of room for the roots of the vines to spread. Any one who pulls up a grape vine by the roots will be astonished at the great distance which they have spread in every direction. Twelve feet between the rows would not be too much for strong growers and would give room for driving a team between the rows, either with a wagon or in cultivation.

THE LAWRENCE PEAR AT STRATFORD.

SIR.—Do you think the Lawrence pear would succeed here, top-grafted on the Flemish Beauty? I find the latter variety inclined to scab, and as I have more trees of this variety than I want, I would like to graft them with Lawrence, if you think they would endure the climate of this somewhat hyperborean region.

JUDGE WOODS, *Stratford, Ont.*

We are of the opinion that the Lawrence pear would succeed at Stratford, if top-grafted on the Flemish Beauty. We would like our subscriber to make the experiment, and report to us the result.

THE WAGER PEACH.

SIR.—I exhibited some pears at the Western Fair last fall, of the same varieties as I sent you for naming. The *Beurre Diel*, *Belle Lucrative*, and *Doyenne Boussock* were correctly named. The *Winter Nelis* were thrown out, and, as they ripened in about a month, the judges' decision seems to have been correct. None of the judges knew the pear to name it. There has been an agent around taking orders for the *Wager* peach. He claims it to be hardy, will stand temperature 30° below zero. Do you know the peach? Would it be a desirable tree to plant? I am sending some pears for naming. They are medium size, have larger and smaller. I thank you for your past kindness in naming fruit for me, also for being so punctual in sending the *CANADIAN HORTICULTURIST*, which I would not like to be without.

G. H. NIXON, *Hyde Park, Ont.*

The *Wager* peach is one which is highly commended by many growers, and especially for its hardiness. That it would endure 30° below zero, or even 16°, is questionable. It is a yellow flesh peach of good size, and ripens about end of August. The writer has found it very productive, but last year quite subject to cracking. The pears you send for name are the *Jamiette*.

CANADIAN APPLES IN ENGLAND.

SIR,—I send you an extract from the *Canadian Gazette*, published in London, England, respecting the Canadian apple trade, which may be of interest.

WM. WHITE, *Ottawa.*

Extract.

“It is astonishing what strides the Canadian apple trade with England is making this season. In the shops ‘Canadian apples’ is now one of the foremost brands, and Canada has every reason to feel proud of the display she is thus making on all British fruit stalls. What better evidence could one have of the quality of the Canadian climate than is supplied by these juicy caskets of bottled sunshine? In price, too, Canada more than holds her own. As Messrs. Woodall report elsewhere, the sums actually paid at Liverpool for the Canadian fruit is from 25 to 50 per cent. higher than those paid for Maine, Boston, and New York fruit, and, even at the advanced prices, Canadians are reported as scarce. Canada has a great field here for her fruits as well as her grain, dairy, and live stock produce.”

CUTTING RUNNERS OFF STRAWBERRY PLANTS.

SIR,—Would it be advisable to cut off the runners of newly planted strawberry plants for the first year? We are informed that the crop for the next season would be larger and of better quality than if the plants were allowed to form runners.

ALLAN BROS., *Winona.*

There is no doubt that finer fruit would be obtained by keeping the runners well cut off. This could be accomplished by going over them about three times during the summer. There would, however, be fewer berries. A few runners may be allowed to strike to fill in vacant places, but unless it is desirable to propagate the variety, it would be better not to allow the new plants to grow too closely in the rows. Otherwise, they would act the same as weeds would in checking the growth, and interfere with the good results which it is desirable to obtain.

PLANTING BLACKBERRIES AND RASPBERRIES.

SIR,—What is the proper distance between rows of red and black raspberries and blackberries, in case they are to be cultivated one way only?

A. W. G., *St. Thomas.*

We are in the habit of planting raspberries in rows from five to six feet apart, and blackberries eight feet apart. They should be kept well cut back and this will very much facilitate cultivation.

VARIETIES TO PLANT.

SIR,—Would Worden, Brighton, Concord and Niagara be good and profitable varieties to plant in this section? If not, what varieties would you substitute?

A. W. G., *St. Thomas.*

The selection made by our correspondent is an exceedingly good one. The Brighton is a delicate and delicious grape, and where it succeeds well, the bunches are fine, large and very inviting. It is also, with us, a productive variety, but it is somewhat tender for shipping. The Lindley is better in this respect among the red varieties. Our correspondent's list does not include any kinds for long keeping. If winter varieties are wanted, the Vergennes and Salem might be added.

VEGETABLES ON SANDY SOIL.

SIR,—Would you please say what vegetables I might be able to grow successfully on sandy loam, with quicksand bottom?

S. G. F., *Leamington.*

Reply by J. J. H. Gregory, Marblehead, Mass.

I would say that on such a soil as you name, if it is fairly manured, you can grow Yellow Mangold beans, Winningstadt cabbage, lettuce, melons, cucumbers, peas and turnips, also Hubbard squashes.

APPLES FOR MUSKOKA.

SIR,—A friend of mine wishes to plant 100 apple trees, the locality is in Walpole. I wish you would advise me as to the most suitable varieties for shipping purposes, and a few for their own use and local trade. What have you in your locality suitable for planting in the north, Muskoka, apples and crabs?

F. W. FEARMAN, *Hamilton.*

The varieties most commendable for planting in the Muskoka district, are the following, named about in their order of ripening: Yellow Transparent, Duchess, Wealthy, LaRue, Scott's Winter. These are well tested kinds. There are some of the Russian, and other apples, which may yet prove deserving of first place.

A CURIOSITY.

SIR,—I had a curiosity in my garden last year. A Duchess apple tree, which I had transplanted in November, 1890, and which I clipped and pruned heavily, in the spring blossomed all round nicely, and set a large crop of fruit, which by the time they were gooseberry-size, it commenced to drop; as the old sap, I suppose, was being exhausted, and only matured 16 apples, the last of which it dropped on the 26th August. But about the last week of July, and while many apples were yet on the limbs, the tree commenced blossoming over again, and blossomed thus all through August and a part of Sept. The new sap, I suppose, gave it this second spring start. Do you think it will bear coming season? Answer through magazine.

M. MCKINSON, *Ottawa.*

We should say these symptoms were not favorable for the future usefulness of the tree. It would have been wiser to have removed the blossoms, for it is too exhausting of the tree's vitality, to allow it to fruit so soon after transplanting.

LETTER FROM BRITISH COLUMBIA.

SIR,—I have planted about twenty acres of fruit trees here for Mr. W. E. Scott, of Vesuvius Bay, Salt Spring Island, B.C., and have persuaded him to unite with us. I have also found a plant growing here very much resembling the olive in its habit of growth and the manner in which it bears its fruit. It also has one stone in each fruit, which, when ripe, is red instead of green or yellow, as most olives are. It is so much like the olive in character, that I am convinced that olives would grow here, and I am getting some from California to experiment with.

A. W. BARROW, *Vesuvius Bay, Salt Spring Island, B. C.*

MOORE'S DIAMOND GRAPE, ETC.

SIR,—As Moore's Diamond grape is to be distributed for trial this spring, I write to say that I have one vine growing in my garden, and, last summer, it bore ten bunches of very fine grapes. The bunches were large, very compact, and the quality was first class. The vine is about four years old.

I have a Vergennes grape vine planted in 1889. I had four bunches of first class grapes last summer, and these were of good quality. The vine is a strong grower.

I have also the Industry gooseberry. It is a good cropper and a large berry. I measured some of the berries and they were four inches round. I gathered sixteen quarts off of three small bushes, only three years old, without sign of mildew or rot.

I will write more soon regarding other varieties of fruits which I have growing in my garden. I am an amateur fruit grower, living in St. Thomas. I notice that Mr. E. Morden advises city men to stay in the city and eat all the fruit they can, and buy from outsiders, but some of us city men can grow as good fruit as outsiders, and more of it in one garden lot than some of the outsiders do on three lots, and we can eat it too.

WM. WORTH, *St. Thomas.*

McINTOSH RED.

SIR,—I was very much struck at Hamilton by the McIntosh Red, and certainly I am inclined to agree with Mr. Shepherd as to its value in England. Some one, however, said that, like the Fameuse, it was likely to spot badly most years. Have you any information as to its adaptability to this section?

In an American paper I see the Dominie highly spoken of. With me, it is absolutely worthless. Bad shape, bad grower, and a bad looking apple; and upon each occasion when I have sent it to England, its native place, I believe, it has never failed to bring the lowest price of any sent. Evidently, they knew it!

If we can grow such lovely apples as the McIntosh Red, as shown at Hamilton, I think we ought to do so, as I believe such apples will always fetch fancy prices in England, and I don't think that I ever saw such a perfect-looking red apple as the McIntosh Red that I was in Hamilton. I see in the Annual Report that the experts give Northern Spy full marks for foreign market. I am extremely curious to know what foreign market that applies to. From a constant study of returns from Great Britain, and from some considerable experience in sending Spys to London, I don't think they mean the British market! I would very much like to hear from the large shippers as to whether they ever once got the top price for the Northern Spy in their consignments to Great Britain. I know I never did. This year they were as good as they could be possibly, but they were beaten by half a dozen varieties in Covent Garden.

GEORGE BUNBURY, *Oakville.*



FEECHER, LITH. CO. BOSTON, MASS.

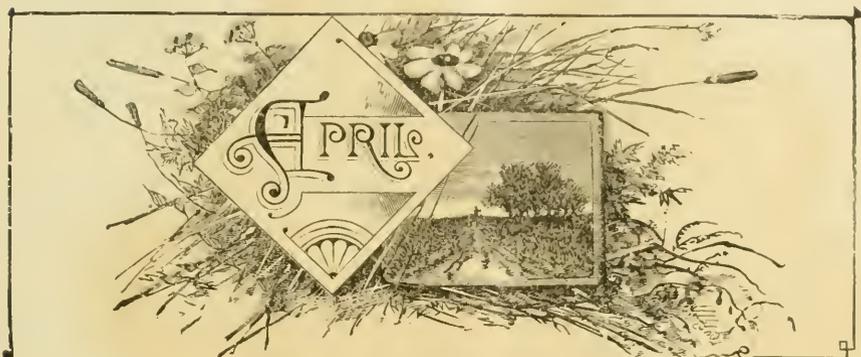
MOORE'S EARLY.

THE
Canadian Horticulturist.

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No. 4.



THE MOORE'S EARLY GRAPE.

ONE of the prominent objects of our Association of late years, is the encouragement of fruit culture in the northern portions of Ontario, and the introduction of hardy varieties for this purpose. One of the best black grapes for northern sections is the Moore's Early, well represented in our colored plate. Both the wood and the fruit ripens early, two all important characteristics : while the quality is pretty good, superior to its competitor in early ripening, the Champion, if not quite as productive. It is hardier than Concord, which variety it precedes from two to three weeks in time of ripening, and by some is thought to excel it also in quality.

The bunch is medium, shouldered, compact ; the berry, large, round, black, with a heavy blue bloom, and the vine is hardy and moderately productive. After the fruit is ripe the berries are inclined to drop, and when gathered it soon deteriorates in quality.

The Moore's Early grape was raised by Mr. J. B. Moore, Concord, Mass., and was first exhibited before the Horticultural Society of that State, in the year 1872, gaining the first prize for the best early grape.

Mr. R. B. White, of Ottawa, says that with him the Moore's Early ripens from the last of August to the middle of September ; and he would place it first among the black grapes suitable for the Ottawa Valley.

Mr. Robson, of Lindsay, considers it one of the best black grapes for his section, on account of its quality and its earliness.

Mr. John Craig, Horticulturist, Experimental Farm, Ottawa, writes: The Moore's Early ripened in 1890 at Ottawa on Sept. sixth—five days after Champion. Last year all varieties in this vicinity were a week to ten days later in ripening than usual. Moore's Early matures Sept. 14th—seven days after Champion. Its good points are its early ripening habits, hardiness and freedom from mildew. Among its weak points may be noted, slowness of growth, and, on some soils, lack of vigor, light bearing habits and perishable character of fruit. As an amateur variety in northern localities and for near market, Moore's Early has much value. As a commercial variety in grape-growing sections, I should not care to advocate the planting of this in a large way for profit.

Mr. D. Nichol, Cataragui, says: What I have seen of Moore's Early grape, I believe it is well suited for this district. It ripens earlier than the Worden, and the fruit is of large size: quality as good, yet I cannot say it is more productive.

Mr. Thos. Beal, Lindsay, says:—Every grower of grapes for family use should have a few vines of Moore's Early: but the *quantity* of fruit produced is so small, it is worthless as a market variety.

Several vines of this variety has been destroyed by *Phylloxera* in this neighborhood lately. Is this variety more liable to destruction by this pest than most other varieties? While examining the cause of ill-health and making careful enquiries respecting some of these vines, my attention was directed to the fact that while some vines were rapidly dying from the effects of *Phylloxera*, others of the same variety were quite healthy. And upon further enquiry, I learned that in every instance the diseased vines had been obtained from the United States or south of Lake Ontario, whilst the healthy ones had been produced to the north of Lake Ontario. Is this a subject worthy of investigation?

PRUNING PLUM AND CHERRY.—More care is required in pruning plum and cherry than other fruit trees. All trees should be pruned when young, so as to prevent the removal of large limbs, which removal is always injurious, but with the plum and cherry the removal of large limbs is often fatal, and always more injurious than with other fruit trees, as the wounds do not heal so rapidly, and often not at all: thus, often disease steps in and the trees die. I once cut off a large branch of a thrifty plum tree and grafted it. The graft grew and the next spring I cut off all the remaining natural branches but one. The graft grew rapidly, and the third year bore an immense load of plums, nearly as large as hen's eggs, and so close together the fruit touched everywhere. It was a wonderful sight, almost a solid block of plums; but next year the tree died. The wounds had not healed and the bark was dead for several feet below them.—*C. A. Green, in Popular Gardening.*

THE APPLE SCAB.



PROBABLY nothing has acted more powerfully in overcoming the prejudice of the farmer against agricultural education, than the specific aid to the successful pursuit of his work, which has been given by the chemist, the botanist and the etomologist. Just now fruit growers are under special obligation to the student of microscopic botany, called a mycologist, for the useful results of his investigations into the life history of such fungi as black knot, pear blight, apple scab, and a host of others.

This latter has been known to botanists on the continent of Europe for some fifty years, but, since the year 1869, its habits have been more carefully observed by mycologists, who have named it *Fusicladium dendriticum*. We gave some space to its description in Volume X, page 103, and since that time have endeavored to keep apple growers posted concerning the progress of the evil and the success of the various remedies proposed for its destruction. At that time it had reached Australia; now we have reports of its presence even in New Zealand.

An important step in advance was made when it was shown that the fungus causing the leaf blight of apple, and resulting from its early dropping from the tree, was identical with that known as the scab on the fruit itself.

On the leaves, the scab appears first as small olive-green spots, of a definite and rounded outline (Fig. 29). These increase in size, and assume a velvety appearance, with a less regular border; sometimes two or more spots will coalesce, as it were, forming one large and irregular one. Sometimes even the petioles and the young twigs become affected; thus in every possible way the fungus tries to rob the tree of its vigor.

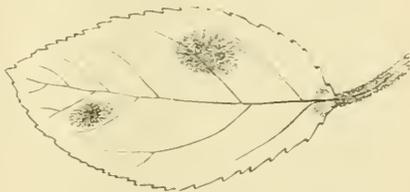


FIG. 29.

The most favorable conditions for its growth are the cool, moist weather of spring and fall, while its spread is retarded by the drouth and heat of mid-summer. Owing to the dry, warm weather prevailing in the early part of last summer, our apples were much freer from scab than usual.

The fungus appears to retain its vitality during the winter season, being known to spread even in barrels from apple to apple; and it remains in a living condition through the winter on the twigs of the apples, ready to begin its work of devastation in spring-time. The loss caused to the country is alarming. The Secretary of the Illinois State Horticultural Society places the annual loss due to this parasitic growth at \$400,000, but this is very small compared with the annual loss to apple growers in Ontario.

Fig. 30 shows a section of one of the leaf spots, and fig. 31 a section of an apple with scab bursting up through the cuticle, or outer skin, both magnified 200 diameters. The mycelium, or plant body of the fungus, resembles a dense mass of tissue composed of dark-brown walled cells. These do not penetrate

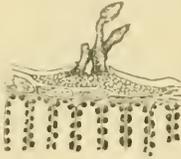


FIG. 30.



FIG. 31.

the cuticle, or inner skin, but grow between it and the epidermis, or outer skin, which they soon burst open, and send up brown threads on the ends of which are borne the spores for the propagation of the fungus.

These latter are so tiny, that it would require 3,200, side by side, to reach an inch. They germinate in moisture at a temperature of 50° F., in about eight hours; and the germ tubes have power to penetrate healthy skin and thus quickly spread the disease.

But our readers will be more interested in the success attending the use of remedies, than in the life history of the fungus.

Prof. Scribner in his report of 1887, recommended spraying the trees in early spring before the buds begun to expand, with sulphate of iron, 4 lbs. to 4 gals. of water; then, after fruit is set, with Bordeaux mixture. More recently, Prof. Taft and Prof. Trelease, have highly commended the use of ammoniacal copper carbonate, as has been fully stated in our pages.

This spring, in the last report of the Ohio Experimental Station, we observe that Prof. Green asserts that the most satisfactory of the copper compounds for destroying apple scab, with regard to cost, convenience and effectiveness, is the dilute Bordeaux mixture. The method of preparing is as follows:—Dissolve four pounds copper sulphate in two gallons of hot water: add sufficient water to cool it. Slake four pounds of quick lime, add water to make a milk of lime. Pour into copper sulphate through sieve to dissolve lime the better. Dilute to fifty gallons.

One advantage of this mixture is that Paris green may be used with it, and no injury to the foliage results. The effect should be bright, clean, healthy foliage and fruit, as well as comparative freedom from curculio and codling moth.

In the *Journal of Mycology*, Vol. VII., No. 1, Prof. Goff, of Madison, Wisconsin, reports his experiments in 1891 in treating apple-scab. He used, chiefly, copper carbonate (1) in suspension, using one ounce to 12 gallons of water, and (2) dissolved in ammonia, one ounce to 25 gallons of water. In the latter case the ounce of salt was first dissolved in a quart of ammonia.



FIG. 32.—Spores of fungus of Apple Scab. One germinating.

He found that the copper carbonate applied in suspension, just as we use Paris green, was nearly as effective as when half the amount was used diluted in ammonia, and it had the advantage that Paris green for Codling moth could be safely added. Treating the trees before the opening of the flowers was of great value; indeed, in one instance, where the Canada Peach apple was sprayed with copper carbonate, it was found that one application previous to the opening of the bloom was more effective than four after. On trees badly infested, the scab reduces the size of the apples so much as to lessen the crop at least twenty per cent., besides rendering a large part of it worthless.

Our readers will find, on another page, full directions for making copper carbonate, written by John Craig, of Ottawa.

HOW TO PRUNE.

It is, indeed, safer to prune not at all than to have a sharp knife in the hands of an ignorant man. Much of the indifference, the culture of the dwarf pear has fallen into, came about from the bad mistakes of ignorant pruners. It is not at all uncommon to see a dwarf pear tree with all its young, vigorous growth cut away—nothing but fruit spurs left. All the force is thus sent into the flowering condition in the spring. The trees are mountains of snow-white blossoms; but little fruit follows. A judicious thinning-out of weak branches, so as to get a good form to the tree, is about all the pruning required. If there is a tendency to produce an over-proportion of fruit spurs, cut out a good portion of them.

The apple often requires pruning when somewhat advanced in years. The old stunted branches should be cut out now and then, whenever a young and vigorous shoot is inclined to take its place. Peach trees especially, love this sort of pruning. The grape vine, when trained on lattice work or trellises, is very liable to have its strong branches at the end of the vine; and the good pruner is ever on the alert to get a young strong branch up from near the ground. When he can get this he often takes out an older one, weakened by age or bearing, and replaces it with youth and vigor.

The rule in pruning grape vines, is to shorten the shoots in proportion to their strength; but, if the advice we have given in former summer hints has been attended to, there will be little disproportion in this matter, as summer pinching of the strong shoots has equalized the strength of the vine. Those who are following any particular system will, of course, prune according to the rules comprising such system. As a general rule, we can only say that excellent grapes can be had by any system of pruning; for the only object of pruning in any case is to get strong shoots to push where they may be desired, or to add to increased vigor of the shoot, which pruning supposes will follow the act. increased size in the fruit it bears.

Blackberries, raspberries and currants are also much assisted by having the weaker canes thinned out, and those left, shortened a fourth or fifth of their length. Gooseberries need thinning, but not shortening. —*Gardeners' Monthly*.

DIRECTIONS FOR HOME MANUFACTURE OF COPPER CARBONATE.



As the precipitated form of carbonate of copper is not always obtainable from druggists, directions are herewith appended for the easy preparation of this material, at a cost much less than the usual wholesale price.

In a vessel capable of holding two or three gallons, dissolve $1\frac{1}{2}$ pounds of copper sulphate (blue vitriol) in 2 quarts of hot water. This will be entirely dissolved in fifteen or twenty minutes, using the crystalline form. In another vessel dissolve $1\frac{3}{4}$ pounds of sal soda (washing soda) also in 2 quarts of hot water. When completely dissolved pour the second solution into the first, stirring briskly. When effervescence has ceased fill the vessel with water and stir thoroughly; then allow it to stand five or six hours, when the sediment will have settled to the bottom. Pour off the clear liquid without disturbing the precipitate, fill with water again and stir as before; then allow it to stand until the sediment has settled again, which will take place in a few hours. Pour the clear liquid off carefully as before, and the residue is *carbonate of copper*. Using the above quantities of copper sulphate and sal soda, there will be formed 12 ounces of copper carbonate.

Instead of drying this, which is a tedious operation, add four quarts of strong ammonia, stirring in well, then add sufficient water to bring the whole quantity up to 6 quarts. This can be kept in an ordinary two gallon stone jar which should be closely corked.

FORMULA.— Each quart will contain two ounces of the carbonate of copper, which, when added to 25 gallons of water, will furnish a solution for spraying, of the same strength and character as that obtained by the use of the dried carbonate, and one which can be prepared with little labor, and kept ready for use throughout the season.

CARBONATE OF COPPER IN SUSPENSION.—When the carbonate is to be used in suspension, instead of adding the ammonia to the sediment, add water until the whole quantity is made up to 6 quarts. Stir this thoroughly until the sediment is completely suspended (entirely mixed throughout) and pour the thick liquid into a suitable jar, when it will be ready for use. Before using, shake the contents thoroughly, so that all the sediment may be evenly distributed in the water. Pour out a quart of the thick fluid and mix with 25 gallons of water.

JOHN CRAIG.

Horticulturist, Experimental Farm, in Bulletin No. 10.

MICHIGAN will expend \$12,000 to \$15,000 on its forestry exhibit, and \$4,000 to \$5,000 on its display of fruits.

REPORT ON TREES RECEIVED, 1875 TO 1880. INCLUSIVE.



IN accordance with a request on page 63, current number of the CANADIAN HORTICULTURIST, I subjoin a report on the trees received by me from the Fruit Growers' Association of Ontario, for the years mentioned, viz.:

1875.—Swazie Pomme Gris apple. The tree is alive yet; I get a few apples from it every year. It is not sufficiently hardy, and cannot be recommended for cultivation in this district. An unprofitable variety.

1876.—Glass plum. Tree quite hardy, moderately productive, and fruit of attractive appearance, which, although only second-rate in quality, commands first price in market. Can be profitably grown.

1877.—Goodale pear. The tree lived several years, but never bore fruit. Judging by this specimen, it is not suitable for cultivation here.

1878.—Burnet grape vine. A remarkably vigorous grower, and quite hardy but ripens its fruit too late. The fruit when ripe is, perhaps, the highest flavored out-door grape grown in Ontario. It ripened thoroughly last year, and but fairly well two or three seasons previously. It is, therefore, too late for profitable cultivation. Those who cultivate grapes for their own use only, would do well to have a few vines.

1879.—Ontario apple. This tree was diseased when received. It bore a few apples the second year, and has borne fruit more or less every year since. Last year it produced a large crop and grew more healthy wood than for the past five or six years. Young trees of this variety are doing very well, and scions grafted on Talman Sweet and on Tetofsky have made wonderful growth for several years, and are bearing well. This variety is at its best, and is most attractive in appearance, at about this season of the year. The color of the skin is now a bright golden yellow, shaded and overlaid to the extent of about one-half with the most brilliant carmine. It is, probably, one of the best of apples in quality, and certainly the most profitable winter apple, grown in Central Ontario.

1880.—Saunders' New Hybrid raspberry. Was quite hardy; very prolific, and excellent in quality, but the peculiar color of the fruit made it entirely unsalable. Its cultivation, therefore, had to be abandoned.

THOS. BEALL.

Lindsay, March, 1892.

POULTRY IN THE GARDEN.—Early in the season, the most useful birds in a garden are young turkeys and young chickens, the former far the most useful. Set the turkey eggs under a hen, and when they are hatched, remove the hen in a coop to the garden, and feed her well. The turkeys will have the range of the beds, and will destroy insects rapidly. Later in the season, grown up chickens will do little harm by scratching.—*Hort. Times.*

THE MICHIGAN FRUIT GROWERS.



At the request of our Directors, I attended the meeting of the State Horticultural Society, of Michigan, held in Port Huron, on the 18th and 19th of last month, and herewith append you a few notes of their proceedings. The meeting, though not quite as large, in point of numbers, as I expected to see (being held outside of their great fruit growing district), was from beginning to end a very enthusiastic one, and their papers and discussions were all of a very interesting and practical character. The first paper, by L. B. Rice, of Port Huron, on Fruit Growing on the Western Shore of Lake Huron, brought out the fact that while fruit growing on the western side of the State was the most important industry, that it had been almost entirely neglected in the eastern portion of the State, although there were many sections that were well adapted to it there. Branches of a peach tree were shown in a healthy condition, which was 24 years old, and had passed through several winters when the thermometer was 15 to 16 degrees below zero, and one when it went 32° below. In discussing the degrees of cold a peach tree will stand and bear, several instances were given where fair crops had been obtained after a winter of 16° below zero. A paper by T. T. Lyon, Director of the Horticultural Experimental Station, at South Haven, on the testing and introduction of novelties, showed that not more than one in a hundred of new fruits exceeded, or even equalled, the old standard varieties, although some of them, for the first year or two, might appear to be valuable. His advice to fruit growers was: "Though every wide-awake man might test a limited number for himself on a small scale, yet for general planting 'let novelties alone.'" It was estimated that there was money enough wasted on worthless fruits to support the poor of the country. The value of an experiment station, I think, was fully shown here. One paper was upon top grafting tender varieties, such as Baldwin, King, Greenings, etc., upon hardier sorts. Tolman Sweets, Liscom, Northern Spy, etc.; and it was contended that they could be grown successfully much further north by so doing. An illustrated lecture by Prof. Gully, of the Agricultural College, on Budding and Grafting, was full of instruction to amateur fruit growers present. There were other papers of interest, and reports of the amount of fruit shipped from different points. One township of 5,000 inhabitants sold over \$100,000, worth last year, or \$200 for every man, woman and child. The possibilities of pickles were shown in the shipping of \$40,000 worth to Chicago in a single season. The work of making a display of fruits at the great fair was also discussed. Committees have already been appointed and the work marked out, and Ontario will be left behind in this matter, if we do not begin to work soon. The State has already given a grant of \$4,000 for this work, and they expect another appropriation next winter, if necessary. I was most cordially received and royally entertained during my visit, and much regret was expressed that other members of our Society—whose names they had on their programme—were not present.

St. Catharines, Ont.

A. M. SMITH.

WESTERN NEW YORK HORTICULTURAL SOCIETY.—II.



PROFESSOR ROBERTS, of Cornell University, gave a very interesting address upon "The Methods of Maintaining the Fertility of the Orchards." He said that the productiveness of the orchard does not always depend upon the amount of plant food in the soil. The fertility of the soil ought to mean the amount of plant food which may be set free by proper methods of treatment, but, in many cases, large amounts of plant food are locked up in the soil of an orchard which only need proper treatment to become available for the trees. In such cases it is not the addition of manure, so much as cultivation, that is needed. The orchard should be ploughed deep, and often, while the trees are young. The great trouble with most orchardists is the lack of both skill and force to bring out the fertility which is in the soil. While the trees are young they should not be forced into a too rapid, succulent growth; a healthy, continuous and hardy growth is more desirable.

When once in fruit the trees need extra food. Perhaps they should not always be under the plow. Clover may be raised in the orchard. This need not always be re-plowed in order to continue the clover seed. The seed will take in an old meadow almost as well as if re-plowed. It should be harrowed every spring and sown with clover seed and ashes.

We hear a good deal said about trees that are great producers. This is not the best condition. There is such a thing as "the more you have the less you've got." Quality is everything now-a days. Numbers ruin, and quantity floods the market.

Pruning, too, is of great importance. Is it not possible to prune the orchard much on the same principle as we prune the grape vine? Is the plant food improved in quality by transporting it through 80 feet of wood before reaching the fruit which it is destined to support? We grow too much timber in our apple orchards. We ought to separate forestry from fruit culture. Our orchardists are growing too much wood, too many seeds, and too many poorly flavored apples. If by heading back the top and furnishing a reasonable amount of plant food, by fertilizing, cultivating, or by feeding sheep in an orchard, we can remedy this difficulty, a great advance will be made.

Prof. Roberts' whole address was of a practical and suggestive nature, and we give in another column a verbatim selection from it.

Mr. Woodward said that he agreed with Prof. Roberts' statements. He, himself, always made a sheep pasture of his orchard, and it was a fact that the sheep made the best insecticides he ever had. He would advise keeping one hundred sheep on every ten acres of orchard. Do not starve them. Give them plenty of linseed meal and bran, to pay them for the good they do, and this will make them ravenous for apples. He had not plowed his orchard for fourteen

years, and he owed it to the sheep that it was in such an excellent condition as it is to-day.

Mr. Willard spoke of a special orchard treated one year with potash, and another with bone meal, and so forth, and the results were wonderful.

COLD STORAGE.—In reply to a question on this subject, Mr. Powell, of Ghent, said that it would pay to have cold storage for the Bartlett pear, for otherwise it crowds upon the market too fast. A portion of the crop should be held back so as to prolong the season of marketing. In cold storage for pears the temperature is an important consideration. If too low, the flavor of the fruit is injured; 36° or 37° Fahr. is about right, for that is low enough to prolong the season of marketing a little while. Apples may be kept in a considerably lower temperature, and if held back and marketed in April, the owner will reap considerable advantage.

PRUNING TREES.—The sense of the meeting was that the best time to prune trees is, when the life of the tree is, in a sense, back in the trunk and roots, this is when the growth is dormant. The leaves contain a considerable quantity of potash and phosphoric acid, which is to be worked up for the continuance of growth, and, if pruned when in full foliage, a large quantity of these elements is lost. But they are withdrawn back into the woody parts of the tree just at fall of the leaf, so that pruning after that time does not weaken the tree. When, however, the leaves fall prematurely in the summer, through either the influence of fungus or other disease, these elements are carried away by them. The danger of pruning in the early part of the winter is that the cuts expose the wood cells to the injurious effects of the frost, and often causes black heart. The best and safest time, therefore, for pruning trees is after the coldest weather of winter is over, say in the month of April.

Mr. Hooker said that on one occasion he had pruned a block of trees in the fall and it was nearly ruined by the black heart, and finally the trees had become rotten.

THINNING FRUIT.—Mr. Powell decidedly believed in thinning pears. They should not be allowed to grow in clusters, but only one pear in a place, and these not too near.

Mr. Willard remarked that the work had to be done before the seeds are formed, because much of the strength of the tree is exhausted in the production of seeds.

Mr. Barry said that he was satisfied that cultivators of fruit trees would have much more success if they would give more attention to this work.

PACKAGES FOR SELECTED FRUIT.—The bushel keg and bushel box were mentioned as the best packages for pears.

Mr. Willard said that for plums the five-pound basket, with the wooden cover, was the most satisfactory. He preferred the wooden cover for protection to the fruit in piling.

KIEFFER PEAR.—This tree was recommended as one of the best for stock on which to graft other varieties. With regard to the quality of the fruit itself, Mr. Smith said he preferred the fruit of the Kieffer to the Clairgeau, but it has a fault of setting too much fruit, and, therefore, needed a good deal of thinning. On the whole, however, the sentiment of the meeting was that the Kieffer pear was of very poor quality, and that the public would not be long in finding it out.

BEST VARIETIES OF PLUMS.—Mr. Powell, of Ghent, said that among the most desirable varieties were the following: Gueii, Bradshaw, Hudson Purple Egg, Reine Claude (the best of the entire list for table and market), Quackenbos, and Shropshire Damson. He thought that everyone should have a tree or two of Coe's Golden Drop, not for market, but for home use.

Mr. Willard said that of all Damsons he preferred the Prince Damson. His list would include the Field, for it is the earliest, being ten days in advance of the Bradshaw, otherwise very similar, besides being of the very best quality; then the Prince of Wales, ripening on August 29th, the most productive and stylish of plums, and sells at a high price because of its beautiful appearance; the Grand Duke, which ripened this year on September 30th, the best of late plums, sells sometimes as high as \$1.50 per ten-pound basket; the Stanton, ripening last year on September 31st, and of a fine color.

Of the plums least liable to rot, the following are suggested: Reine Claude, Lombard, Damson, Smith's Prune (or Diamond).

Prunus Simoni, according to Mr. Smith, is handsome, productive and hardy, but of inferior quality. It is very showy. Trees three years planted produced a peck of beautiful specimens.

Mr. Barry said that he had grown it twelve or fifteen years as an ornamental tree, but never considered it of value, except for ornament. The quality was not good enough for a dessert plum.

CHERRIES.—Mr. Willard spoke highly of the Windsor. He had sold it at Philadelphia at 25c. per pound, which anyone will admit is a paying price. For profit he would grow the Windsor, Montmorency, Napoleon, Biggareau and English Morello. He considered the Windsor more profitable than the Black Tartarian.

APRICOTS.—Mr. Smith said that all the Russian apricots were very poor quality, and the sooner they are dug out the better. The Shense apricot from North China has some value, so has the Harris, which was first planted at Geneva some twenty-five years ago by a man named Harris. It is an old variety, but its name is lost.

The New York Assembly has voted permission for the raising of one or two old sunken vessels in Lake George, for the purpose of sending them as relics to the Chicago Fair.

MAINTAINING THE FERTILITY IN OLD ORCHARDS.



T should be kept in mind that we are dealing with trees that have occupied the same ground for several years : that have creamed the soil : that have already trespassed upon and robbed their surrounding neighbors, and that in turn have been robbed ; and there is no escape from slow starvation if the trees are reasonably thick and nothing is done. And first it should be remembered that, for the good of the trees and of the land, and for the total value of the product, the amount of fruit raised on a tree should not be large, and the quality should be of the best. Bearing this in mind, some questions arise. Is it not possible to prune the orchard by the same rules which are observed in trimming grape vines ? Our grandfathers let their vines grow as they would, and they never produced any really fine bunches of grapes. As soon as we learnt to control and direct the growth of the vine the value of the fruit increased a hundred-fold, while the least possible amount of fertility was removed from the land. It is not quite possible that fertility might be conserved, and the quality of King apples, say, be improved, by reducing the length of the limbs upon which they grow ? Is it true that the nearer the total product of fruit is to the food supply of the tree the better the results ? or, to state it in another form, Are the apples improved when the material of which they are formed is transported eighty feet through root and branch before they receive it ? Is the soil of the orchard unnecessarily drawn upon by growing too much timber ?

We assume that the fertility of the orchard has been maintained up to the time of its bearing. What I have said also implies that the trees have not been unduly forced by manure, but have made a steady, healthy growth, and have come into bearing early. Just as a heifer is simply kept growing, and great care is taken not to overfeed or change the direction of her inbred tendencies while she is young, and as she is more liberally fed when she begins to produce something, and as she is fed moderately, liberally or very liberally, according as she responds to the food given, exactly so should the orchard be treated. The amount and kind of food furnished to it should be studied as carefully as the rations of the dairy-cow. What kind of fruit does the orchard want ? Like other plants, it is likely to have enough of all kinds except potash, phosphoric acid and nitrogen. How shall these be secured ? Would it be best to get the annual dressing of fertility wanted by purchasing commercial fertilizers, or by the purchase of cattle-food, to secure the desired elements in the form of farm-manures by the help of animals ?

If the orchard contains ten acres, it will carry one hundred sheep from May to October, provided one-fourth of their food be furnished to them in the form of bran and cotton seed, or oat-meal. One hundred sheep, weighing eighty pounds each, will require for one-fourth of their daily sustenance one-half pound

of meal per head. In the spring they will want something less than this, in the fall something more. If these animals take ten per cent. of the manurial value from their food for their natural growth, there will still be left scattered on the land in solid and liquid droppings, 228 pounds of nitrogen, 146 pounds of potash and 90 pounds of phosphoric acid : or 22.8, 14.6 and nine pounds respectively per acre.

One hundred and fifty bushels of apples - that is enough to the acre if they are good enough, and too many of them are poor - contain about eight pounds of nitrogen and twenty-four pounds of ash, thirteen pounds of which is potash, and one pound of phosphoric acid, worth together \$1.86.

How much the trees will require for increased growth, how many of the leaves will be blown away, how much nitrogen will escape by leaching, and how much will be restored by the clover-roots and how much of the fertility produced by feeding the bran and meal the trees will be able to readily secure, neither the theorist nor the practical man can tell. No charge should be made the sheep for the grass, as the work they will perform in transforming the poor apples and the worms into valuable fertilizers will be a fair equivalent for it.

Summing up the case, we have the orchard raised through skill and the unaided fertility of the soil. The draft made on the land by the production of apples and the necessary growth of wood, and the losses of fertility which may occur, are to be fully met by restoring to each acre yearly, through feeding animals upon it, some twenty-three pounds of nitrogen for the eight pounds removed by the apples, fourteen and a half pounds of potash for the thirteen removed, and nine pounds of phosphoric acid to replace the one carried off. It will be seen readily that if there is any deficiency it is likely to be in potash, as scarcely more is returned to the soil than is removed by the fruit : so a dressing of potash is likely to not only improve the quality, but the color and aroma of the fruit as well.

The hundred sheep would consume in five months at pasture, 3,750 pounds oil-meal, worth \$28.00 per ton, and a like amount of bran at \$17.00 per ton, and the two would cost together, \$82.50. The value of the plant-food left on the soil, computed at commercial prices, would be \$43.07 ; but whether it is really worth that or not no one can tell. Can a hundred lean sheep, purchased in the spring, be made to gain \$100.00 in value in five months of grazing and grain-feeding with a half pound of meal per day per sheep, or with the feeding of three-fourths of a pound, if thought advisable ? I cannot answer these questions accurately myself, and I leave them for your consideration. Yet I believe that the orchardist is growing too much wood, too many apple seeds, too many apples, too poor apples, too many badly colored and badly flavored apples, and this may be remedied by heading back the trees in lieu of thinning them, and by furnishing to the bearing orchard yearly a reasonable amount of available plant-food, largely through the aid of plants and animals. I am well aware that the methods

here suggested will have to be varied to suit local conditions ; still, I claim that the principles involved are correct, and that if they are intelligently practised in connection with the best-known methods of defending the fruit from its enemies, a great advance will be made.

In the peach and plum orchards the practices which I have suggested are not likely to be the best, as it will be advisable, in most cases, to keep these constantly under cultivation. But here, as in the former case, fertility may be preserved by feeding animals during the winter, and by preserving and removing the manures produced to the orchards. I have the utmost faith that this method of getting plant-food, through plants and animals, will be found to be the most economical in most cases.

I contend (1), that the soil should be cultivated and plant-food set free to the utmost limit ; (2), that leguminous and tap-rooted plants should be used as plant-food gatherers ; (3), that animals should be kept as much for the value of the manure they produce, as for the profit realized from their other products ; (4), that the least possible amount of stalk and vine and limb be grown consistent with economy and the health of the plant ; and (5), after having practiced all the economy possible, if there is still a lack of fertility, in order to secure the highest quality of product and the greatest net income, that commercial fertilizers of a high grade should be applied with a liberal hand. If it is found at any time that commercial fertilizers give better net results than farm-manures, then there should be no hesitancy in changing from one to the other. I believe that farm-manures which have lain in the open yards or have been heated, and which have been drawn long distances, are far more expensive than are high-grade fertilizers. Well-preserved manure is worth, on an average, more than \$3.00 per ton, and our experience proves that such manure, exposed in piles from April to October, often loses one-half of its value ; therefore, I am led to believe that many tons of manure which are transported from the city contain less than a dollar's worth of soluble plant-food. This may act beneficially as a mulch, but, so far as the plant-food it contains is concerned, it is too often an expensive way of preserving the fertility of the land.—*Professor Roberts, before W. N. Y. Hort. Soc.*

THE NEW APRICOT SHENSE.—The history of this new Chinese apricot, which is now being introduced and creating much interest at the North-West has been given to us by Prof. Budd as follows : “It was obtained from me under the name of Chinese Apricot, and was grown here from pits received from a missionary located at the Province of Shense in N. W. China. After testing the hardiness of the tree and value of the fruit, I named it Shense. It is a fine grower, with large, handsome, thick foliage, and an early bearer of large and good fruit. In all respects it is the best hardy apricot I know of, and much better than any Russian sort I have seen in this country or in Russia.”

IS SPRAYING FRUIT TREES WITH ARSENICAL POISONS A DANGEROUS PRACTICE?



HAVING received several enquiries from correspondents concerning the foolish and inaccurate statements made upon the above subject, which you refer to on page 83 of your last issue, I therefore beg a little space to submit facts, which, although well known to many of your readers, may be reassuring to others. In the first place, spraying with arsenites, through the energy and perseverance of Miss Eleanor Ormerod, the Entomologist of the Royal Agricultural Society of England, is now almost as much practiced in Great Britain as it is in this country. It is true that it was only introduced as a practical method two years ago, but through the skill of the introducer, and following the publication and distribution of the report of a special committee, composed of leading fruit growers, and known as the "Experimental Committee of Everham Fruit Growers," spraying with Paris green is now largely adopted in many parts of the British Isles, as the best means of keeping down the ravaging hordes of caterpillars which were rendering futile the labors of the fruit grower throughout many of the most fertile counties of England. The value of spraying with Paris green is now fully recognized in England, and never will be given up again for the old methods. As to the possibility of any danger resulting from the consumption of sprayed fruit, I can only say that the entomologists have, with the scientific aid of their colleagues, the chemists, shown over and over again that no danger whatever exists, if only the directions of experienced advisers are carried out. At the meeting of the Dairymen's Association of Western Ontario, held at Brantford on the 15th of January last, this subject came up, and the absurdity was pointed out of such ideas as you have referred to as published by your English contemporary. As soon as I returned to Ottawa I endeavored to obtain apples which had been undoubtedly sprayed in accordance with the instructions given by entomologists, and at last, through your own kindness, succeeded. These, upon receipt, were kindly taken in hand at once by Mr. F. T. Shutt, Chemist to the Dominion Experimental Farm, and analysed with the greatest care. I send you herewith for publication, his report, which, I feel sure, coming from so high an authority, will be of interest to all fruit growers.

Further, in addition to the above, I may perhaps be allowed to give two extracts from my own report to the Hon. Minister of Agriculture for 1887, p. 21 :

"Frequent enquiries are made, and occasionally mis-statements appear, as to the possible danger of poisoning the consumers of fruit and crops protected with these arsenical poisons, which, it is urged, may be absorbed by the plants. These statements are, however, quite inaccurate, as a very elementary knowledge of vegetable physiology will show. It is suggested that the apple when treated for the Codling Moth, may absorb the poison through the stigma. With regard to this statement, it should be remembered that the stigma of a flower is without any epidermis and is exceedingly delicate, so that any corrosive poison like arsenic, in even a very weak solution, would be much more likely to injure

the stigma than to be absorbed, and further than this, even in the natural operation of fertilization, the stigma is a passive member and absorbs nothing. The activity is on the part of the pollen which pushes out its fovilla-bearing pollen tubes and protrudes them through the tissues of the stigma down the style into the ovary. In corresponding on this matter, Professor Forbes says: 'Of course you will have no trouble in proving by the highest authority that there is no possibility of the poisons being absorbed by the plants,' which statement, with the following from Professor A. J. Cook, should, I think, set this contention at rest: 'I experimented twice, extensively, to find out the truth; first in 1880, when I had fifty apples, which were very thoroughly sprayed. Poison was carefully thrown over each fruit, with one pound of pure Paris green to fifty gallons of water—four times as strong as necessary—in May. Chemical analysis in August found not a trace of poison. Another lot of fifty was analysed with the same result.'

In short, all analyses have shown that practically there is no danger whatever in spraying fruit trees if ordinary common sense precautions are taken.

In conclusion, let me add the following extract taken from the *Boston Transcript* of Jan. 1, 1892, which is a report of a lecture delivered by Prof. C. V. Riley, the United States Entomologist, and undoubtedly the most eminent economic entomologist living:

"The conclusion of the lecture was particularly appropriate and re-assuring, as it dealt with the possibility of danger in the use of arsenical poisons, and the lecturer showed how perfectly safe and incapable of harm they are if used intelligently and in accordance with the recommendations of those who had large experience in their use. He referred to the scare of last autumn in reference to grapes that were supposed to have been poisoned by spraying, and exposed for sale in New York City, and stated that the alarm, as the Department of Agriculture showed, was entirely unjustified. 'In no instance,' said Prof. Riley, 'is there an authentic case of poisoning through the use of plants or fruits that have been treated, and I wish to emphasize this fact, because almost every year there are statements in the press that are well calculated to alarm and engender the belief that we are in danger of wholesale poisoning by the increasing use of these arsenites.' The latest sensational report of this kind was the rumor, emanating from London, within the last week, that American apples were being rejected for fear that their use was unsafe. If we consider for a moment how minute is the quantity of arsenic that can, under the most favorable circumstances, remain in the calyx of an apple, we shall see at once how absurd this fear is; for even if the poison that originally killed the worm remained intact, one would have to eat many barrels of apples at a meal to get a sufficient quantity to poison a human being. Moreover, much of the poison is washed off by rain, and some of it thrown off by natural growth of the apple, so that there is, as a rule, nothing left of the poison in the garnered fruit. Add to this the further fact that few people eat apples raw without casting away the calyx and stem ends, the only parts where any poison could, under the most favorable circumstances, remain, and that these parts are always cut away in cooking, and we see how utterly groundless are any fears of injury and how useless any prohibitive measures against American apples on this score."

JAMES FLETCHER.

Dominion Entomologist, Ottawa.

THE SALTPETRE REMEDY.—Dissolve one tablespoonful of saltpetre in a pail of water. A pint poured around each hill of cucumbers or squashes is very good for the plants and very bad for the bugs, both striped and black, which burrow at night in the earth about the plants. Cut worms are also said to dissolve like earth treated with saltpetre. This is a remedy which would certainly be very useful to the plants, and if, as is claimed, it destroys or keeps away insect marauders it will prove most valuable. This saltpetre solution is useful to any plant which is attacked by insects which at any time burrow in the ground. It does not appear to be wholly certain, however, that it is as efficacious an insecticide as could be wished.—*Prof. W. W. Cooke.*

THE BLLENHEIM ORANGE APPLE.

SIR,—I read with some surprise Mr. T. H. Race's criticism of the Blenheim Orange apple in the HORTICULTURIST of March, for in the neighborhood of Toronto it succeeds so well, and is one of the best and most profitable apples grown here, and no other variety can command a higher price in the Toronto retail market in its season. I have myself picked a crop of seven barrels from a single tree, not counting the fallen ones, and know of another who gathered ten barrels from a tree, part of which had previously been broken off by a storm. Both these trees grew on a light soil with hard-pan sub-soil. Here they bear well every second year, and are keeping good this winter up to the present time.

Toronto.

HENRY R. DUKE.

SIR,—The Blenheim Orange has never been planted in this section (Durham and Northumberland) as extensively as it should be. A few trees, planted forty or fifty years ago, are still vigorous, and bear fine crops of choice fruit every other year, five or ten barrels to a tree, of shipping apples. They give fewer culls than any other variety, and always command a fine price. Mr. Chas. Young, of this town, has a tree which gave eight barrels last season, and has yielded as many as eleven barrels of shipping apples. A tree in Seymour, two miles west of Campbellford, yielded, one season, fifteen barrels. It stands on the old Wm. Clark farm, now occupied by Mr. A. Huyck.

Bowmanville.

J. CHAPLIN.

SIR,—Regarding your enquiry about Blenheim Orange apple, would say I have been buying and packing apples quite extensively for six years—put up about 11,000 barrels the past season. I find the Blenheim Orange a heavy bearer every other year; think the trees of that variety in this county (Lambton) yield as many barrels per tree as almost any other, and these of extra quality.

Arkona.

J. L. HILBORN.

Dr. Hoskins, of Vermont, writes of the Blenheim Orange in following terms, in *Orchard and Garden*: "Now that Europe, and especially England, affords to American orchardists so satisfactory a market for choice apples, it would seem well for them to consult the taste of their transatlantic customers in their plantings. Few apples are more popular in England than the Blenheim Pippin, which is as well known there, and as highly esteemed, as the Esopus Spitzenberg is in America. It has been known in this country also for nearly a century, and is not unfrequently seen upon our exhibition tables; but it has never become prominent among our market apples. There is, however, good reason to believe that it is a valuable apple, with a thrifty and hardy tree, and that when properly grown, along our Northern border, in New England and New York, it would be

a very profitable apple to ship. While not strictly an "iron-clad," it succeeds excellently in the Champlain Valley, through its whole length, and also in Huntington and other St. Lawrence River counties in Quebec. Much also of Ontario would be very favorable for it.

Mr. J. D. Stewart, Russeldale, writes: I was pleased to notice that our vice-president and the HORTICULTURIST had opened up a discussion upon the merits of the Blenheim Orange Pippin. Amongst twenty varieties of winter apples in my collection, I can safely affirm from experience, that for beauty, quality, uniformity and productiveness, the above named apple takes the cake every season. In the fall of 1890, I shipped a few barrels of Blenheims, Ribstons, and Grime's Golden, principally the former, to the Old Country, which netted me within a few cents of \$3.00 per package, whilst Spys, Kings, Baldwins, Greenings, etc., only fetched \$2.00, from apple buyers operating at the time in this neighborhood. During a severe wind storm toward the end of last September, one of the main branches of this favorite tree gave way beneath its heavy load of rich, tempting fruit, to the no small surprise of the writer, but, let us hope, without any permanent injury to the "Old Reliable." Altogether, I look upon it as the *beau ideal* of an early winter apple, and have resolved that when done top-grafting this spring, there will be less variety and more Blenheim Orange Pippins in the orchard hereafter.

ARRANGEMENT OF LAWNS.—In the spring of the year, wherever frost has existed, inequalities in the grass will occasionally appear, and all good managers of lawns, therefore, like to have a light roller go over it as soon as the danger of frost is over. If there are bare patches not covered by grass, the soil may be slightly raked, and new grass seed sprinkled before rolling. In like manner, in places where weeds have been taken out, or from any other cause, considerable inequalities of the surface may exist, earth may be sprinkled in before rolling, and the grass seed sown. With this little care lawns are considerably improved in beauty. If the grass seems to be impoverished a dressing of any kind of fertilizer is of great advantage. This may also be applied before rolling.—*Mechans' Monthly*.

RELATIVE to the Idaho pear, Prof. Budd has recently stated: "As to hardness, we are now convinced that it is superior to the Flemish Beauty or any one of the old sorts, except possibly the Besi de la Motte. Hence, we have reason to believe it will prove very valuable on the dividing ridges south of the 41st parallel, especially on the ridges of the west slope. In quality it is the best large pear I have tested in any country." We are growing a couple of the Idaho to test them in the vicinity of Chicago.

THE RESULTS OF AN EXPERIMENT TO PROVE THAT APPLES
ARE NOT POISONED BY SPRAYING WITH PARIS GREEN
FOR CODLING MOTH.



STATEMENT appeared a short time ago in a horticultural paper, published in Great Britain, to the effect that Canadian apples contained a small quantity of arsenic, and were consequently poisonous. This, it was said, was due to our practice of spraying with Paris green after the petals have dropped, in order to preserve the fruit from the ravages of the Codling Moth. This assertion received wide circulation in the British press, and was calculated to do a great deal of harm to the Canadian export apple trade. It is not the first time that a rumor to this effect has been set afloat, either by interested or ignorant people. That the suspicion is entirely without foundation has been asserted by scientists and practical men in Canada and the United States, on several occasions. Hitherto, however, no chemical work has been done in Canada to place before our horticulturists and shipowners, as well as the British people, scientific proof for refuting the statement.

Mr. James Fletcher, Dominion Entomologist, therefore procured a sample of apples that had undoubtedly been sprayed, and submitted them to a careful chemical analysis. The apples examined (Rhode Island Greenings), were kindly furnished by Mr. Woolverton, editor of the CANADIAN HORTICULTURIST, who personally vouched for the fact, that they were twice sprayed last June, with Paris green of the strength of one pound of the material to 200 gallons of water. The apples, when received, were just as they had come from the tress, *i.e.*, had not been rubbed, so that any arsenic left from the spraying would still be on the skin.

The quantity tested for arsenic was 9 lbs. 7 oz., measuring about one peck. The process to which they were submitted is one that affords extremely accurate results, and is considered the most delicate of all for the detection of arsenic. It is capable of revealing the presence of one fifty thousandth part of a grain of arsenic. If 23,000 bushels of apples contained $1\frac{1}{2}$ grains of arsenic, (as $A_2 O_3$), the minimum fatal dose for an adult, the poison could have been detected by this method.

Though all care was exercised, not a trace of arsenic could be detected, thus showing the complete absence of this poison in those apples that had been twice sprayed with Paris green.

I am of the opinion that further experiments of this nature would only serve to corroborate this negative result, and to prove that there are no grounds on which to base a suspicion that our sprayed apples are poisonous.

The insoluble character of this poison, precluding its assimilation by the apple, if such were possible, the infinitesimal part of Paris green that can remain on any apple, the frequent rains subsequent to the spraying, and the fact that apples are pared before using, all go to substantiate the argument that there is not the slightest danger of poisoning in using sprayed apples. F. T. SHUTT.

BEGINNERS IN FRUIT GROWING.



H. C. writes in the *Country Gentleman*, giving some very sensible hints to beginners in fruit growing. In the first place, he does not agree with the advice sometimes given, viz., that young adventurers in the line of horticulture should adopt some specialty and give their whole time to the growing and disposal of that one particular crop. Putting the eggs all into one basket means total loss in case of accident. For instance, if one selects strawberries for his one specialty, how often he will meet with great disappointment, owing to gluts in the market or to an unfavorable season.

In his opinion, it is better that a young man should set apart one quarter of his land for a permanent apple orchard; then he might set out between the trees in the rows, strawberries, currants, peaches, dwarf pears and blackberries, all of which would come into bearing successively while his apple trees are growing. In his first year he would receive returns for his strawberries; in his second year he would harvest at least a small crop of raspberries, and in the third year he would have currants for sale. In the fifth he would begin to harvest plums, cherries and dwarf pears, and, in his sixth year, some standard pears and quinces.

Twenty years ago the writer entered the fruit business with the mistaken notion that it would be wise to give one's whole attention to one or two particular fruits; and, after planting a large apple and pear orchard, he filled in with some three thousand peach trees, depending upon them to yield returns, while the apples and pears were coming into bearing. Disappointment came, of course. During ten years, there was not more than one or two full crops of peaches, and, as a consequence, the income from the fruit plantations was reduced to almost nothing—a pretty state of affairs for one who is depending largely upon the income from his fruit farm to provide a capital for extending his operations. Since that, he has learned how great a mistake it is to depend wholly upon any one crop of fruit. Fruits are so uncertain that, in order to be sure of success, one must plant many kinds to make sure of one. He has of late years extended his plantations to include all the varieties of small fruits and grapes, as well as every kind of orchard tree.

In our opinion, it is foolish even to confine one's apple or pear or plum orchard to any one or two varieties, however much they have been lauded by others as profitable. The old advice to plant ninety-nine Baldwins out of every hundred apple trees, was followed by many apple growers, and during the last five years Baldwin orchards have been utterly barren, and the owners have become entirely discouraged with apple growing. The same thing could be said of other varieties beside the Baldwin; one year a variety yields heavily and is pretty clean, as, for instance, was the case with the Cranberry Pippin last season, and everybody has been lauding that particular variety, and advising that it be the principal one

planted for profit; but another year it may be knotty and mis-shapen, and, in consequence, universally condemned.

It will be seen from all this how unwise it is for anyone to begin fruit business and confine his planting to too few varieties, or to be too much governed by any one man's advice, or the experience of any one season.

THE TOXICOLOGY OF THE COPPER COMPOUNDS WHEN APPLIED AS FUNGICIDES.

After considering the chemistry of the copper compounds, the form in which they appear on the grapes, and giving a careful review of the opinions of leading chemists and medical authorities here and abroad, Professor Fairchild, gave the following conclusions, based upon his examinations of grapes from the Hudson River district, where the largest amounts of copper were used:

1. The danger from the daily absorption of small quantities of copper salts with foods has been greatly exaggerated. The poisonous nature of such doses is not only not proven, but is denied by eminent authorities, whose views are supported by abundant evidence.

2. Grapes sprayed with the Bordeaux mixture according to the directions of the department in their latest publications cannot possibly contain more than 35.1000 of a grain of copper to a pound of grapes in the bunch, which amount is less than one-tenth of the amount contained in a pound of ordinary beef-liver, and absolutely inoffensive to the human system.

3. The insoluble form in which the salt of copper occurs upon the clusters, and the fact that the consumers do not eat the skins nor stems, places the mixture further still from suspicion.

4. The use of a reduced formula for the Bordeaux mixture, containing only two pounds of copper sulphate in place of six, and the substitution of the ordinary ammoniacal solution for the latest treatments immediately before ripening, will place the practice beyond the slightest possible suspicion.

Dr. Van Slyke, who analyzed the grapes from the Hudson River district, from which the grapes causing the trouble in the New York market came, gave the results of his analysis, some of which were not worked out in time to incorporate them in Professor Fairchild's paper.

The amount found on the grapes, he said, was very constant, varying from $1\frac{1}{25}$ to $1\frac{1}{20}$ grain per pound of fruit and stems. Physicians give one-fourth grain doses of copper as a tonic and astringent. Three thousand pounds, stems and all, would have to be eaten to get a dangerous amount of copper. The copper does not occur in the form of sulphate on the fruit, but as carbonate, which is not nearly so soluble.—*Proceedings W. N. Y. Hort. Soc.*

SHOULD FRUIT GROWERS KEEP MORE BEES?



NOT long ago, I read an article in some newspaper, in which the writer stated that a certain fruit grower was surprised to find that in one corner of his orchard, in which were placed several colonies of bees, the trees were heavily laden with fruit, while the trees more distant from the bee-hives had set very sparingly.

Then he called to his remembrance the circumstance that during the time the trees were in full bloom, the weather was dull and foggy, so that the bees flew but a very short distance from their homes.

This reminded me that I had often heard my father remark that whoever would grow fruit abundantly should keep lots of bees, unless he was surrounded by neighbors who kept them.

At our annual meeting held in Hamilton last December, a city gentleman stated that the fruit trees in his garden of rich soil were growing vigorously and blossomed freely, yet yielded very little fruit. I felt at the time a strong desire to ask him whether bees were kept in his neighborhood, but deeming him to be a man of more than ordinary intelligence, I refrained for fear I might be suspected of imputing ignorance.

In 1890 the peach crop in Ontario was almost a failure, although there was a fair show of blossom. During the time the trees were in full bloom, the weather was cold and rainy, which condition was very unfavorable for fecundation. By the frequent heavy rains, the pollen was, doubtless, washed off the styles without having the effect of impregnation.

The fecundity of fruit-bearing trees is not always altogether dependent on the instrumentality of bees or other insects, because, in clear, dry weather, the wind spreads the pollen from one blossom to another, thus effecting the desired operation. There are times, however, when the operation is chiefly performed through the instrumentality of bees. Sometimes, when trees are in full bloom, there are short periods of sunshine without rain; then it is the bees seem to work as if it was their only opportunity.

Aside from being honey gatherers, bees are of incalculable value. Some fruit growers may not be fully aware of this fact, and that is my reason for calling attention to it.

Cataraqui, Ont., March 17th, 1892.

D. NICOL.

THREE POISONOUS PLANTS —: The excellent article on this subject, which appeared in our March issue, was written by Prof. J. Hoyes Pantou, M.A., of the Ontario Agricultural College, Guelph, and unfortunately was not credited to him. The mistake was wholly unintentional.

THE ONTARIO APPLE IN FRONTENAC COUNTY.



HAVE lately had brought to me some fine specimens of this apple grown near Kingston. Last fall I saw the tree which Mr. Samuel Watts received from the "Fruit Growers' Association," eleven years ago. It was bearing an abundant crop of fine apples, and seemed to be in perfect health, without any signs of tenderness.

Capt. Dunlop, of Kingston, tells me the tree which he got at the same time, has grown vigorously, and the large, handsome specimens of the fruit he has shown me, is proof of the correctness of his statement.

This apple seems to be well suited to take the place here of its less hardy parent, the Spy. When raised in this district it keeps quite as well as the Spy, and sells readily at the highest price. I think it will prove to be a valuable apple for the purpose of shipping, and that is the kind of apple we are most in need of.

I am not yet prepared to say the tree would be hardy enough for the northern part of this county, where the frost is often more intense than it is at the front.

Cataraqui.

D. NICOL

NEARLY one million barrels of apples have been received in Great Britain from American and Canadian ports up to the present writing, proving that our English friends are not all convinced of their being poisoned with arsenic. The prices have kept well up, Canadian Baldwins, Spys, Russets and Greenings bringing from \$4 to \$5 per barrel in March. We notice that Greenings bring more than either Baldwins or Ben Davis.

Mr. Nicol writes that H. M. Peterson, of Colborne, whose men are at present packing apples about Kingston for export, have shipped, during the winter, 71,000 barrels. Judging from the present condition of the British market, he should do well on his ventures.

INCOMPLETE ADDRESSES.—A Brantford subscriber sends \$1.00 without giving his name, and Mr. A. E. Dewar sends \$2.25 without giving his post office.

THE SHIAWASSIE BEAUTY.—On the grounds of the late Charles Gibb (now in the hands of Wm. Craig), at Abbotsford, this has not shown any signs of being a profitable apple, spotting and cracking as badly as the Fameuse, alongside of which it is planted. A few sound specimens have been obtained each year, but the greater proportion has been second and third grade.—*Orchard and Garden.*

The Garden and Law).

GROWING EARLY TOMATOES.



Other garden vegetable has, perhaps, grown faster into public favor than the tomato, neither is there any more profitable, if got in market early, of fine appearance and of good quality; sales are brief then and prices high, and to this end every grower endeavors to obtain the earliest variety. But from my experience in tomato culture, I find there are other things more essential in obtaining early fruit than the variety.

I find that the best mode of cultivating the tomato, is to get well selected seed of the best early variety, and sow the seed in a hot bed about the first of March. Sow in rows two inches apart, and when the plants have four leaves, transplant into another hot bed. Or the seed may be sown in a small box and this laid in a hot bed which will require less space for the first sowing. In transplanting set the plant deeper than it was in the first bed. Check off the second bed four inches apart and set the plants in the cross. I do not know that transplanting causes the plant to fruit earlier, but it gives it more and stronger roots, while it is too cold to plant in the open ground, so that when set in the field they force the plant to a rapid growth and the fruit to a rapid maturity.

In the last half of May, if the situation may be chosen, select a plot of ground facing the south-east. Manure heavily with well rotted manure. I would not use any but thoroughly rotted manure, as it seems to cause the fruit to rot. The richer the soil the earlier and finer the fruit.

Break the ground deep, and pulverize thoroughly; mark off rows running north-east and south-west, four feet, or five, perhaps, will be better. In these rows drop two forkfuls of some rich, well-rotted manure, or a small handful of fertilizer every three feet, mixing well with the soil and make good hills. If the plants can be set in a warm rainy spell it is best, but, if not, then wet the bed thoroughly, take up as much soil with the plants as possible and set them in the hills. Set again deeper than they were in the bed.

As soon as the plants are well established begin cultivation. They should be cultivated every four or five days, and the first three workings should be deep. As soon as suckers appear take them off. This, I think, makes earlier and finer fruit, as it throws more of the sap into the fruit. When the plants get about fifteen inches high set a stake at each plant and keep it well tied up. As soon as fruit forms go through the rows every few days and take off all suckers and imperfect fruit, for this fruit will not give satisfaction.

In marketing tomatoes handle them as carefully as if they were eggs, and as much as possible sell direct to the consumer.—TILOS. D. BAIRD, *in Orchard and Garden.*

ARUM SANCTUM.



THIS is another of the novelties figured in the catalogue of new and rare bulbs, published by A. Blanc, of Philadelphia. It is a flower that grows in the Holy Land, in the vicinity of the City of Jerusalem. The tradition is that it was introduced from Egypt at the time of King Solomon. This may have some foundation, for we know that King Solomon gave much time to the study of rare and curious plants, and collected them from all parts of the world. We read, in the Book of Ecclesiastes, about his wisdom concerning plants. He seems to have been practically acquainted with all that were then known, from the giant cedar down to the tiny hyssop.



FIG. 32.—ARUM SANCTUM, OR SOLOMON'S LILY.

The flowers of the *Arum Sanctum*, or Solomon's Lily, are sweet scented, and often of a foot in length, seven to nine inches across, of beautiful form; in color, they are a rich ebony black. The spadix is ten to twelve inches long and ebony black, while the foliage is a rich green.

The Arums are a large genus of curious perennials, most of which are too tender to endure our cold winters without being taken up and stored inside. They are, probably, of Egyptian origin, and are well represented among amateurs by *Arum maculatum*, or the so-called Spotted Calla. To cultivate them successfully, plenty of moisture is needed during the growing season, and they should be grown in good, rich soil, whether in pots or in the open ground.

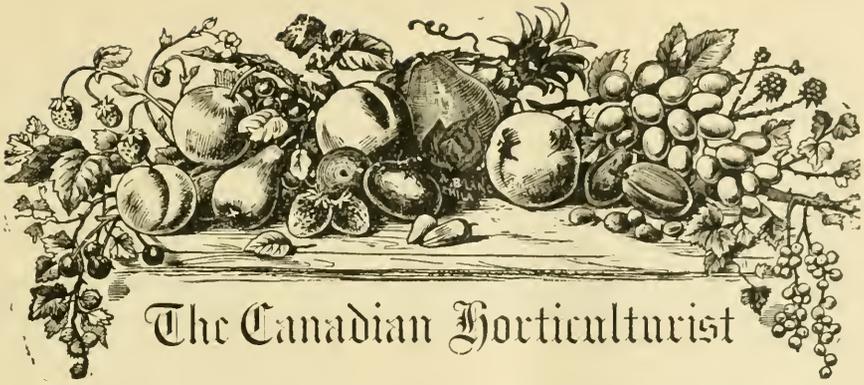


POINTS ABOUT GLADIOLI.



THE culture of gladioli may be summed up in three sentences: "Keep the ground loose. Keep the weeds down. Draw an inch of soil to the plants." The last operation is designed to give the plants greater firmness to resist winds and rain, which are so apt to beat them down when in blossom. If you have many bulbs it is useless to try to support the flower stalks in any way; but if you are determined to do it, you can drive a few stakes and stretch a wire along to which to tie stalks; but it is better to cut down such as are top-heavy. In the future, possibly, no gladioli will be grown but such as are rigid enough to resist wind and rain. It is a good plan to prevent the maturing of seed, except when wanted for sowing, both because seed-bearing is always exhausting, and because if the stalks are cut off as the flowers fade, the rows will have a neater and more pleasing appearance.

When the frosty nights begin, it will be time to think of taking up the bulbs. Much has been said of the importance of letting the plants stand until the tops die down. Not only is there no need of doing this, but it increases the labor of "lifting" fully eight-fold: for instead of having a good handle to each bulb, you will have to grope about in the dirt for it. The best way of lifting is to have a man go along the rows with a spade, thrusting it under the bulbs, but not raising them, while another follows pulling up as many plants as he can grasp, and leaving each kind by itself with its label near it. The stalks are cut off the same day as closely as possible to the bulbs, which are then put into boxes and put into a place secure from frost until December, when the dry roots, the old withered bulbs and the bulblets are taken off and the clean bulbs are removed to the cellar, where they remain until the 15th of May again.



The Canadian Horticulturist

SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

NOTES AND COMMENTS.

LAW CONCERNING PEACH YELLOWS.—In a recent number reference was made to the uselessness of the present act regarding the destruction of black knot and peach yellows, and that the Farmer's Institute of Lincoln has resolved to co-operate with the Canadian Institute in Toronto, in seeking some amendments to the act which would make it more easily operated.

Some special sections of the present Act are as follows: Revised Statutes for Ontario for 1887, under Noxious Weeds, refers to the cutting down and burning of peach or nectarine trees effected with yellows, or plum trees affected with black knot. Section 3, div. 2, compels the council, on petition of fifty ratepayers, to appoint an inspector, whose business it will be to enforce the provision of the Act; his remuneration to be fixed by said council for the performance of his duties. In section 8, the inspector is to proceed to examine the fruit trees, providing he receives written complaint that such disease exists in his municipality, and, if satisfied that either black knot or peach yellows is present, he is to give notice in writing to the owner of the land, requiring him, within five days of the receipt of the notice, to destroy the diseased trees. Section 10 deals with the penalties made, which are not under \$5, and not over \$20, for not destroying the affected trees, or for selling fruit so affected. It is quite evident that this legislation is more permissive than compulsory, and not sufficiently stringent to avail much in stamping out the disease.

A resolution to be sent to the Attorney-General and the Honorable Minister of Agriculture, calls the attention of the Government to this important question, and asks for more stringent legislation enforcing the destruction of affected trees, and for preventing the sale of diseased fruit, and regulating the appointment and duties of inspectors.

Certainly this matter needs immediate attention. There is too much machinery involved in getting a petition of fifty ratepayers in order to compel the council to appoint an inspector, and it is too bad that after such inspector is appointed, he should have to sit at home and allow the plum knot or peach yellows to flourish all around him, along the roadside and in his neighbors' orchards, not daring to utter a word unless he receive a written complaint from some ratepayer in his municipality. The worthlessness of the present Act is plainly evident to anyone who rides through the plum or peach growing sections of our country. Everywhere wretched plum, cherry and peach trees are dragging out a miserable and sickly existence, owing to these diseases. What use is it for anyone to plant an orchard of these valuable fruits, with the absolute certainty that the spores from neglected trees near by will utterly ruin his hopes of profit?

On Thursday evening, 10th of March, the writer read a paper before the Hamilton Scientific Association, on Fungi Affecting Fruits, and as a result a resolution was passed supporting the efforts of the fruit growers to secure improved legislation for the destruction of peach yellows and plum knot.

On the evening of the 11th of March, a joint committee of the above named Societies, with some representatives of the Ontario Fruit Growers' Association, waited upon the Minister of Agriculture, urging the importance of amending the Act in such a way as to make it more effective. They also advised the appointment of a general inspector of diseased fruit trees for the province, who would enforce the penalties of the Act upon parties neglecting to destroy their diseased trees when notified by the local inspector.

Mr. Dryden regretted that so important a subject had not been brought under his notice at an earlier date. In his opinion, the appointment and control of such general inspector might, very properly, be undertaken by the Ontario Fruit Growers' Association, and he would like a definite plan to be formulated as soon as convenient, in order that action might be taken at the next session.

THE FIRST EXHIBIT AT CHICAGO.—Mr. J. M. Samuels, Chief of the Department of Horticulture, Chicago, writes: To the Department of Horticulture belongs the distinction of the first exhibit, installed, for the World's Columbian Exposition.

P. S. Peterson, a nurseryman, of Rose Hill, Chicago, has, during the past week, planted six trees on the grounds near the horticultural building, as a permanent exhibit, and as a practical illustration of the successful methods of transplanting large ornamental trees. They are an Elm, fifty feet high and two feet in diameter, commemorative of General Sherman, brought from the woods in 1876, then fifty years old, and planted on the nursery grounds at Rose Hill; a Hackberry, forty feet high and two feet in diameter, commemorative of General Grant, also transplanted from the woods in 1876; a Linden, forty feet high and eighteen inches bole; a Willow, thirty feet high and thirty feet spread; a sugar Maple, forty feet high and ten feet spread; an Ash, thirty-five feet high and fourteen feet stem. It required a force of twenty-two men and twelve horses to transplant the trees, and the cost of the work was about \$700.

❖ Question Drawer. ❖

IMPROVING THE HOUSE YARD.

SIR,—Would you be kind enough to give me some hints on the arrangement of my yard? I enclose a rough drawing of the same. There is a row of small evergreens along the side of the drive, and along the road in front are evergreens and maples. The figures in the corner represent 1, 2, 3 and 5, native trees, as oak, wild cherry, elm, etc., 4 is a stump, 14 is a catalpa tree. I have just built a house in the position represented, and would like some hints with regard to the grounds. Also, what kind of grass would you recommend me to sow for the lawn?

W. S., *Beamsville.*

Fig. 33 represents the ground in its unimproved state. There is, as yet, no special walk, except that which one would naturally take toward the house; the drive is too straight to the barn, and it is inconvenient to walk from the house to the driveway in order to get into the carriage. We would advise a curve, as shown in fig. 34, approaching the house gradually to the carriage stand at 13, from which it will be easy to step in. 9 represents a large bed of evergreens, deciduous trees and shrubs, which will make a convenient turn-about for the carriage, without driving upon the lawn. 8 is a double row of native ornamental trees, which would grow up to hide the barns from the public view and from the house. We would suggest that the whole of the lawn in front of the house be

Public Road

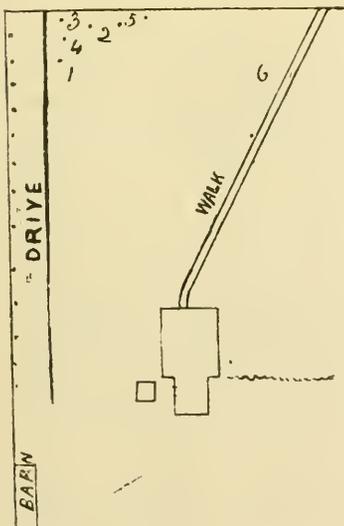


FIG. 33.

Public Road

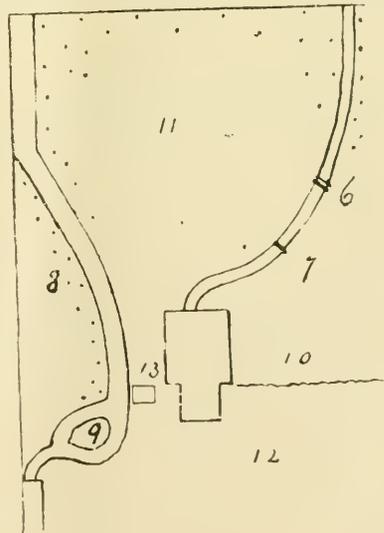


FIG. 34.

kept free from any trees, except it were one or two beautiful specimens which might stand alone, such, for instance, as a cut-leaved weeping birch, scarlet oak or an American elm, and a narrow belt of native evergreen and deciduous trees along the front fence. The corners towards the road in front by the walk and drive should be filled in with trees and shrubs of our native varieties. These will do well and answer the purpose as well as the much more expensive ones from the nurseries, that is, providing they are easily accessible. The marks at 6 and 7 represent arches over the walk, which might be made to add to the effect, and which would be very pretty, if covered with some variety of clematis or of honeysuckle. The stump, 4, in the corner, might be covered with Virginia creeper; 10 would be a very suitable place for a flower border, with a screen of evergreens to hide it from 12, the place for the vegetable garden.

A good mixture for a lawn grass was given in the CANADIAN HORTICULTURIST, Vol. 11, page 4, where Prof. Lazenby recommended the following as a good mixture, the amount being sufficient to seed one-half an acre: Kentucky Blue Grass, 5 lbs.; Red Top, 5 lbs.; Timothy, 3 lbs.; Perennial Rye Grass, 5 lbs.; Sweet Vernal Grass, 2 lbs.; White Clover, 2 lbs.

VARIETIES FOR TOP-GRAFTING IN HURON CO.

SIR,—I have seventy-five Ben Davis apple trees and I want to top-graft them in the spring; also seventy-five Seek-no-Furtherers, two years set, which have made excellent growth. I would like to use McIntosh Red and Blenheim Orange. Are there any other kinds that would do better? Would you mind telling me what is the best method of treating cracked bark on apple trees? Is slitting it any use?

A. SLOAN, *Blyth, Ont.*

The varieties recommended as suitable for cultivation in the county of Huron by the committee of our Association, were (summer), Yellow Transparent and Duchess of Oldenburg; (autumn), Gravenstein, Wealthy and Colvert; (winter), Pewaukee, Ontario, Baldwin, Hubbardston's Nonsuch, and Cranberry Pippin. But, of course, it is not intended that members and the general public should be guided entirely by this list, in their planting. It was hoped that it would be of some assistance to intending planters, in a general way; but there are many cases in which varieties, not mentioned on this list, might prove the most profitable and most successful for individual planters to cultivate. We cannot, therefore, too much impress the importance of using one's own observation and judgment in this matter of varieties. No arbitrary rule can ever be laid down on a subject which is so subject to change, as that of the best varieties of the different fruits.

The Blenheim Orange and the McIntosh Red are both varieties of great value, and, if the latter grows clear of spots, it is sure to command a high price in the market. As you will see by Mr. Race's article in the March number

of our journal, there is some complaint against the Blenheim Orange on account of its being shy in bearing.

Slitting the bark will be of little use in curing cracked bark referred to. Usually, the damage is already done before the injured place is observed. If any reader has any experience in successfully treating this trouble, we would be pleased to have the information for publication.

LIVER OF SULPHUR.

SIR,—Where can liver of sulphur (sulphide of potassium) be purchased at 20c. per pound? I see the *Country Gentleman* puts it at 15c. I have to pay 40c. a pound for it, besides express charges from Toronto. If it could be purchased at 20c. it could be used to pay.

STANLEY SPILLETT, *Nantye*.

Mr. Fred H. Yapp, druggist, Hamilton, says the ordinary price there is 25c. a pound, but if taken in quantities of 25 and 50 pounds, 20 cents a pound. Sulphuret of potassium should be asked for, not liver of sulphur, which might be understood to mean sulphur vivum.

BOOK ON COLD GRAPERIES.

SIR,—Is there any book published on cold graperies and the growing of vines in them? If so, please answer through the journal. I ripened some figs in my new one last year, but my grape vines did not make much growth. The journal seems to be constantly improving.

A. J. COLLINS, *Listowel, Ont.*

So little is done in America, comparatively speaking, in cold graperies that there is very little published with regard to their management. The only book we know of is "Woodward's Graperies and Horticultural Buildings," which is sold at \$1, and may be ordered through this office.

PLANTING GRAPE VINES.

SIR,—I think your advice, page 89 of the February number, in reference to planting grape vines, open to criticism. We have 15 acres, 8 feet in the row; 25 acres, 6 feet, and 5 acres, 4 feet; the rows in all cases are 8 feet apart. The advantages are decidedly with close planting. The trellises are covered with bearing wood at least a year sooner, and the problem of pruning so as to have an even distribution of good wood, is reduced to a minimum. The only objection is the first cost of vines and planting, which is more than offset by the extra first year's crop.

A. McNEILL, *Windsor*.

Four feet apart might answer while a vineyard is young, like, probably, that of our correspondent, but how will it do when 25 or 30 years planted? We hall be glad of the experience of vineyardists from all quarters on this subject.

—EDITOR.

❖ Open Letters. ❖

NEW RASPBERRY—HILLSIDE FAVORITE.

SIR,—Some years since a connection of mine in England, who was very fond of his garden, discovered in it a seedling raspberry, which he propagated, and it turned out so very satisfactory that many of his friends, interested in gardening, obtained plants from him, but I am not aware that the variety ever came into the hands of professional nursery men. The variety is very prolific of fine, handsome berries of a yellow color, with a pink tinge when fully ripe, ripening early, and of a more delicious flavor than any other raspberry I ever tasted; in fact, the best red raspberries appear very insipid on passing from this variety to them. Among the raisers' friends, it was called the "Hillside Favorite." I have a few plants, and will send you some for testing.

ARTHUR GEO. HEAVEN, *Boyné, Ont.*

KILLING ANTS.

SIR,—I noticed last year that some of your subscribers were troubled with ants. My practice is to stick a match, phosphorous end down, in the holes they made in the ground, and, as a result, the ants immediately clear out. Hot water, red pepper and other remedies fail.

A SUBSCRIBER.

THE NEWEST RUSSIAN IMPORTATION.

SIR,—I send you to-day a second* postpacket, with the following scions: 1. Malinovka (Raspberry apple). 2. Damas hâtive d'Oumagne. It is probable that this sort is identical with my Niemetz plume. Oumagne is not far from Winnitza. 3. Papirovka (Early Paper apple, Polish Paper apple). 4. Pomme de la ville de Romney (Romney apple). 5. Blanche longue d'été (Long Summer White). 6. Isium Ereck plum. Tartarian plum from Crimea. Small, blue, delicious, freestone. Stone very small. Very productive. A very desirable kind for Canada, providing it will endure the climate. 7. Cherkush (Tscherkush). A kind from Rumania. Good for eating. Widely distributed in South and West Russia. 8. Hâtive de Crimée. 9. Isablouke grand arrondi. 10. Isablouke d'automne. These two kinds I have not identified. In Russia, all large, white fleshed apples are called Isablouke (Sabluck) The Sabluck out of my garden may be identical with one of these varieties. 11. Isabalma. Probably from Crimea or the Caucasus. 12. White Transparent. 13. Sultan. 14. Suislepp. The best early sort. Dr. Grell says this is identical with the Dutch Peach red Summer apple, called by the French, Yellow Transparent. This is incorrect. It is quite another variety. 15. Avenarius' Sugar. From the north. The sweetest of all Russian apples. Good for children, who buy it readily.

All these varieties I have procured from the Agricultural College in Oumagne (Podolie). It is probable that I will yet this season send you very many more scions, in two packets, one from Asia, and one from Riasan. Some future time I will send you a great variety of kinds from many places. I am seeking especially some good pears for Canada, and hope to succeed. Your friend,

JAVALAV NIEMETZ.

Royal College, Winnitza, Podolie, Russia, 15th Dec., 1891.

*For list of scions in first lot, see Report, 1891.



C. Mermet del. 1892.
St. Louis, Mo. U.S.A.

2

CATHERINE MERMET.

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No. 5.



CATHARINE MERMET ROSE.



OF all the pink tea roses, probably Catharine Mermet, is the finest. The buds are long and pointed, and very beautiful, exhaling, as they open, a most delightful perfume. The flowers themselves are large, full and well formed, and, although not produced in great abundance, the variety cannot be called a shy bloomer.

The rose is flesh color, and characterized by a peculiar silvery lustre, like that of La France. Rose growers marketing cut flowers, consider this variety one of the very best for their purposes; while, on account of its beauty, it is most highly valued for exhibition purposes.

Catharine Mermet was introduced to the public by the celebrated rose growers, Messieurs Guillot fils, of Lyons, France, who are also the originators of a dozen other good roses, among them that well-known half hardy tea, the La France, which is so great a favorite in the garden of the amateur.

APPLE INSPECTION.



THE solid advantages which might accrue to Canadian fruit-growers through a proper inspection of fruit intended for export, has been twice discussed at meetings of our Association. As things now are, it is impossible to sell for cash f. o. b. to an English buyer, because he cannot be satisfied of the quality and grade until the apples have crossed the ocean and come under his personal inspection. In this way the Canadian grower or shipper is entirely at the mercy of the English buyer, who has the goods in charge.

If it is possible to plan some definite system of grading, so that a distant buyer would know, from the mere mention of the grade, just what kind of stock was being offered him, there is not the slightest doubt that apple growing in Canada would be a much more remunerative occupation than it is; for the Canadian grower could sell for cash at his own home for the full value of his stock, and a Canadian shipper would always know exactly what margin he was allowing himself on any lots he was handling.

By reference to our combined reports for the years 1890 and 1891, it will be observed that this subject has been pretty fully discussed, and that a committee was appointed to urge upon the Minister of Agriculture for the Dominion, the importance of a systematic inspection and branding of Canadian apples for export. We have drawn up an outline of the duties that would be expected of such an inspector, and defined what would be understood as meant by grades No. 1 and No. 2, expressing as nearly as possible the sense of our meeting on the subject, and submitted it to the committee. As it soon may be presented for consideration at Ottawa, we have thought best to publish the outlines of the inspector's work, in order that the committee may have the benefit of criticisms from any of our readers.

DUTIES OF THE DOMINION APPLE INSPECTOR.

- (1) To make headquarters at the most important shipping part of the Dominion, probably at Montreal, during the fall, and at Halifax during the winter months.
- (2) In the inspection of closed packages of apples, the inspector shall open out so many of the packages, say, one in ten, less or more, as shall enable him to judge fairly of the grade, and of the manner of packing.
- (3) Upon satisfying himself of the grade, he shall apply his inspector's brand, marking them "Canadian Apples, No. 1, inspected," or No. 2, as the case may be. There should be no No. 3 inspected; any such stock going forward should go without the inspector's brand.
- (4) The inspector shall have a special care to avoid branding any package, unless he is satisfied that it is honestly packed through and through. He may refuse further attention to any carload of apples, which he finds faulty in this regard; and the shipper of such carload shall forfeit the privilege of having any further attention from the inspector for the current season.
- (5) The inspector shall hold himself in readiness to inspect all fruit within one or two days after receiving notice, and engage a sufficient number of assistants to accomplish the work speedily, without delaying the loading of a cargo.

(6) No person shall be obliged to have his fruit inspected, but, if he desires the benefits of the higher prices which will be eventually secured by the inspector's brand, he will be expected to pay a fee of at least one cent per barrel for each barrel branded by the inspector.

(7) On account of some lots going by Suspension Bridge and New York to Great Britain, and other lots going to Chicago, the inspector should have, as soon as practicable, one or two trained assistants in Western Ontario during the apple season, ready to go when called upon, to any station for the inspection of carlots of apples which are ready for shipment.

(8) The inspector may make arrangements, wherever practicable, to do the work of inspection at railway stations where apples are being loaded, providing a certain number of car-loads are in readiness.

(9) The inspector shall also make it his business to see that all lots of apples branded by him are properly named as well as graded.

(10) The inspector shall take especial care to make known to growers generally his address, and business, and also to give them a full description of the proper methods of packing and grading as to the No. 1 or the No. 2 brand.

(11) Grade No. 1 shall consist of well-grown samples of the variety named, somewhat uniform in size, well-shaped, of normal color, free from scab, worm holes, curculio knots, etc.

(12) Grade No. 2 shall consist also of apples free from scab and worm holes, but which, for lack of uniformity in size, deficiency in color, abnormal shape, or for any other reason, are considered by the inspector unfit to be graded No. 1.

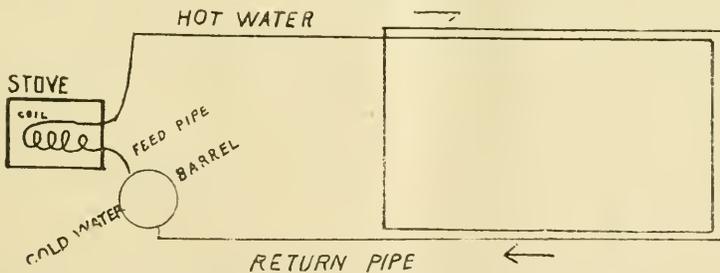
(13) In addition to the ordinary grades No. 1 and No. 2, the inspector may use his judgment in the use of one or more stars, in cases of very fancy stock in his opinion having especial merit.

(14) Any inspector proven guilty of receiving compensation for his work from interested parties, and thus being in any way influenced to favor any particular shipper, shall at once forfeit his position, and be subject to a heavy fine.

(15) It might, perhaps, be well, the first season, to have little or no fee for inspection until the benefits of the work begin to be appreciated, and growers begin to find that they can sell for cash f. o. b. to distant buyers their inspected stock, on account of the confidence gained by the brand.

A CHEAP GREENHOUSE.

SIR,—In your March number you have a plan for heating a greenhouse. I send you the plan of one we made ourselves. It works very well, and costs very little. We use old gas pipes, costing only one cent a foot, a box stove for the



coil, and a barrel for water. The size of the greenhouse is 30 ft. by 16 ft. The pipes run under the beds. I send you ground plan of it, and will be pleased to answer through your journal, any questions concerning it.

Mount Clemens, Mich.

H. J. JOB.

POINTERS TO SUCCESS IN FRUIT-GROWING.



IN fruit-growing, as in any other useful line of life, there are certain characteristics which need cultivation and practice in order to succeed, and prominent among these are *pluck* and *patience*: especially are they needed in fruit-growing, for there is something so enticing in entering upon it that very many engage in it without sitting down to count the cost, and when they are called to face some stern-visaged realities they falter, waver, get discouraged, and give it up in despair! Many would-be horticulturists, who have followed some line of business successfully, and have means to retire, think that all they have to do is to buy a piece of land, lay it out to their taste, stock it with fruits of various kinds, invest in novelties and ornamental shrubbery, erect buildings, provide tools, etc., etc., and, of course, in their estimate, *success is certain*. But, in nine cases out of ten, their fancy has anticipated what they will never realize, and instead of gliding smoothly into a realization of their animated expectations, they are forced to sit down in despondency, and the next thing, visible as a fruit of their experience, is a shingle posted on some prominent point of their premises, reading thus:

THIS PLACE FOR SALE.

Now, what is the required elements of success in such cases? Not so much a need of experience in carrying out details, but a settled determination to succeed, and patience to bridge over the unforeseen difficulties which have presented themselves. Of course, experience is part of the capital invested, if one has it, he will acquire it by the way, if he persevere! Another useful thing is a habit of observation, coupled with a spirit of enquiry. If you find your neighbor succeeding in any one or more productions, be inquisitive, and try to find out the secret of his success, and put it in practice yourself. Have a heart in your work, get practical ideas and carry them out, putting your own hand to the work, not entrusting it to a foreman, who in turn hands it over to a "hand" to perform what you ought to do yourself. I would emphasize the idea of self-experience for two reasons, first, because it is economical, and second, it draws you into and cultivates the experience you need. Gentlemen, gardening seldom pays until the gentleman turns worker.

Out of all the published theories which meet your eye, try to sift out the wheat of practical utility to suit your own special needs, and you will be surprised at the amount of "chaff" you will be obliged to reject as impracticable. There is a large percentage of *paper* gardening and farming afloat, that, if one attempted to practice, even on a small scale, he must leave the question of *pay* out altogether, and that will never do. Unless your fruit culture *pays*, that is something beside the cost of production, you will soon get weary and give it up.

Few can afford a drain upon their resources for the sake of gratifying a *taste* for the work of fruit-growing.

It is well to try a variety of productions with a view to profit ; if one fail or is a partial success, another may turn out well, and the next year *vice versa*, so that an encouraging remuneration may respond to your efforts. The greatest discouragement arises, if, after you have anticipated at the opening of the season, to realize certain good profits on some particular productions, and find something come across your estimates and reduce them to a fraction of what you had purposed to realize. The best way is not to anticipate, or forestall any stated return, but go confidently forward, taking the best care of details, and making the most of appliances by the way, and leave the result to the Giver of all returns.

As general principles have thus far been the burden of this paper, I will turn briefly to details and close. One reason my strawberries bear a good price, and sell readily in the Ottawa market, is owing to their size and flavor. I pick on the green side, begin early and always keep well picked up to ripening. The vines are kept clean, the matted rows not *too* matted, or plants not allowed too close, any old ones worked out, leaving room for the young vigorous ones to well mature their fruit. I uncover the vines late, keeping back the main picking as late as possible to meet the preserving demand, and to avoid competition with the shipping rush from the South, as the home grown product always comes up after the poor, sour, cheap berries are off the market.

We put one-half of a barrel, sawed in two, round each rhubarb plant as a *quickener*, taking care to bank dirt up around outside to keep out cold winds. We are just now (April 12th) enjoying a "norther" that is trying everything, even the cabbage and tomato plants in the hot beds. It requires some skill and a good degree of patience to pursue gardening and fruit-growing up here in the "cold north," but *nil desperandum et spera meliora* (never despair, and hope for better things) is the encouraging motto to adopt here.

Out of six Russian apricots, four Lombard plums, two Saunders ditto, and two Prunus Simoni, with which I have tried this climate, I have only two Russian apricots remaining. I thought I would leave off the "wraps" the past winter, hence the above result.

My apples, Wealthy, Duchess, Scott's Winter, Yellow Transparent, Northern Spy, etc., have come through without extra care, except tramping the snow at the beginning of winter, and putting some long manure around a few of them after the ground froze, in order to keep back too early flow of sap. All my Early Richmond cherries, and two black Tartarian out of six came through without any extra care, but the few pear trees I tried are all killed. But vacancies must be supplied with something hardier, perhaps the native wild plum which sells well on the market. But I am getting tedious and must close.

Nepean, Ont.

L. FOOTE.

SOME PROMINENT CANADIAN HORTICULTURISTS.—XV.

MR. DAVID NICOL.



At the annual meeting of our Association held in Hamilton in December, 1889, our present representative for agricultural district No. 3, was elected and has since filled his office, as one of the directors of the Ontario Fruit Growers' Association, to the satisfaction of all concerned. Mr. D. Nicol, of Cataraqui, is a man of wide experience and excellent early training in horticulture. Indeed, there are very few Canadian horticulturists who can boast of so careful an apprenticeship in all the practical details of the nursery and fruit growing lines, as the subject of this sketch. Mr. Nicol, however, is a man of such modesty that it was only by a series of questions from the editor of this journal that the facts necessary for this sketch were obtained.

David Nicol was born on June 1st, 1847, in Montrose, Forfarshire, on the east coast of Scotland. There he served his apprenticeship at market gardening and the nursery business with his father, Daniel Nicol, of the Hedderwick Nurseries, at Montrose. After completing his training at home, he served two years as foreman in the gardens at Fasque Castle, Kincardineshire, the seat of the late Sir John Gladstone; two years as foreman in the gardens of Kinnaird Castle, the seat of the Earl of Esk, Forfarshire, and one year as foreman in the Royal Botanic Gardens at Glasgow.

In 1854 Mr. Nicol determined to try his fortune in Canada, and coming to this country he entered upon the fruit growing and nursery business at Lyn, near Brockville, where he carried on his place for some eleven years. Finding the necessity of being near some large market for his fruit, an important consideration to every fruit grower, he removed to Cataraqui, near Kingston, at which place he still resides.

Mr. Nicol has spent much time, labor and money in experimenting, and as a result, he finds that, while many kinds of apples can be profitably grown in his agricultural district, which includes Frontenac, City of Kingston, Leeds and Grenville North, Leeds South, Grenville South and Brockville, there are but very few varieties of pears, plums and cherries that can be grown with profit. In his apple orchard of ten acres, he has discarded, out of a large number of varieties, a large part as entirely worthless. The kinds which he finds most profitable and which he chiefly raises for shipping purposes in his own orchard, are Golden Russet, LaRue, Fameuse, Canada Red, Brockville Beauty and Red Astracan. His work as an experimenter emphasizes the importance of having such work systematically conducted by the Government for the general good. As things are now, fruit growers all over the province are spending a large part of their lives, and wasting much time and money in endeavoring to find out what



MR. DAVID NICOL.

varieties are suited to their soil and climate. During the last fifteen or sixteen years our Association has been endeavoring to do as much plant-testing as possible, through our directors and members, and this we consider one of the most important departments of our work. In the future we hope to receive some substantial encouragement for the more careful carrying out of our distribution of trees and plants for testing, and for the collating of the results.

As a writer on agricultural and horticultural subjects, Mr. Nicol is favorably known throughout the Province of Ontario. In the annual competitions for prizes offered by the Agricultural and Arts Association for the best essays on these subjects, Mr. Nicol has been awarded nine first prizes.

As a landscape gardener, Mr. Nicol's talents have been recognized by the people of Kingston. The laying out of the Cataraqui cemetery, of Kingston, was placed in his hands and he continues to have this work in charge, a task which absorbs no small amount of his time.

For several years Mr. Nicol was president of the Frontenac Agricultural Association and was a member of the Board of Directors for over twenty years. He has also taken a share in the work of conducting the Farmers' Institutes in connection with the professors of the Ontario Agricultural College at Guelph, and has been sent out to this work three successive seasons. For this work he is well suited having had large experience, not only in fruit growing, but also in general farming and stock raising.

THE DESIRABLE CHRYSANTHEMUMS.

Mrs. Cleveland, Snowstorm, Moonlight and B. Rose have attracted a great deal of attention of late. The number of really valuable early kinds is quite small, and it is a question whether such as we have of the very early ones are desirable, for they come at the height of the aster season, and are in no way superior to them, though they require much more trouble in cultivation. If we could have varieties equal in beauty to the November flowering kinds there would be no doubt of their desirability, but such do not seem to be forthcoming. Those that have proved most valuable are Mad. C. Desgrange, white; Mlle. Lacroix, white; Alex. Dufour, amaranth; Lady Selborne, white; Mandrin, white, shaded yellow and pink; and Roi des Precoces, crimson. On the other hand, there are a few varieties that extend the chrysanthemum season far into the winter; indeed, it is not unusual to see them at Christmas. The following are valuable in this way: Grandiflorum, bright yellow; Mrs. Charles Carey, white; Ceres, pink and white; Gloire de Toulouse, amaranth crimson; Snowstorm, white; Thunberg, yellow; Bi-color, orange and yellow; and the new variety, Le Suprenant, crimson and yellow.—*Forest and Home*

LETTERS FROM RUSSIA IX.

URIUCK APRICOT.



N the Russian provinces of Central Asia, Bucharia, Chive, Turkestan, and even as far as the boundary line of China, is met, both in the wild and the cultivated state, a variety of apricot, known locally as Uriuck. As I am better acquainted with the Semirechenskaja district, with its principal town Vjery, than the other districts in Asia, I will, therefore, make some observations on this apricot as grown in that locality. I think it necessary to observe that Vjery and its suburbs have a climate subject to great drought in summer and extremely cold north-west winds in the winter, and frequently there are very sharp changes from heat to cold.

The Uriuck apricot is growing at Vjery in wild situations in the woods, where there are still to be found very old trees which endured the severe winter of 1877. They have thick trunks about one meter in diameter, with low, broad, but roundish, heads. But such giants are only left in protected places. The cultivated Uriuck is grown in the gardens of Vjery, as also in other places in Asia, entirely from seeds. Previous to the occupation of this country by Russia, the Uriuck was the chief fruit grown in local gardens. Now the inlanders have learned from the Russian people how to grow other varieties of fruit also, especially the popular Alexander apple. They sow the seeds of the Uriuck directly in the place where they wish the trees to grow, usually in the time of the season when fresh gathered from the fruit, spring planting not being so favorable. The Uriuck does not bear transplanting well, because the trees thereby become more bushy and liable to injury from gumming. As soon as the stone opens, it sends out long, vertical roots, which take hold deep down in the ground and supply the plant with water during the extreme heat of the summer. The seedling soon grows up, if there is sufficient moisture, and throws out lateral twigs on the lower part of the trunk. The seedling should be pruned in the second or third year, or else these lateral twigs dry up and render the trunk unsightly. In the third year the seedling usually blooms for the first time, the flowers being small, white, or rose-colored, and in the fourth year it bears fruit. The Uriuck blooms earlier than other fruit trees and sheds its bloom sooner. The time of ripening of the Uriuck at Vjery begins in July; the wild variety in the mountain ripens later. The color of the Uriuck is orange yellow, blushed on sunny side, though not always. In the ripe fruit the stone parts freely from the flesh. In taste, some are sweet, juicy and aromatic, not inferior to our apricots, others are inferior in quality.

There are many varieties of Uriuck which, in general terms, may be divided into wild and cultivated. Usually the wild Uriuck bears a small fruit, oftener

round than oval. The color of this is dark green; the kernel of the stone is sweet or bitter in taste. The cultivated, or improved varieties of Uriuck are a larger fruit, often oblong, leaf lighter, but the kernel of the stone is not always sweet, occasionally it also is bitter.

It is the general opinion that the best sugar Uriuck grows in Vjerny, being brought there by the Sartes. These are a people of ordinary intelligence, occupying the lovely fruit-growing and kitchen-garden district. They have also very good vegetables, especially melons. The Sartes brought the sugar Uriuck from South Turkestan. It is a variety much resembling that grown in our European gardens. There are also many other varieties of Uriuck, but there is no great difference between them. They are sold under the name of Gargens, where they were raised. In China there are growing several varieties—but chiefly four, two early and small kinds, known as the Kandak Uriuck and Khasake Uriuck, white, and two late, large, very delicate kinds, Pivande Uriuck and Pchar Uriuck (yellow, with rose blush).

In the outskirts of Vjerny we still meet occasionally with the Black Uriuck (*Prunus Armeniaca*), which grows at the town of Djargent, situated at farthest border toward China. The trees bear large fruit, almost round and almost entirely brown in color. The stone is not free. In taste, it resembles a plum more than an apricot.

The people living in the inland use the Uriuck fresh and dry it for winter. The Russian ladies cook the Uriuck green in sugar until the stone is soft, and, in such a state, it is also pleasant to the taste. The Bucharians dry a great quantity of the Uriuck apricots in the sun, and their trade in this article is large. It is brought on the markets from Northern Siberia and from the governments bordering on the Volga. It is possible to buy dried Uriuck even in the market at Moscow.

But, as a garden tree about Vjerny and the outskirts, the Uriuck is the favorite, on account of its early growth, and its merits for cooking, for which purpose it is largely grown. The wood of the Uriuck is also valuable as a material for wood work. Things made from it are very beautiful, but very heavy.

With regard to the hardiness, a Russian officer who lives in China, Peter Alexanderovsk, writes, speaking of its hardiness. He says: "In the years 1888 and 1889 heavy frosts continued for about two months, from the middle of December until the middle of February. Some days it was -37°F ., occasionally it was $+5^{\circ}\text{F}$. to -2°F . In February a south wind blew and the thermometer rose one or two degrees. Afterwards it soon fell to -13°F . Notwithstanding such severe changes, only the old trees of the Uriuck were injured, and this not everywhere. Young trees came out all right, just the same as if there had been mild weather. Rich people living inland had no crop, but the poor had every tree full of fruit, and early varieties were very heavily laden. At first view, this is difficult to explain, but the fact is that riches and poverty are measured at China

by the quantity of water controlled. Rich people watered their grounds during the whole summer, but the poor watered theirs very little on account of the scarcity. I am inclined to think that it is almost certain that the luxuriant growth caused by the frequent waterings was the cause of their failure to fruit."

I shall be much pleased if the Fruit Growers' Association of Ontario, of which I have the honor to be a member, will call public attention to this useful fruit. It will be a gratification to me to see the time when the Uriuck apricot will

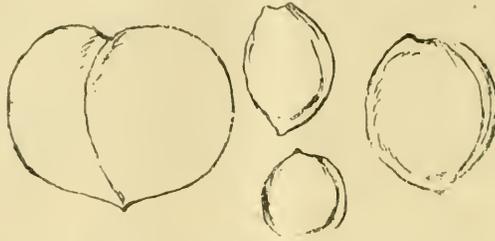


FIG. 35.—THE URIUCK APRICOT.

occupy, in the orchards and gardens in your country, a place along with the other highly prized novelties.

I send some pits of the Uriuck apricot. The illustration accompanying this article represents the fruit of medium size, and pits of various sorts.

Winnieza, Podolie, Russia.

JAROSLAR NIEMETZ.

NOTE BY EDITOR.—These pits of the Uriuck apricot which are sent us by our friend, Mr. Niemetz, together with scions of other valuable Russian sorts of fruit, have been placed in the hands of Prof. Wm. Saunders, Director of the Experimental Farm, Ottawa. He will test them carefully at that place, and, if they are found to be desirable, they will be distributed to the members of our Association, who will experiment with them still farther.

THE LAWN.—A lawn that is carefully prepared and served with a mixture consisting half and half of red top and blue grass before May 1st, will usually be a fine expanse of velvety green before September, provided it is kept clipped by a mower, once or twice a week on the average.—*From Long's "How to plant a place."*

HOW TO EAT STRAWBERRIES.—The very height of strawberry-eating is with coffee. Nobody ever really tasted coffee who has not drunk it in alternate mouthfuls with strawberries, and nobody knows the strawberry flavor excepting immediately after the clearing of the taste which comes from drinking coffee. The clearing property of coffee is familiar enough, but there is strange ignorance of this special application of it. The best of strawberries with the best of coffee makes the supreme refinement of indulgence in the fruit.—*N. Y. Post.*

SEASONABLE HINTS.

THE RASPBERRY PLANTATION.

THE work of pruning out the dead canes should have been attended to ere this ; but, in case it has not, no delay should be made in finishing the work. At the same time, all superfluous young canes should be removed. Four or five canes are enough to be left to each stool : any more will not increase the amount of the crop, and will draw the nourishment from the others. The pruning of the bushes themselves should be done very closely, as the small, weak ends of the canes will not yield much fruit, and yet they withdraw strength from the bearing buds. These should be cut back to where the buds are strong and well developed ; and the side branches should also be cut back in the same way as the canes, leaving short stubs from three to four inches in length. Both black-caps, and red raspberries, the Cuthbert especially, may be treated in this way. The method will be better understood from the accompanying engraving (Fig. 36) than from a whole paragraph of reading matter.

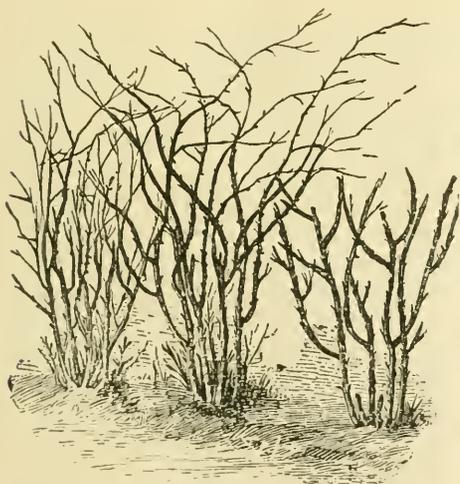


FIG. 36.—HOW TO PRUNE RASPBERRIES.



FIG. 37.—RASPBERRY ANTHRACNOSE.

THE RASPBERRY CANE RUST has been observed in New York State by the Cornell Experiment Station last season, both on the raspberry and blackberry canes. It attacks growing canes, giving them a scabby, pitted appearance, as in Fig. 37.

These blotches were brownish-black and quite conspicuous at picking time. As a result the canes and berries dried up as if by drouth. A vigorous condition of the plants is important in overcoming this disease ; and all old diseased plantations are better cleaned out and burned. One station advises spraying in early spring, before growth begins, with sulphate of iron, one pound to a gallon of water, and with Bordeaux mixture after the leaves appear.

STRAWBERRY GROWING FOR MARKET.



R. R. M. KELLOGG is a successful strawberry grower, living near Ionia, Michigan. He read a paper on the subject before a recent meeting of the Michigan Horticultural Society, a few extracts from which we give our readers in view of the near approach of the season for this fruit.

The first question treated is, *Will it pay?* Mr. Kellogg's reply is: "If you are willing to play second to everybody else and comply with all the conditions of failure, you will not get very rich. If you are willing to spend your time cultivating for thirty to fifty bushels per acre of small, second-class berries, with which you will always find the market glutted, I tell you most emphatically, no, it will not pay. If you are one of those energetic, pushing, investigating, painstaking fellows, who comply with the conditions of success, you will do as hundreds of others have done, have a good fat living and even get rich at it."

An important point which he emphasizes is, the development of a *good home market*. Our city markets are frequently glutted, and if the near markets of our smaller towns were better developed, there would be more room for the business. He says: "The great secret of developing a home market lies in getting every family in town to eat several quarts of fruit daily instead of one. It is utterly astonishing how much fruit people will use in the course of the season if you manage them rightly. If they get tired of one variety, have another of different color, flavor and appearance for them to try. Don't allow them to think they can go without for a single meal, and you will be surprised to see how quick it will cease to be regarded as a luxury but an absolute necessity. Teach them that a fruit diet means clearer heads, cooler blood and better equipoise of brain and muscle, and will save, in many cases, its cost in doctor's bills. Bear in mind, it's keeping people everlastingly eating that makes a home market. You have a right to make your fruit look as neat and attractive as you please. The corners of the box should be filled up even and the points of the berries turned up, making them even and as full as they can be crated. Small berries look decidedly neat fixed in this way, and the big berries can be put in the bottom to surprise your customers when the beauties roll out of the box. They will appreciate the joke. Never offer a customer berries in an old, broken, or dirty box. If berries once mold in a box the spores remain in it, and they will ever afterwards mold very quickly. This is especially true of raspberries.

Personal appearance goes a great way when calling on customers. The fruit should be delivered direct to the family, and it must not be muscled by rough handling. I had a fruit wagon built with side springs nearly seven feet long. It rides as easy as a boat. No matter how fast I drive my fruit is never 'jumped'

or bruised. It is handsomely painted and lettered in gold, and provided with a large gong bell so I can let people who do not buy regularly know I am in the vicinity, as I only call at the door of customers who purchase every day. Customers decide on what they want before I get to the door. I provide each one with a properly printed season card, which they bring to the door and have their order charged, and they pay weekly. Women don't usually have change, and would go without fruit if they had to pay each time ; besides, making change takes a great deal of valuable time."

Some good hints about *planting* are also given. For marking the rows, his plan is thus given : 'Take a small rope, say one-half inch in diameter and the length of the field, one man at each end with a stick as long as the rows are to be apart, so as to have all the rows exactly even. We set three and one-half feet for slow growers, and four feet for those having large foliage. Draw the line perfectly straight and lay it on the ground, drawing it back and forth a few inches, and the mark is quickly made. If, for any cause, it will not make the mark sufficiently plain, each man takes a hoe, rubbing the back of the edge on the rope till they meet in the middle of the field. The work can be done very rapidly.

Most growers use a marker making a furrow two or three inches wide and the same depth ; it is sure to dodge around, making crooked rows, and it is impossible to tell how deep the plants should be put in ; besides, the dry, loose dirt is always falling in the openings for the plant. The ground cannot be harrowed through the plants, as recommended elsewhere, on account of the unevenness of the crowns, causing many times as much work as if done according to our directions.

Digging the Plants.—The most convenient thing to carry the plants from the propagating bed to the field is a common market basket. Place a whole sheet of manilla wrapping paper in the bottom so as to hold about an inch of water, which it will readily do for several hours. Take up the plants with a four-tine spading fork and shake the dirt off the roots carefully so as not to injure roots or crowns, and remove all dead leaves, and, if growth has started much, a part of the green leaves should be taken off. Take a handful of plants with crowns as even as possible and cut the roots back to about five inches. A number of new roots will start out where the roots are cut off, greatly increasing their number, occupying every particle of soil, which will greatly increase their growth and vigor.

Setting the Plants.—Insert a common spade directly in the mark about seven inches deep, push it from you so as to make an opening about one inch wide, then bring it towards you far enough to raise the soil so as to leave a small chamber at the extreme bottom, so that all loose and dry dirt will fall clear down out of the way. Withdraw the spade and pass along as rapidly as you can do the work well. Put Wilson plants about twelve to fourteen inches apart, and eighteen inches for the free-growing kinds, like Crescent, Haverland, etc.

The other man, with his basket of plants, follows closely, using both hands, and spreads out the roots like a fan so the soil will come in contact with every part of the roots, leaving the top of the crown just even with the top of the ground. This is very important, as the fine teeth of the cultivator must slip around the plants when you come to cultivating. If you get the plants too deep they will rot, if not deep enough when the ground settles it will expose the roots. Now quickly press it down so that no dry dirt from the top will fall in on the roots, and press it firmly that no air may get to the roots.

After speaking of the great advantage of *cutting off all runners* in order to raise very large, rich, high-colored berries, he says :

You will get almost as large fruit and very much more of it by setting plants about eighteen inches apart and then allowing about five runners to take root, placing them somewhat in this shape : Let "A" represent the mother plant, and "b" the runner allowed to take root :

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b b b b b b b b b b b b b
b A b A b A b A b A b A b
b b b b b b b b b b b b b

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the outside plants being at least eight inches from the mother plant. All the plants will be about 18 inches apart. New runners will now form, but a narrow garden hoe will chop them off pretty fast after you have taken the Planet Jr. lawn edger and removed the "plow" and run along each side. This is the finest thing I have ever seen for the purpose. It is the greatest mistake to let plants form too thick. You have no right to expect a big crop of berries with a plant on every square inch.

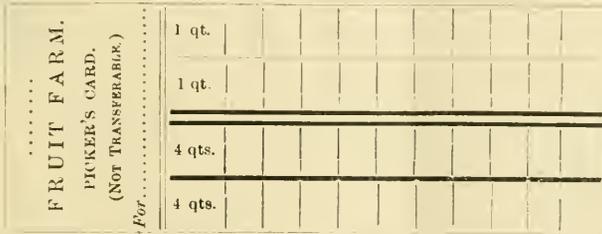
Our practice is to chop them out as evenly as we can with a narrow garden hoe, and then go over them rapidly, after having used the Planet Jr. runner cutter, and pull them out as you would weeds.

Some time ago we gave Mr. J. H. Hale's plan of *keeping tally* with the pickers. Comparing notes of this kind interest all strawberry growers. Here is Mr. Kellogg's plan :

We formerly used tickets similar to those used by milkmen, having them of the denominations of one and four quarts, with 24 and 50 quart tickets to exchange for smaller ones, so they would not get too cumbersome to the pickers. They were frequently lost, and the superintendent sometimes dropped them, which caused much trouble and dissatisfaction. We now use a check slip of heavy manilla paper, or shipping tags can be had very cheaply, giving each picker one each day with date put on back with rubber stamp. They are made "not transferable," and if lost cannot be collected if presented by anyone else. The name of each picker is written at the top. A hole is made in the corner so it can be attached to the button-hole with string, and when their picking stand is full they go to the packing shed and have the number of quarts punched out by the shed tender with a conductor's punch. When the tickets are presented for

payment, you can readily tell how many quarts were picked each day and if the full amount of fruit was delivered.

The following is the form of the tally card we now use. To prevent mistakes, the lines for the four quart column are made much heavier than those of the one quart column. It should not be over one and a quarter inches wide, and five inches long, with spaces for about one hundred and fifty quarts.



If you want to tell if there are leaves in the bottom of the box, you can do so without emptying out the berries, by running a timothy straw down to the bottom.

Picking Stands.—Berries are always jammed and bruised where pickers are allowed to set them down in the rows, and permitted to carry a number at once to the packing shed. Take common lath, and cut long enough to make a band in which four boxes can be placed. Nail them together as firmly as possible, and out of some old crate covers make the bottom, which is closely tacked on. Some hoop stuff from the cooper shop or basket factory makes the handles. They will soon pay for themselves by preventing the breaking of boxes. We use these in picking all kinds of berries. We have tried all sorts of wire boxes attached to the person for picking raspberries and blackberries, but they were not satisfactory. Four boxes is as much as the average picker will handle at once.

Paying Pickers.—We pay weekly and have a uniform price. One and a quarter cents per quart for short term pickers, for strawberries, and one and three-fourths for raspberries, and for those who pick through to the close of the season a bonus of one-quarter cent is added to each quart they have picked. This evens up the good and bad picking, and gives the best satisfaction. The rows are all numbered by placing a stake in the centre of each row, with a square board nailed on, and figures large enough to be seen from every part of the field; and when a picker commences on a row the number is put opposite his name in the overseer's book.

FRUIT TREES ON SANDY SOIL.



IN the March number of your journal I notice an inquiry from Mr. S. G. Fischer, of Leamington, Ont., about fruit trees on sandy soil, with quicksand sub-soil. In your answer you say that plums, pears, and apples do better on heavier soils. I know that that has been the general belief, but experience sometimes changes our popular theories. Now, I would say that here we have sand ridges, intermediate sand with quicksand bottom and swamp muck land, besides this, nearly one-half of the country is clay in all of its variations, from clay loam with some gravel, to hard, heavy clay. Of course, the clay loam is the most natural for the growth of these trees, I think, because it usually is dug, but the best small fruit plantations and the best orchards of plum, pear, and apple is on this sand with quicksand bottom, which a few years ago was covered with pine stumps, while between was only a coarse grass, such as is always seen on such cold lands. Mr. John M. Huffman, of this city, took such a piece and put in under-drains four or five feet below the surface, and commenced growing small fruits. Six years ago, I sold to him 25 Lombard plum trees, of which 24 grew; on the fourth year he picked and sold 50 bushels of plums at \$1.50 per bushel—\$75 from the 24 trees. Last year was the off year, but he had one-half bushel per tree, same price. Now his trees are as large again as two years ago, and promise as well in proportion. S. D. Willard says, "plant plums and pears 8x16, this gives 340 trees per acre," so from this you will see that so far the prospects are good for a reasonable profit per acre. This is the sixth year from planting. Pears planted at the same time yielded about half as well in money—I mean, on the 4th year. He has planted a good many more trees on the same soil.

Joseph Penten and R. S. Benthuff have small fruits and other larger fruits on same soil, and are both very successful. It must be remembered that these men all under-drain very deeply. It is a question how deep they may put the drains and have them successful. The deepest they have them—that is, five or six feet deep—is better than more shallow, and the question is, with them, would it still make an improvement to have them deeper? These men all give high cultivation and an abundance of manure.

S. D. Willard, of Geneva, New York, says that a few years ago a company was formed to plant an orchard on the south banks of the James' river in Virginia, about half way from Richmond to Hampton Rhodes. The land was high, rolling, and sandy, a coarse, clean sand, 60 feet deep to the level of the river. On this ground 22,000 pear trees were set out, and they have proved a success. The sixth year they paid a dividend of 10 per cent on the stock, and have steadily up to 50 per cent.

There is no reason for our friend Fischer to be discouraged if he can get an outlet for good drainage. If not, it is of little use to try to raise anything on such land; the longer that he works it, the worse off he will be. Better work out for 75c. per day than to lose his time.

Yours truly, I. B. RICE.

THE SPRAYING SEASON.



THE importance of always having the proper formula just at hand, leads us to repeat some of those most commonly needed.

Bordeaux mixture (for apple scab, grape mildew, etc., etc).

In a barrel that will hold forty-five gallons dissolve six pounds of copper sulphate, using eight or ten gallons of water, or as much as may be necessary for the purpose. In a tub or half barrel slake four pounds of *fresh* lime. When completely slaked add enough water to make a creamy whitewash. Pour this slowly into the barrel containing the copper-sulphate solution, using coarse sacking stretched over the head of the barrel for a strainer. Finally, fill the barrel with water, stir thoroughly, and the mixture is ready for use. Prepared in this way, the cost of one gallon of the mixture will not exceed one cent, the cost of copper sulphate being seven cents per pound, and lime thirty cents per bushel. In all cases it is desirable to use powdered copper sulphate, as it costs but little more and dissolves much more readily. It is highly important also that fresh lime be used.

Kerosene emulsion.—This insecticide acts by contact and is applicable to all nonmasticating insects (sucking insects, such as the true bugs, and especially plant-lice and scale-insects), and also the mandibulate or masticating insects, such as the apple worm or plum curculio, when the use of arsenites is not advisable. Kerosene emulsion may be made by means of various emulsifying agents, but the most satisfactory substances—and those most available to the average farmer and fruit-grower—are milk and soapsuds. In each of these cases the amount of emulsifying agent should be made one-half the quantity of kerosene.

One of the most satisfactory formulas is as follows :

	Per cent.
Kerosene.....gallons..	2 67
Common soap or whale-oil soap.....pounds..	1 1/2
Water.....gallons..	1
	} 33

Heat the solution of soap and add it boiling hot to the kerosene. Churn the mixture by means of a force pump and spray nozzle for five or ten minutes. The emulsion, if perfect, forms a cream which thickens upon cooling and should adhere without oiliness to the surface of glass. If the water from the soil is hard, or has a large percentage of lime add a little lye or bicarbonate of soda, or else use rain-water. For use against scale-insects dilute one part of the emulsion with nine parts of cold water. For most other insects, dilute one part of the emulsion with fifteen parts of water. For soft insects like plant-lice, the dilution may be carried to twenty to twenty-five parts of water.

Paris Green (for codling moth and curculio) may be applied to plum and other trees, except the peach, at the rate of one to two hundred pounds of water.

For the peach, much more caution is necessary, as the foliage is very susceptible to injury, but, by the addition of a little lime to the mixture, it may be safely applied, even at the rate of one pound to 150 gallons of water, and in much greater strength to the apple, or other trees of strong foliage.

Alkaline wash (for bark lice, etc.), two pounds of potash to five gallons of water.

Sulphide, or sulphuret, of potassium (for gooseberry mildew) simple solution in water of $\frac{1}{4}$ to oz. to the gallon.

Insect powder (for slugs, cabbage worm, etc.). (1) In solution in water, one oz. to three gallons (2), or it may be dusted on plants with little bellows, in dry powder.

Carbolic Acid Emulsion.—1 part carbolic acid to 5 to 7 parts of a solution consisting of 1 part soft soap, or 1 part hard, in two gals. water. This applied to affected trees destroys bark lice and the borers. It should be well rubbed upon the parts attacked.

Carbolized Plaster.—A mixture of carbolic acid and land plaster, 1 pint of the former and 50 lb. of the latter. A remedy against flea beetles.

Tobacco.—The refuse from cigar manufactories answers the purpose. A strong solution added to one gallon water destroys plant lice and flea beetles.

Alkaline Wash.—A strong solution of washing soda mixed with strong soap until about as thick as paint. Applied to the trunk of trees destroys the borers, and gives a healthy vigorous tone to the tree.

Hellebore.—Obtained from the powdered roots of a plant (*Veratrum album*). May be applied dry or as liquid 1 oz. to 3 gals. water. Excellent against currant worm and cherry slug.

Ammoniacal solution of copper carbonate.—Copper carbonate, ammonia and water. Dissolve 3 oz. copper carbonate in 1 quart ammonia, and when about to use dilute to 22 gals. Some use more water (28 gals.) Used to destroy mildew and apple scab. In the latter disease it has been very successful.

Pyrethrum.—Made from the powdered flowers of the genus pyrethrum, a plant of the sunflower family. It should be fresh, and hence should be kept in closed vessels. Used in dry form, 1 part pyrethrum, 5 to 8 parts flour; or liquid 1 oz. in 3 gals. water. A good remedy for cabbage worm.

A MICHIGAN PEAR-GROWER'S EXPERIENCE.



THE first mistake I made was in planting some varieties in which there is no profit for me. The next was in not planting dwarfs deep enough, nor keeping them headed back properly, and in earlier years in not being prompt to cut out the blight. Another was in planting varieties on soil not adapted to them. My experience and observation is, that there are but few varieties which, if planted on soil suitable for them will not be successful and profitable. Usually a strong, clayey soil is best for pears, but there are a few varieties that do well on the lighter soils, if kept well fed and cultivated. Of these there are the Bartlett Howell and Louise Bonne. It will not pay to plant Duchess, Anjou or Sheldon on any but strong, fairly heavy soil.

The ground should be well-fitted before planting, by being worked very deep by the use of a subsoil plow. Make it rich with fertilizers, if it is not so naturally, and work or underdrain it so that no water will stand on the surface very long after heavy rains. I have an orchard of 1,000 trees, most of which are twelve years old, and it has been thoroughly cultivated every year during that time, except a portion of it that was left in grass for two years as an experiment, which was very unsatisfactory. The past season I had but one tree that showed signs of blight, while trees within three miles of my place, standing in sod, were nearly ruined the past two years.

The standard pear needs but little pruning, but cut back nearly two-thirds of the young growth of dwarf trees. If this is not done, and they are not planted deep enough, they will become a sort of half standards, and they will get top-heavy and tip over.

The past season my pears were sprayed thoroughly with the Bordeaux mixture before they blossomed or leaved out. After the fruit set, I sprayed three or four times more, at intervals of a week or two, according to the weather. In the later sprayings I put in Paris green at the rate of 1 lb. to 200 or 300 gals. of water, to destroy the codling-moth and the curculio.—*J. N. Stearns, to the Michigan Horticultural Society.*

SUMMER PRUNING GRAPES.



THE time to commence is when the young shoots are six to eight inches long, and as soon as you can see all the young bunches of the embryo fruit. We pinch with thumb and finger just beyond the last bunch and the next leaf. If the shoots are not sufficiently developed to show their condition (the setting of the fruit) we pass them by and go over the vine again after a few days.

This early pinching of the young shoots has the tendency to throw all the vigor into the development of the young bunches and the leaves remaining over the shoots, which now develop with astonishing rapidity. It is a gentle checking and leading the sap into other channels—not the violent process which is often followed, long after the bloom, when the shoots have so hardened that the knife must be used, and by which the plant is robbed of a large part of its leaves to the injury of both fruit and vine.

Let anyone who wishes to satisfy himself summer-prune a vine according to this method and leave the next vine until after the bloom; he will soon be convinced which is best. Since I first practiced this method, now about twenty years, it has added at least one-third to the quantity and quality of my crop and is now followed by most of the intelligent growers of my State.

The bearing shoots all being pinched back we can leave the vines alone until after the bloom, only tying up the young canes from the spurs, should this become necessary. When they have bloomed the laterals will have started from the axils of the leaves on the bearing shoots. Then go over the vines again and pinch these back to one leaf. This will have a tendency to develop the remaining leaf very rapidly, enabling it to serve as a conductor and elevator of sap to the young bunch opposite and shading that as it becomes fully developed. The canes from the spurs, which we left unchecked at the first pinching, and which we design to bear fruit the next season may now also be stopped or pinched back when they are about three feet long, to start their laterals into stronger growth pinch off all the tendrils unless where they serve as supports to the young growth. This is a very busy time with the vine dresser and upon his close attention and diligence now depends in a great measure the value of his crop. A vast deal of labor can be saved by doing everything at its proper time.—PROF. HUSMANN, in *Vineyardist*.

PLUM KNOT ACT IN NEW YORK STATE.



R. S. D. WILLARD, who was appointed by the New York Horticultural Society to draft a bill for the destruction of black knot, sends a copy of the Act, which has now passed the Assembly, and will become law in New York State. We have not room here to give it in full, but will give an outline of it.

Section 1 makes it unlawful for any person knowingly to keep on his place any plum or cherry trees affected with black knot, and makes it allowable for any one to enter upon his premises and destroy the affected part, or parts, of any tree.

Section 2 provides that the mayor of any town or city where such disease exists, may appoint three competent freeholders as commissioners, and section 4 makes it the duty of such commissioners, or any one of them, with or without complaint, as soon as it comes to notice that the disease black knot exists, or is supposed to exist, within the limits of any town or city, to examine without delay the trees supposed to be affected, and, if the disease is found to exist, to place distinguishing marks upon the affected parts, or, in case the commissioner or commissioners judge that any tree should be entirely removed, they must girdle such tree and give a written notice to the owner containing a statement of the facts, with the order to effectually remove and destroy by fire the part, or parts, of such trees so marked, and entirely destroy every tree which has been girdled, within ten days from the date of the notice above required, such order to be signed by the three commissioners, or by any two of them.

Section 5 provides that whenever any person refuses to comply with the order, the commissioners are to carry out the directions of the order and remove and destroy by fire every tree, or part of a tree, so girdled or marked, the expense to be charged to the town or city.

Section 6 specifies the penalty for not carrying out the order. The person neglecting or refusing to carry out the order, shall be guilty of misdemeanor, and be punished by a fine not exceeding \$50, or by imprisonment in the county jail not exceeding fifteen days, or both, in the discretion of the Court, and any Justice of Peace of the town or city in which the offence shall be committed shall have jurisdiction thereof, and all the fines shall be turned over to the mayor of said town or city, to be placed by him in the contingent fund of said town or city.

Section 7 allows the commissioners \$2 a day for their services, in addition to all other reasonable charges or disbursements.

The Act is to take effect immediately.

As before stated, our own Act on Plum Knot is useless, and must be remodelled. Let everyone come to our next meeting fully prepared to discuss this important subject.

The Garden and Lawn.

FANCY GOURD BASKETS.



O you know how gourds can be made into odd flower vases, fern pots, etc.?" said a lady recently. She showed two fancy ideas, from which our artist has made sketches. The lady mentioned, said that she took some apple or cherry boughs of odd shape and wired them together in a sort of a cradle and then fastened the gourd in securely, and painted the whole with gold and silver bronzes from Mills & Richardson Co., of Burlington, Vt., then decorated with a delicate ribbon. Of course it looked neat without the flowers. Before putting in the flowers she lined it with tinfoil, without a joint, to prevent the moisture from leaking through, filled it with sphagnum or moss, and wetting it, stuck the flowers in on their own stems, with a few bits of tradescantia, which rooted and grew. As fast as the flowers withered she replaced them with others, and so kept a fresh boquet in a decidedly odd and ornamental vase.

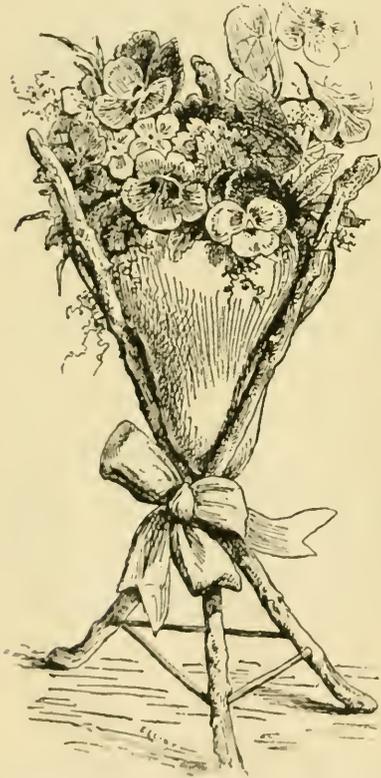


FIG. 38.—GOURD FLOWER VASE.

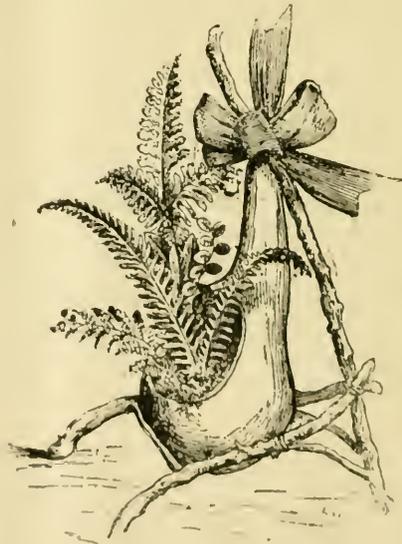


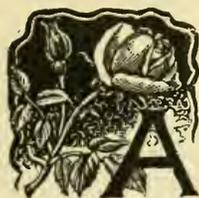
FIG. 39.—GOURD FERN VASE.

The fern vase was a large Hercules' Club gourd, arranged in the same manner, lined with tinfoil, in which the ferns were planted in soil, just as they came from their native woods. She made quite a number in odd varieties, and after filling them sent them as presents to friends. The styles which ingenuity can produce is almost without limit. An assortment of gourd seed will produce all sorts of odd shapes and sizes. They should be planted in different parts of the garden, and will grow in almost any odd place where nothing else will succeed.

In making the baskets two or three can be combined in one group, one for live ferns and two for flowers. The old fashioned Dipper gourd and the Hercules' Club are the best for the larger vases. The latter will grow long and straight when it is made to rest at the bottom on something and by its own weight forced to grow crooked.

The gourds form a numerous family, and are exceedingly dissimilar in character. The plants are useful for covering old trees, arbors, fences, and for summer screens of any kind. The culture is the same as for melons and squashes; the seeds must not be sown until the weather is warm and settled.—*Vick's Monthly*.

SOME VALUABLE ROSES.



AMONG the many varieties of recent introduction, the following are a few of the greatest promise, as noted while in flower last season.

Mrs. Degraw (Bourbon). Somewhat resembling Appoline, but a more abundant bloomer, more compact and dwarf in growth, and quite as hardy.

Clothilde Soupent (Hybrid Tea Polyantha). This is quite a novel variety, being a cross between the Tea and Polyantha classes, color pure white, deepening to rose in the centre, will be valuable either as a pot or bedding variety, it will be found hardy.

Snowflake (Tea). Said to be identical with Marie Lambert, produces an abundance of pure white flowers all summer, a splendid pot variety.

Meteor (Hybrid Tea). One of the finest hybrids yet introduced, dark velvety buds of great substance, can be wintered out with protection, makes a good garden rose, and is excellent for pot culture.

Waban (Tea). A deep pink sport from Catharine Mermet, but holds its color better than that variety, and fills a place long felt as a florist's forcing rose.

Madam Georges Bruant (Hybrid Rugosa). A cross between Rugosa and Sombrenil, and retaining in a great measure, the vigorous habit and beautiful rugose foliage of the former, bears long pointed buds of the shape and color of Niphetos (white), said to be very hardy.

Duchess of Albany (Hybrid Tea). A red sport from La France, and seems to be quite as desirable as that very popular variety.

Hamilton, Ont.

WEBSTER BROS.

❖ The Kitchen Garden. ❖

CUTTING, BUNCHING, AND SHIPPING ASPARAGUS.



THE green part, or that which grows above ground, being all that is eaten of asparagus, the more green there is the better price it will command in market. For the south and early cuttings it may be cut when two to three inches above ground. But for near-by and later, it should have from four to six inches of green stem, and be cut low enough to leave some white on, as the white part of the stalks will not shrink or draw up and loosen the bunch. The bunches should be from eight to nine inches long, and four and a half across the butts. The asparagus should be sorted or culled, leaving all broken and small sprouts, which can be bunched by themselves and sold as culls. The heads should be all placed evenly at the top, and the butts cut off squarely, using great care in handling not to bruise nor injure the heads, which soon ferment and decay. The heads should be kept dry, as moisture causes decay.

Good, strong Japan Raffia is the best to tie with ; and it is necessary to use a box or a bunching machine, so that the bunches may all be of a uniform size, and tied so tightly that they will not fall to pieces in handling. The best knife for cutting is a carpenter's thin firmer gouge, one and a half inches wide, nearly flat, and the thinnest that can be obtained, ground on the convex side or back, about one inch from the end, which should be rounded off on the inside to prevent them from injuring sprouts near by. Take the sprout between the fingers of one hand and run the knife close to the sprout, the concave side next to it. Tip the handle away to give it the proper slant ; shove down until the cut is made, and then pull the sprout. After cutting and sorting, take a convenient number of sprouts by the upper ends, and rinse the bottoms in clean water to free them from dirt, taking care not to wet nor bruise the heads. Then put them in the buncher, keeping the heads all up even against the stop. Lay them straight, and when there are the required number to make a bunch, press down lightly, but not hard enough to crush them. Put a tie around them three inches from the top, and another four inches below that, making the knots secure. With a sharp knife cut the butts square and even. To keep them until ready for shipping, set on wet grass or moss, in the shade.

Crates for shipping should have two ends and a middle piece, each twelve inches wide, eighteen inches long, and about three-quarters of an inch thick. The bottoms, sides and slats are twenty-eight inches long. Nail on the bottom

boards close together ; have side boards six inches wide, and put slats on the rest of sides and top, leaving broad interstices between them for ventilation. Put in enough wet grass or moss to pack down two inches thick ; stand the bunches butts down on the moss, tightly, leaving the heads about one inch below the slats. When the crate is full, crowd some wet moss all around, to prevent shifting during transportation.—*American Agriculturist*.

ASPARAGUS BUNCHER.

The accompanying engravings of an asparagus buncher may be of special interest to some of our readers at this season. They are copied from "Parks and Gardens of Paris," Robinson.

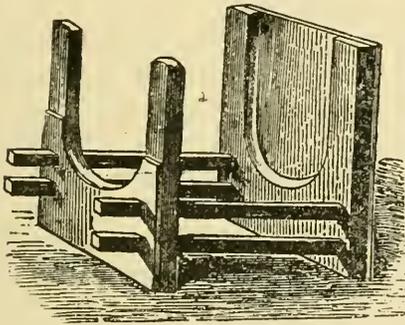


FIG. 40.

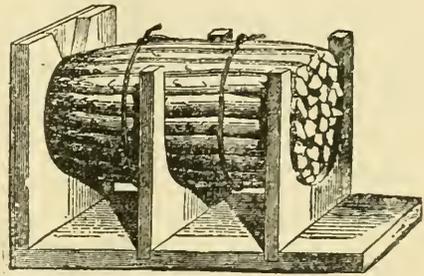
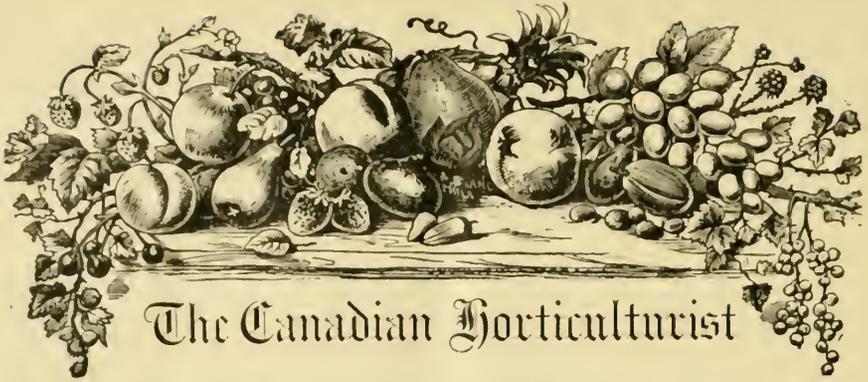


FIG. 41.

EARLY WATERMELONS.—After having tried a simple experiment on having early watermelons, I will offer my plan to your readers, feeling that it may be of benefit to some. Take tin cans (oyster or salmon) and heat them hot enough to melt the solder ; then remove the tops and bottoms, and also open the joints on the sides. Tie a string around the cans to hold the edges together, and set on a plank, that they may be moved out on sunny days, or in a warm, dry place, where they will be protected from the cold, and fill with dirt. Plant the seed in the cans, and give them plenty of air and light. When frost is over, take to the field, open a hole in the hill and place the can in it. Then cut the string, remove the can by pressing open, and the plant will grow off as rapidly as if first planted in the hill. Have rows ten or twelve feet apart and hills ten feet apart. Thin plants to two in a hill ; if attacked by bugs, dust them with ashes. By this means melons may be had very early.—A. A. SUTTON, in *Farm and Home*.



SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

NOTES AND COMMENTS.

BLANK FORMS for renewal of membership fees to our Association have been sent out, in order that all should be reminded in time to secure a share in our plant distribution. In some cases these have been quite unintentionally sent to persons who had just renewed, but whose names had not yet been entered. We hope any such persons will pardon the almost unavoidable oversight.

THE FLOWERING THORNS.

The Flowering Thorns are among the most highly prized of small lawn trees. They grow only from ten to fifteen feet in height, are compact and erect, but branching so as to form a good head, and late in spring cover themselves with blossoms. The foliage is handsome and abundant, and the trees at all times appear to good advantage. The most highly prized of the thorns are the common Hawthorn and its varieties, especially the Double White, the Double Scarlet and the Double Red. These varieties planted together in a clump make a brilliant show in their blooming season. Another fine variety of the same species is the Parsley-leaved thorn, the leaves being finely cut and crimped, giving it a novel appearance; the flowers are white, single.

Whoever has seen a fine specimen of the Cock-spur thorn in bloom, as it grows in our thickets and fence corners, has had a sight to delight the eye. A variety of this species is cultivated, having narrow, bright green, glossy leaves, superior to those of the wild tree, and blooming as freely, being literally covered with its single white flowers in its season: this is the Pyracantha-leaved thorn. Another variety of the same, is called the Glossy-leaved thorn. The flowers of all are pleasingly fragrant.—From "Trees for Small Places," in *Vick's Magazine*.

❖ Question Drawer. ❖

CLASSES OF CHERRIES.

SIR,—What is the difference between Duke, Morello and Bigarreau cherries, and what are the best varieties of each?
J. S. W.

Since the varieties of cherries have so multiplied, the old divisions have become less distinct; especially have the Hearts and the Bigarreaus shaded off into each others characteristics, and the Dukes and the Morellos. The main characteristic of the two former varieties is the large vigorous growth of the trees, as compared with the latter. In general, the Heart cherries are tender in flesh, and the Bigarreaus firm. Mr. Barry in his Fruit Garden classifies them thus:

Class I. Heart cherries. Fruit heart-shaped, with tender, sweet flesh. Trees of rapid growth, with large soft drooping leaves. Class II. Bigarreau cherries. Chiefly distinguished from the former class by their firmer flesh. Their growth is vigorous, branches spreading, and foliage luxuriant, soft and drooping. Class III. Duke and Morello cherries. Very distinct from preceding. Trees of smaller size, and slower growth; leaves thicker, more erect, and of a deeper green. The fruit is generally round, and in color varying from light red, like Belle de Choisy, and dark brown, like Mayduke. The Dukes usually, have stout erect branches, and some of them, like Belle de Choisy and Reine Hortense, are quite sweet. The Morellos have slender, spreading branches, and, invariably, acid fruit. Suitable for dwarfs, and more hardy than class I and II.

According to Nicholson's Dictionary of Gardening, the Dukes and Morellos are derived from the Dwarf cherry (*Cerasus caproniana*), and the Bigarreaus from the tall Gean (*Cerasus avium*), both natives of Great Britain.

Of the Hearts, we have had best success with Black Tartarian, Elton, Governor Wood, and Knight's Early Black; of the Bigarreaus, with Napoleon Bigarreau, Elkhorn, Great Bigarreau and Windsor; and of the Duke and Morellos, with Early Richmond, Empress Eugenie, Montmorency, and Reine Hortense.

BEST PEARS.

SIR,—Which are the best varieties of pears for (1) Summer, (2) Fall, (3) Winter?
J. S. W.

The following are reliable kinds for profit. (Summer), Beurre Giffard, Bartlett, Clapp, Doyenne Boussock (Fall), Duchess, Howell, Sheldon, (Winter), Anjou, Lawrence, Josephine de Malines.

THE TREE CRICKET.

SIR,—Enclosed you will find a cherry slip, with some eggs. I found several of them on my trees, and would like to know, through the CANADIAN HORTICULTURIST, what they are?

W. S. SHORT, *London, Ont.*

The twig of cherry tree sent us is full of eggs of the Tree Cricket (*Cecanthus niveus*). The insect will do very little injury to the cherry tree, but it is one of the most troublesome insects in the raspberry plantation.

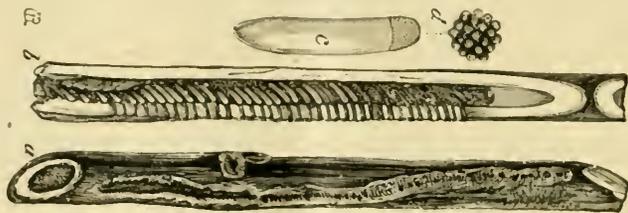


FIG. 42.

Towards the end of the summer the female moth, desirous of placing her progeny in a safe place, chooses the young and tender wood of the plum, cherry, or other trees, and more particularly the raspberry bushes, in which to deposit her eggs. By means of a long ovipositor, she is able to place them in the young



FIG. 44.

wood in long rows, each standing obliquely, as shown in Fig. 42. The mature insect, with its ovipositor, is shown in Fig. 44.



FIG. 43.

The young insects hatch out about midsummer and much resemble the perfect insect, except that they have no wings. They do no further injury to the raspberry bushes, their food being plant lice and ripe fruit. About the only remedy is careful attention during the winter in cutting off and burning the injured branches.

USE OF COAL ASHES.

SIR,—I sifted coal ashes in my cow stable, as an absorbent. What effect will it have upon the manure as a fertilizer?

G. W. HODGETTS, *St. Catharines, Ont.*

Coal ashes are a very good absorbent, and, so far as we know, would not have any injurious effect, used as our correspondent proposes. Coal ashes contain no great elements of fertility in themselves, but they have a mechanical effect upon the soil, which seems in some cases to be favorable to the growth of vegetation.

KIEFFER PEAR.

SIR,—What was the conclusion arrived at with regard to the Kieffer pear at the meeting of the Western New York Horticultural Society lately held at Rochester?

W. H. HOPKINS, *Burlington, Ont.*

There was really no conclusion reached by the Society as a whole regarding the Kieffer pear. A great many opinions were expressed, but very few spoke favorably of it. Some, however, claimed that it was one of the most profitable pears they had grown, on account of its great productiveness and its beautiful appearance, which commanded a ready sale for it in the market. All agreed, however, in condemning the flavor as being inferior. Its chief use is for canning, and for this purpose it is highly commended.

BEST PEARS.

SIR,—What four kinds of pears would you advise me to plant in an orchard? Last year I planted one hundred Kieffer, some Duchess and Doyenne Boussock.

W. H. HOPKINS *Burlington, Ont.*

This is a question which it is impossible for any one to answer decidedly. We might say what ones we would prefer to plant in our own orchard, but to say what ones would be best in another's orchard, in different circumstances, would be an impossibility.

Would the readers of our journal who are experienced in pear culture please send in to the editor, by post card, the names of the four varieties they have found to be the most profitable.

BEST PEACHES.

SIR,—Will you please give me a list of the best peaches for home use and for market.

J. S. WARREN, *Vancouver, B. C.*

Six good peaches are Early Rivers, Hynes Surprise, Foster, Early Crawford, Wager, Steven's Rareripe. There are many other good varieties. It is impossible to say which are the best for any one planter, without knowing a good deal about the conditions.

Mr. A. M. Smith, one of the most experienced fruit growers of the Niagara district replies to the question as follows :—*For home use*, Alexander, Mountain Rose, Early Crawford, Late Crawford, Early Barnard, Old Mixon. *For market*, Alexander, Early Rivers, Early Crawford, Bouslaugh's Lake, Wager, Steven's Rareripe.

❖ Open Letters. ❖

BLENHEIM ORANGE APPLE.

SIR,—The letter published on pages 72 and 73 of the March number of the CANADIAN HORTICULTURIST stating, in effect, that the Blenheim Pippin apple is not worthy of cultivation in this province must have surprised a great many apple growers, as this variety is well-known in many sections, and regarded as one of the best in quality, as well as one of the most profitable for market. The article as much as says that the editor of this journal, the fruit committee who prepared the district fruit list, the president and directors of our Association, and all who speak on horticultural subjects at Farmer's Institutes should denounce this apple. I think, Sir, this would be a very serious mistake, for I am certain that hundreds of practical apple growers throughout the country are unanimous in their opinion that the Blenheim Pippin can be profitably grown for market.

The committee of the Fruit Grower's Association referred to was composed of P. C. Dempsey, A. McD. Allan and the writer, the majority of whom, *i. e.* the two gentlemen named, are as well qualified as any one can be to say what variety of apple can be grown in this province. The committee unanimously reported the Blenheim Pippin as profitable for cultivation in five of the thirteen electoral districts in Ontario, and this report was made after consulting with and obtaining the approbation of the directors of the said districts; who, in turn, before sending in their recommendations, consulted with from thirty to forty of the principal apple growers in their respective localities.

Since writing the foregoing, I have received a letter from Mr. F. B. Edwards, barrister, of Peterboro', who is secretary of the local Fruit Grower's Association of that town. In speaking of the Blenheim Pippin, he says: "We have grown the Blenheim Pippin for many years successfully, both as regards the growth of the tree and the quality of the fruit produced, and it has been a profitable variety. We have always regarded it as being, in many respects, our best apple. It has not been, by any means, a shy bearer, and for sale, it is always in demand before all others, excepting, perhaps, the Northern Spy; and, with those who know the apple, it is sold in advance of the latter variety."

THOS. BEAL, *Lindsay.*

THE SAUNDERS PLUM.

SIR,—In the January number of the CANADIAN HORTICULTURIST, Mr. Race claims to have found the original Saunders plum, and states that it is a late variety. Now this is not the case. The plum is an early variety. In the year 1883, I introduced the Saunders plum at our summer meeting. We then could only get a few of the most inferior specimens, the crop having been gathered and marketed, and it was with difficulty that we kept them for exhibit at that meeting. Mr. Morris, of Messrs. Morris, Stone & Wellington, came down and I went with him to Mr. Ahren's place, and helped him to cut buds from the original tree. Last year, when I went to get buds, the fruit was over ripe; I have not the date. One of the most important claims for this plum is its earliness. It is the earliest plum I have ever seen, hence its wonderful market value.

P. C. DEMPSEY, *Trenton, Ont.*

THE BLENHEIM ORANGE APPLE.

SIR,—I have two Blenheim Orange trees, fifteen years, from nursery. One, on southern aspect, bears well and large apples. The other, on northern slope, with windbreak to west, bears better and larger fruit. Both trees have borne well for some years—don't remember how many—but the last two seasons they had wonderful crops. As an eating and cooking apple, it is about perfect, and keeps till about the New Year.

GEO. R. PRESCOTT, *Galt, Ont.*

THE CRANDELL CURRANT, AND THE JAPANESE WINEBERRY.

SIR,—I see in the January number of the *HORTICULTURIST*, Mr. A. G. Heaven is afraid that his "Crandell Black Currant" is the old yellow flowering currant. Two years ago this spring I bought some bushes from a nurseryman in the States. Last year they fruited, and some of the branches were so heavy with fruit we had to prop them. The first currants on the branches were large, some of them as large as a Clinton grape, growing smaller towards the end of the bunch. Had I trimmed my bushes, I think very likely I would have had still more and larger fruit. I let them grow as they would, because I wanted to propagate from them. As it was they were admired by all who saw them. At the time I bought the Crandell Currant I also bought the Japanese Wineberry; it fruited last year, and was very much admired. The fruit is beautiful, and is as good to eat as it is to look at. It bore quite as heavily as I expected for the first year. It I also let grow as it would in order to propagate from it.

H. J. BRYAN, *Mohawk P.O. Ont.*

RIBSTON PIPPIN.

SIR,—I see in the appendix to the last year's report that the Ribston Pippin apple is placed where it ought to be, although, in all the discussions it seems to be almost ignored. I find it the most regular bearer of all the sorts I have, and it can't be beat for quality, and as to keeping, if it is gathered early, not left to ripen on the tree (like the pears) I can keep it well until March or April. I gave Mr. Allan a few years ago some good ones, the latter end of April. I have kept them until June. The Ontario is classed much too high as a dessert apple.

I find my question on the apple scab asked last April, brought out some good answers in both April and May numbers of your journal, and it was taken advantage of by a number of fruit-growers, but, as it happened, the fruit was very free of scab last season.

WALTER HICK, *Goderich.*

PLANTS TESTED IN ONTARIO COUNTY.

Sir,—This is a report of plants, trees, etc., from Association Swazie P. G. is a better bearer than Golden Russet.

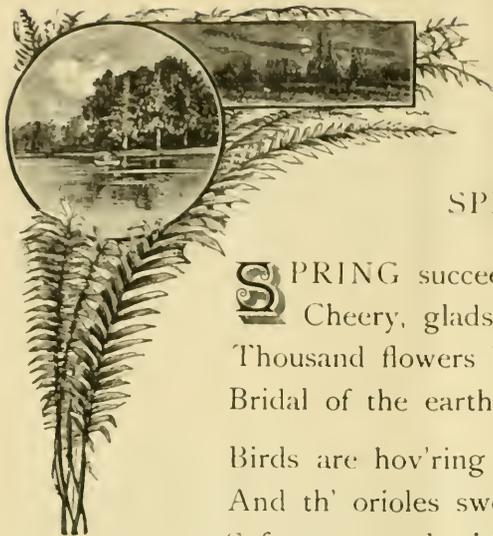
Salem, Brighton, Burnet, Prentis, have done well and been free from disease; Burnet improves with age; also, Lindley, Agawam, Worden, and Champion, have done well in all respects—little difference in ripening. Glass Seedling Plum gave its first good crop last year is healthy. Saunders' raspberry is hardy and bears well. The Gregg and Hilborn do well. This is hard limestone soil, not very rich, being burnt by forest fires. Trees ripen their wood well, and are hardy. Grapes ripen early.

WM. E. TAYLOR, *Beaverton.*

LITTLE KNOWN FRUITS.

SIR,—I send you by mail some scions of some extra good varieties of plums, which are both heavy croppers and of first quality. They are called the Rocky Mountain and the Greely. I also send you some cuttings of the White Holland currant. This is a good variety, the heaviest fruiter, I think, I ever saw, besides being of good quality. I also enclose you some scions of an apple called "Bon Homme," of which I know nothing, only that it comes recommended as a good winter apple.

A. A. ROLPH, *Orono.*



SPRING.

SPRING succeeds to winter's day,
 Cheery, gladsome month of May,
 Thousand flowers beneath our feet,
 Bridal of the earth! 'tis meet.

Birds are hov'ring on the wing,
 And th' orioles sweetly sing,
 Safe ensconced within her nest
 Mother bird seems quite at rest.

Leaves are bursting out anew,
 Kiss the sun and sip the dew ;
 Gentle rains unseal your case,
 And the winter all efface.

Come you long imprisoned bee,
 Spring has come and sets you free ;
 Flowers are waiting on your call,
 Pollen, nectar, dew and all.

Resurrection of the year !
 Nature, her new drapery wears ;
 Cannot man believe and trust
His resuscitated dust ?

Owen Sound.

MRS. DR. MANLEY.



SCOTT'S WINTER.

THE
Canadian Horticulturist.

VOL. XV.

1892.

No. 6.



SCOTT'S WINTER APPLE.

IN a list of hardy apples, suitable for planting in the cold north, which appeared in the CANADIAN HORTICULTURIST for the year 1888, page 220, Dr. Hoskins, of Vermont, gave the following for winter, viz., Scott's Winter, McIntosh Red, Wealthy, Fameuse, Bethel of Vermont.

This list, at that time, met with some adverse criticism, but, although some varieties have since been deemed worthy of being added to the list, and one, the Fameuse, seems scarcely worthy of retaining on account of the scab, the majority of them have been gradually gaining ground in the confidence of the planters who live in the less favored regions of Canada

The Scott's Winter seems especially worthy of notice. The variety originated in the State of Vermont, a portion of which is as bleak and cold as our most northerly apple growing districts. The fruit is not large, averaging about the same as the Fameuse as it is grown in Ontario, or the Winesap, and it is about as handsome as the latter. It is roundish in form, with one shoulder rather prominent, a darker red than is shown in our colored plate, which, indeed, in other respects scarcely does justice to the beauty of the apple. The skin is partially speckled with rather prominent dots over its whole surface. The quality is only fair, yet, when fully matured, it is a good dessert apple, while for cooking

purposes it is excellent. It keeps in good condition till about the end of April. The tree is a vigorous and rather upright grower, and bears abundantly every year.

Samples of this apple were first sent to the writer some three years ago, by Mr. R. W. Shepherd, of Montreal, and again last February. They came in excellent condition, and so commended themselves to our notice that we have decided to illustrate this number with a colored plate of this variety, as a frontispiece.

In sending these samples, Mr. Shepherd wrote as follows: "I have had many enquiries regarding this hard winter apple, and take upon myself to forward to you by mail to-day a box containing three specimens of the fruit. You will receive them, I hope, in the same good, sound condition which they leave me to-day, 23rd Feb. The specimens are fair, average size, and, up to the present, have been kept in a barrel in my town house basement-cellar, in which basement a hot air furnace has been actively burning all winter, there being only a lath and plaster wall between it and the cellar, so that you can see there were not any special advantageous conditions to preserve the fruit in good condition.

The Scott's Winter will average in size (most seasons) as large as Fameuse grown here. The trees from which these specimens were taken are about fifteen years old. In the same orchard, at Como, are Winter St. Lawrence, Canada Baldwin, and Fameuse, and there are none more healthy or prolific than the Scott's Winter. As to hardiness, I believe it surpassed either Canada Baldwin or Fameuse in this climate, and ranks next to Duchess and Wealthy.

From the standpoint of a fruit grower of Quebec Province, Scott's Winter, in my opinion, is, by far, the best late winter apple to grow, and its handsome appearance and freedom from spotting make it the most profitable winter variety and should be recommended where less hardy varieties fail.

Mr. A. A. Wright, of Renfrew, Ont., writes as follows regarding this apple: Fruit growers in the cold north labor under great disadvantages; only the very hardiest fruit-bearing trees can be grown with anything like success. Among apples, Scott's Winter holds a very prominent place, in consequence of the cold-resisting properties of the tree, as well as for the beauty and good-keeping qualities of its fruit. It is not of superior quality, but its appearance is so much better than the great majority of apples, that it sells readily, and is, consequently, a very remunerative crop. In autumn, when the tree is laden with fruit, it is really a sight to behold, and at a distance looks almost like a ball of fire, so highly colored is the fruit. It is not, however, the most desirable apple for the northern fruit grower, the Wealthy being, in many respects, its superior.

Mr. G. C. Caston, of Craighurst, writes: The Scott's Winter apple seems quite hardy here, and would, no doubt, succeed in all the northern parts of the province where any other apple will grow. It has the advantage of being a winter variety. It is of medium size, well colored, a very good cooking apple,

but does not rank high for dessert, nor does it market as well as some of the larger red apples. Yet, it will keep well until spring, a time when any fair to good red apple will sell well. Altogether, it is worthy of trial for the colder districts.

In reply to an inquiry just made, Dr. Hoskins writes: In reference to Scott's Winter apple, I probably cannot do better than to copy what so expert a pomologist and experienced fruit-grower as Secretary Gilbert of the Maine Board of Agriculture said of it, not long since, in the *Maine Farmer*: "Full medium in size, very heavy, with small seed cavities. Fresh, crisp, juicy, and melting; and, while quite acid, yet rich, and peculiarly agreeable for eating out of hand. Such a late-keeping iron-clad—if it does as well here as in its native State—ought to be in all the orchards throughout Northern Maine." Prof. Budd says it is rather hardier than Wealthy in the north western states (east of the Rocky Mountains). My own experience with it for over twenty years is every way favorable. I planted a considerable orchard seventeen years ago, half of Wealthy and half of Scott's Winter, set alternately in the rows. The Wealthys have nearly all borne themselves to death, while the Scott's are all perfect. It yields as many merchantable apples as Wealthy, without the tendency to over-bear and break down. The wood is remarkably strong to resist both the wind and the weight of crop. I am still planting it as my leading apple for profit, here. In a milder climate I might prefer something else, as better known in the great markets, yet, in 1890, my whole crop off it brought me \$4 per barrel at the orchard. I hope we may find an equally good apple and long-keeper among the Russians, but I hardly expect to do so.

HOW TO GROW QUINCES.

To be successful with quinces a deep, strong soil should be selected, which has a good drainage. It may be necessary in some cases to put in tile to obtain this result. Then run the sub-soil plow through at least 15 inches deep. The trees should be set in the spring, 10 by 10 ft. or in rows 12 ft. apart and in trees 8 ft. from each other in the rows. Especial pains should be taken to have the trees of good vigor, while the Orange or Champion varieties are to be preferred. Manure the ground heavily with rich stable manure, favoring the trees and spreading it broadcast. Afterward manure well annually. Stable manure is always the best and should be spread on evenly. Never stop manuring until you get 60 quinces per bushel, which is possible in most instances. Prune the trees from the beginning so as to have them models in shape, but use only the knife and never too much at one time. They give the best satisfaction when pruned so they will branch low. Borers must be specially guarded against. Examine the trees at least twice a year, using a corded knife, and soap about the base. Leaf-blight is another disease with which many trees are covered. To stop it begin early in the season with the Bordeaux mixture and repeat the spraying once in three or four weeks until August. This will save the foliage and secure good ripe fruit. Full directions for applying this mixture are given in one of the bulletins issued by the Storrs, Ct., Experiment Station.—P. M. AUGUR, *Connecticut State Pomologist, Farm and Home.*

GARDEN AND ORCHARD.

AN AMATEUR'S EXPERIENCE.



FOR over twenty years the writer of these rambling notes has been a member of the Fruit Growers' Association. During that period the Annual Reports issued by the Society, Beadle's *Fruit, Flower and Kitchen Gardener*, and later on the CANADIAN HORTICULTURIST, coupled with a number of nurserymen's illustrated and descriptive catalogues, became valuable aids in developing a taste for floral and horticultural surroundings. Like the most of new beginners my principal fault arose from going in for too many varieties, and it goes without saying that my ventures with the "latest" were not always crowned with success. Failures there have been—many of them in that line—still these rumors only served to strengthen the determination to succeed, exercise greater caution in my selections, and never to waver in a proper appreciation of what is left of the hardy, good and true.

Apples.—There are about forty different kinds in my orchard and garden. After studying the matter thoughtfully, I have come to the conclusion that the following, in the order named, are hard to beat in this section: *Summer*—Red Astrachan, Yellow Transparent, Early Strawberry, and Benoni. *Autumn*—Duchess of Oldenburg (the queen of apples in its season), Red Beitigheimer, St. Lawrence, Alexander, Fall Pippin, Maiden's Blush, Kentish Fillbasket, and Keswick Codlin. *Winter*—Blenheim Orange, Ontario, King of Tompkins, American Golden Russet, Ribston, Wealthy, Hubbardson's Nonsuch, Northern Spy, Pewaukee, Baldwin, Peck's Pleasant, and Grimes' Golden. Early Harvest and Fameuse spot badly. The former was cut down last fall; the latter, along with Early Joe, Colvert, Pomme Grise, and several others, will be converted by grafting into Blenheims.

Tetofskys, with the exception of one specimen tree, I topworked with Baldwins. Gravenstein, Greening, Swaar, Wagener, and Spitzenburg are too tender for these parts. Ben Davis and Hawthornden are great croppers, but the fruit is not much in demand. Chenango Strawberry, Mother, Swazie P. Grise, and Yellow Belleflower are home favorites in their respective seasons, though, as a rule, poor market sorts. Grand Sultan and Princess Louise have not fruited with me yet. Hyslop and Transcendant Crabs make splendid cider.

Next in order come the *Pears*. At one time my list called for twenty-three varieties; nearly one-half of which, like the "Flowers o' the Forest," are a' wede away. The remainder are placed according to merit: Clapp's Favorite, Bartlett

(topworked), Flemish Beauty, Louise Bonne (small but prolific), Beurre D'Anjou, Brandywine, Duchess d'Angouleme, Ananas d'ete, Beurre Diel, White Doyenne, and Elliott's Early. Kieffer keeps growing; I await its first fruiting with considerable curiosity. I trust there is no disappointment in store for me. I am used to that, however. Flemish Beauty and White Doyenne are liable to spot and crack. The former was substituted for Goodale at time of distribution. A friend close by received the latter, and it fruited and pleased him well until the tree was blown down in a wind storm.

Plums.—Away back in the seventies, this portion of South Perth was highly favored by abundant crops of this useful, and withal, delightful, fruit. The scene is changed. Instead of our thrifty matrons having to look in vain for a ready and profitable outlet for the heavy yields from their Lombards, Green Gages, Washingtons, Bradshaws, etc., which were, for want of purchasers, too often allowed to rot upon the grounds, they have now—in the most of cases—to depend on distant marts for sufficient of the same to meet their home requirements. The terribly severe winters and late frosts of 1877-'78 played sad havoc with the more tender sorts of apples, pears, and plums, and what remained of the last, excepting a very few, fell an easy prey to black knot and the curculio. Going over the roll call lately shows that Pond's Seedling, Imperial Gage, Prince's Yellow Gage, Quackenbos, Victoria, and some Lombard Seedlings, are still to the fore. Possibly an annual dressing each fall of lime, hen manure and hardwood ashes, has kept them in a thriving condition, aided, no doubt, by constant amputation of diseased parts and keeping a watchful eye after the mischievous little "Turk." The Saunders and Prunus Simoni have yet to make good their claims to favorable recognition. The Glass Seedling, however, is a conundrum to me. The same was heralded in by a great flourish of trumpets as hardy, productive, etc. True, nothing can be said against its hardiness; that is all right. But what about its fruitfulness? During these long years of hope deferred, it has never shown one specimen of its wonderful fruit. Perhaps, like the Northern Spy apple, it shows its moneyed value by age. If so, the Glass has considerable shortage to make up before it overflows with profit to the owner.

Cherries, particularly the Hearts and Bigarreau, have not the requisite stamina in them to withstand our chilling blasts and low temperatures. Black Tartarian, Napoleon and Yellow Spanish have been tried and found wanting. Early Richmond and Late Kentish are our mainstay for dessert and cooking purposes. Ostheim is doing well, and believe it will show its colors ere the "dog days" are over. Our locality is not suitable for the successful cultivation of quinces, peaches and apricots, consequently they are left alone by us to luxuriate along the sunny slopes of the Niagara peninsula.

Grapes.—Ah! who doesn't enjoy a bunch of this luscious fruit or a glass of excellent wine from the juice of the Clinton? This culture has been one of my hobbies, and my collection (amateur like, of course), is a pretty extensive one. Wilder, Lindley, Agawam, Merrimac, Salem, Martha, Creveling, Concord, Hart.

ford, Delaware, Isabella and Champion, formed my first investment. These were gradually supplemented by Burnet, Prentiss, Pocklington, Lady Washington, Worden, Brighton, Jefferson, Lady, Niagara, Moore's Early, Jessica, Vergennes, Moyer, and Mills. The first four of the Rogers came fully up to expectation; in fact, actually astonished the people living in this vicinity by their superior fruiting qualities. By degrees they became too much shaded by apple trees on either side of them, and had to be substituted and placed in a sunnier position, where they promise to repeat their former excellence. The Salem mildewed, and were rooted out shortly after they were planted. Have discarded Burnet, Isabella, Hartford and Creveling some time ago, and lately Pocklington and Lady, after several trials. If there is no improvement with Moore's Early this season, it will be numbered amongst the absentees hereafter. Martha, Delaware, Jefferson and Prentiss barely holding their own. I look upon Lindley as being the best red by long odds. Concord and Wilder still lead in blacks with us. About the whites, and especially the newer kinds, it is too soon to express a correct opinion regarding them. May do so later on. The vines are pruned and laid down in the fall, and usually have a sufficient covering of snow to protect them during the trying months of winter and spring.

Gooseberries seem to feel at home in this neighborhood. Downing, Houghton, and Smith's Improved seldom fail to produce good crops. Industry, Crown Bob, Ocean Wave, Pearl, and Whitesmith are, apparently, taking kindly to the change, and, from their first showing, evidently going to give a good account of themselves. So far they have been exempt from mildew.

Currants.—Fay and Victoria fill the bill nicely for wine and jelly. Cherry and White Grape are excellent table varieties, but there is not much money in either sorts. Lee and Black Naples will be dug up this fall if their fruiting qualities don't show to better advantage.

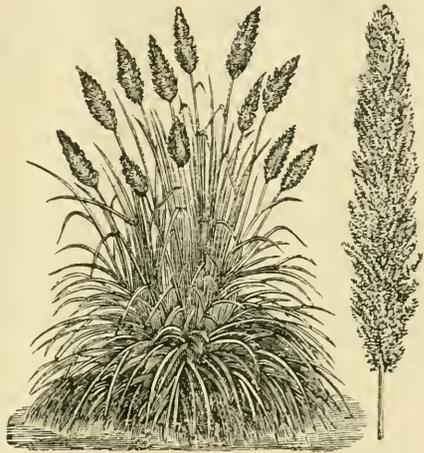
Raspberries.—Have tested most of the leading kinds, and now confine myself to the following Reds: Turner, Shaffer's Colossal and Cuthbert. Black Caps: Souhegan and Gregg. Yellows: Caroline, for hardiness and fruitfulness was considered a decided acquisition until Golden Queen entered the lists and carried off the coveted prize. How a plate of this delightful berry and Jersey cream would tickle the palate of an epicure!

Blackberries.—Taylor's Prolific and Kittatinny are not hardy enough. Lucretia Dewberry, and Russian Mulberry will probably be hoisted on to the brush heap before the summer comes to a close, as no good.

Strawberries.—It is natural to suppose some of the latest novelties would come in for a share of my attention. Col. Cheney, Jessie, Pine Apple, and Gandy's Prize, are having their innings at present, to be followed, in all likelihood, by something better in the near future. Jessie is a splendid berry, but a little shy. Have great faith in spraying the fruit trees with the copper carbonate; making preparations to give them an early application of these compounds this season. Ornamental trees, shrubs, hedges, roses, etc., may be briefly referred to in another article later on.

PAMPAS GRASS (*GYNERIUM ARGENTEUM*).

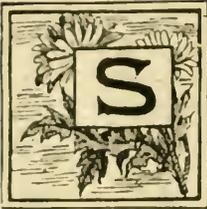
THE accompanying illustration represents a tuft of the beautiful plant, Pampas grass, which grows so freely in California. Although of a tropical character, it is almost hardy enough to endure our climate with a little protection. The genus comprises three species, of which this variety is the most desirable. It flourishes best on a light, sandy soil well enriched. In England they grow it out of doors in sheltered spots. The huge spikes of flowers attain a height of from six to ten feet. The leaves are linear, and from four to six feet in length. These blooms are cut off in the early part of the summer and preserved in a dry state for ornamental use in decorations. Unfortunately, this plant is not sufficiently hardy for the outdoor garden in Canada, but some of our readers may succeed with it by giving it protection in the winter. Mr. John McAinsh, of St. Mary's, wrote in the *CANADIAN HORTICULTURIST* for 1880, that he has tried growing the Pampas grass out of doors. He was successful for two winters, by carefully covering it with a box about a foot in height, without top or bottom. He filled the inside with pea straw and banked up the outside with earth.

FIG. 45.—*GYNERIUM ARGENTEUM*.

THE cabbage worm is very easily and cheaply disposed of by the application of Bubach, either in powder form or in spray. This remedy seems to be sure death to most caterpillars. The tent-caterpillar also yields when a few puffs of the powder are blown into the tent at the time when the enemy is in camp, night or morning. Plants which have recently been set should receive careful attention. Frequent stirring of the surface soil will directly benefit them by promoting their growth, and indirectly prove still more useful by keeping the land clean. The newly set plants are comparatively weak, and cannot make a vigorous growth in land that is allowed to become filled with weeds or grass. If there are vacant places in the strawberry beds, they can be filled if strong plants are at hand, the blossom stems removed, the transplanting carefully done, and the plants protected from the sun for a few days.

OUTLINE OF PLANS FOR USING FUNGICIDES AND INSECTICIDES FOR 1892.

FOR THE APPLE.



PRAY for the destruction of the spores of the apple scab and leaf blight, with sulphate of copper (blue vitriol), one pound to twenty-five gallons of water, or sulphate of iron (copperas), one pound to two gallons. For the destruction of the tent caterpillar, canker worm and bud moth, use the Bordeaux mixture, one-half strength, with Paris green, one pound to 150 gallons, just before the blossoms unfold, and for the same and the codling moth, as soon as the petals have fallen. Make a third application of the Bordeaux mixture and Paris green in about two weeks from the time the petals fall, should there have been heavy rains since the last application; then use the ammoniacal carbonate of copper, one pound to 50 gallons of water, at intervals of from two to four weeks, according to the weather, until the middle of August. We would recommend the trial of sulphate of copper, one pound to 500 and 800 gallons of water, after the middle of June. Should no rain occur after the use of any fungicide or insecticide, no further application need be made until it does rain, but if the interval has been long, spraying should immediately follow a heavy rain.

FOR THE PEAR.

For the pear scab, leaf blight and cracking of the fruit, and codling moth, the same treatment should be given as for the apple, except that no Paris green need be used until after the petals have fallen, and only two applications of that need be made. If the pear tree psylla should appear, spray the trees thoroughly with the kerosene emulsion, one part to twenty parts of water.

FOR THE PLUM.

We would advise the same treatment as given to the apple and the pear, for the plum leaf blight, black wart and the fruit rot. For the plum curculio, use the Bordeaux mixture, one-half strength, with Paris green, one pound to 200 gallons. One application of the ammoniacal carbonate of copper should be made after the middle of August, to prevent the rotting of the fruit and the leaf blight.

FOR THE PEACH.

To destroy the plum curculio, spray with the Bordeaux mixture, one-fourth strength, and Paris green, one pound to 200 gallons. For the fruit rot, spray with the ammoniacal carbonate of copper, one pound to 50 gallons of water. Try the sulphate of copper, one pound to 100 gallons of water, for the fruit rot.

FOR THE GRAPE.

Spray with the concentrated solution of sulphate of copper every part of the vines and trellis before the buds unfold. Just before the blossom buds unfold, spray with the Bordeaux mixture, one-half strength, with Paris green, one pound to 100 gallons. As soon as the petals have fallen, spray again with the same; then at intervals of about two weeks use the ammoniacal carbonate of copper, one pound to 25 gallons. Try the sulphate of copper, one pound to 500 and 800 gallons of water at the same intervals.

FOR RASPBERRY AND BLACKBERRY.

For the anthracnose of the blackcaps, and the yellow rust of the blackberry, use the concentrated solution of sulphate of copper, before the buds open. Then spray with the Bordeaux mixture one-half strength, or the ammoniacal carbonate of copper before the blossom buds unfold, and two or three times after the fruit has been gathered, at intervals of two or three weeks. The first disease attacks the canes principally, and more attention in spraying should be given to them than to the leaves.

FOR THE STRAWBERRY.

Spray with the Bordeaux mixture, one-half strength, and Paris green, one pound to 100 gallons, for the leaf blight and the "spotted paria," as soon as growth begins in the spring. Just before the blossoms open, use the Bordeaux mixture, same strength, *but no Paris green*. After the fruit has been gathered, Paris green and the Bordeaux mixture should be used if the bed or field is to be carried through another season.

FOR THE POTATO.

As soon as the larvæ of the potato beetle begin to appear, spray with the Bordeaux mixture, one-half strength, and Paris green, one pound to 100 gallons. Use the same mixture as often as they appear in sufficient numbers to be injurious. If the weather should be warm and moist, applications should be made at intervals of from one to three weeks after the vines have blossomed, of the Bordeaux mixture, one-half strength, or the ammoniacal carbonate of copper, one pound to 50 gallons of water, even if there are no larvæ present. The sulphate of copper, one pound to 500 gallons, should also be tried on a small scale to test its value.—*Hatch Exper. Station, Mass.*

BLACKBERRY.—The Snyder and Ancient Briton have the lead. Do not plant unless you decide to cover in winter, which will bring crops that will surprise the novice. The Ancient Briton is fully equal to the Snyder in size, quality, and quantity of fruit, and the canes are smaller, tougher, and easier to cover.—*Orchard and Garden.*

FRUITS TESTED AT MAPLEHURST.



HAVING one hundred acres devoted to fruit culture, and a very extended list of varieties under cultivation, some occasional notes may be of general interest to our readers.

Out of fifty varieties of strawberries which we have been testing the last two or three years, we find that very few prove themselves worthy of cultivation for profit.

On consulting our field notes, taken last season, we find the Bubach heading the list as the best market berry of the whole lot. It averages larger than any other variety, and, besides, is very productive. It is pistillate and, therefore, needs a staminate variety planted near. One of the great points in its favor is its power of enduring the drouth, which plays such havoc with the strawberry crop. Its chief fault is, that it is somewhat soft to carry to distant markets.

LITTLE'S NO. 10 compares favorably with the Bubach in size and productiveness. The fruit is large, conical, slightly flattened, with several depressions. The color outside is a deep red and glossy; the flesh inside is similar. The flavor is sprightly and agreeable, excelling in this respect the Bubach. It has a perfect flower. This variety originated at Granton, Ontario.

THE EUREKA, a variety which originated in Ohio, has done well at Maplehurst. Mr. Craig, of the Experimental Farm, Ottawa, however, does not speak favorably of it. The plant is very healthy, and very productive, the berry not quite as large as the Bubach or Little's No. 10, but firmer. The shape is conical, chopped off at the point. It is a good quality.

THE LOGAN is a new berry from Indiana. This plant is a good thrifty grower and very productive. The berry is large, roundish, even form and of good quality. It is certainly a promising berry.

THE HAVERLAND is another variety standing in the first rank as a market berry. It is a vigorous, healthy grower and very productive. The fruit is quite peculiar, being very long and of a light red color. It is moderately firm, medium in quality and colors evenly over all the exterior. We regard this berry with more favor than we do the Warfield, a variety which is highly prized in Illinois, as being a market berry, and which is said to be a seedling of the Crescent.

MRS. CLEVELAND is another rather promising market berry. The plant is vigorous and healthy, and a fairly good bearer. The berries average medium to large.

THE JESSIE was planted with a great deal of expectation and carefully petted; and truly some of its first berries were wonderfully large and fine. A plate of them quite astonished two or three of our directors, who called one evening; they almost thought a carving knife was necessary to prepare them for eating. But, after the first few large berries are gathered from the plant, the

rest are quite small, and, the second season, there are very few large ones, even amongst the first berries. It is, therefore, not worthy of a place in the market garden.

THE PARRY is a fairly vigorous plant. Its berries are borne on long upright stalks, which stand stiffly above the leaves. On this account it appears to carry a heavier crop than it really does. It may, however, be called a productive berry. The fruit is large, smooth and rather attractive looking. It produces very few runners, however, and the rows, in consequence, soon become rather thin.

Among the list which we have put down as being discarded from the market plantation are the following: Ohio, Burt, Pineapple, Itasca, Cloud, Seneca Queen, Belmont, May King and Downing.

THE WOOLVERTON berry, which was on our list of distribution for a time, was originated by Mr. John Little, of Granton, Ont., and is considered by him one of his best seedlings. Mr. Crawford, of Ohio, has tested it and considers it a variety of great merit. The fruit is large, resembling the Bubach in form. Our plants of it failed to grow, and, therefore, we cannot report upon its merits.

MODERN FRUIT ROOMS.



THE most approved method is to have the building wholly above ground, and to double or treble the walls. In climates where the temperature does not go much below zero, a well-constructed double wall, double doors and double window sash would be quite safe. For greater security, supposing the walls to be wood, the inside faces of the double wall should be lined with felt. The roof should be also double, with provision for a ventilator if it should be found necessary to use one. This may not be required if windows are so arranged that there can be a current of air passed through now and then. Air should not be given except when the temperature outside equals that within; otherwise there will be a troublesome condensation of moisture, which is what we should try to avoid. The interior should have as many shelves as can be conveniently placed, on which the fruit is to be spread, and so arranged as to be easy of access for handling and observation. The fruit may be several courses thick on the shelves, even heaped, without injury, provided we secure the best conditions for preserving it; hay may be placed over the fruit if there is danger of frost penetrating, but this should be avoided, if possible, because a fruit house should be a show house equal to a greenhouse of pretty flowers; and, indeed, there are few more beautiful sights to which to invite friends than a well-ordered fruit house, with every variety on its own separate shelf, and presenting to the beholder the most glorious reasons for its existence.—*Ohio Farmer.*

FERTILIZERS FOR ORCHARDS.



As a fertilizer we have made use of unleached wood ashes. On most soils no other fertilizer need be used for a number of years, but on light or exhausted soils the application of perhaps twenty loads of decomposed stable manure, or, if this cannot be obtained, of fifty pounds nitrate of soda and two hundred pounds of fine ground bone per acre which, with one hundred bushels of ashes, will make a complete fertilizer. In case the fresh ashes cannot be obtained, two or three times the quantity mentioned of leached ashes would have a marked effect. Wood ashes have a tendency to solidify and compact the soil, hence they are excellent on light land, but care should be taken not to use them to excess on heavy soils.

Coal ashes have a similar effect on the physical condition of sandy soils, and may be used for this purpose, but they *do not* furnish any food for plants, that is of value.

For young trees, the quantities mentioned are much too large, unless the fertilizers are to be applied broadcast for other crops, but, in old bearing orchards, the amounts can often be increased with profit, and it should be spread over the entire soil, as the feeding roots of the plants are, for the most part, outside a circle ten feet in diameter drawn around the tree.

Where potash is needed in the soil, as is frequently the case with bearing orchards, and wood ashes cannot be obtained, it can be secured as muriate or sulphate of potash. These are waste materials from German salt mines, and sell at about \$40 per ton for the muriate and \$25 for the latter, the price varying with the amount of potash they contain. It is from these salts that the manufacturers of the high grade commercial fertilizers obtain their potash.

Two hundred pounds of muriate of potash will supply an abundance of potash for a bearing orchard, if the soil is moderately rich, while a much smaller quantity will generally have a very marked effect on young trees. The other materials most likely to be needed by trees, and in fact by all crops, are nitrogen and phosphorus, and in case stable manure is not readily obtainable to supply them, recourse can often be had with profit, to chemical fertilizers. As a rule, the best source for nitrogen is in the form of nitrate of soda or, as it is commonly called, Chili saltpetre. This costs from \$45 to \$50 per ton at the sea-board, and, as not over 100 pounds per acre are usually required, the expense is not great. Among the other materials rich in nitrogen, are sulphate of ammonia, a waste product of gas houses, and dried blood, etc., from slaughter houses.

As a source of phosphoric acid, fine ground bone is largely used, although dissolved bone black will give quicker effects.

From 200 to 400 pounds of these materials per acre should be enough.

As a formula for mixing the above materials, for an acre of apples or other fruits, we would then have

50 to 100 pounds nitrate of soda.
100 to 200 pounds muriate of potash.
200 to 400 pounds ground bone.

If 50 to 100 bushels of unleached wood ashes could be obtained, they would more than take the place of the potash, and would supply perhaps one-half of the phosphoric acid required.

Before using any chemical fertilizers to any extent, it is well to test the effect of each of the above materials on separate plats, in order to learn if they have any effect. Oftentimes one or more of them will be found to be present in sufficiently large quantities, and if more was applied it would only be wasted.

The soluble chemicals should only be applied in the spring, or, better yet, after growth has commenced; they should generally be scattered broadcast, and harrowed or dragged, rather than plowed in. Precautions should be taken, not to bring these chemical fertilizers in contact with the roots of trees, as the results might be disastrous.

L. R. TAFT.

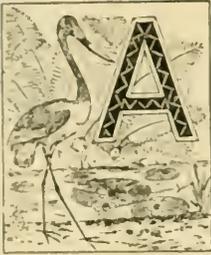
*Bulletin 81, Agricultural College, Mich.,
March 1, 1892.*

HOGS IN THE ORCHARD.—Sheep leave their manure merely as a top-dressing for the orchard; hogs work theirs into the soil. Sheep harden the ground; hogs disturb the turf and leave it uneven, but you get finer fruit in consequence. Sheep eat all the tender twigs and leaves they can get hold of; hogs seldom touch the limbs. Hogs sometimes disturb the roots, but this is oftener beneficial than otherwise. An orchard set 50 years ago was not bearing fruit of any value. Two acres of it were fenced and some hogs turned in. The next year more of the orchard was included and more hogs allowed to run in it. They turned over every inch of the sod and kept down the weeds, and the trees bore a good crop. This year the fence was moved to include two rows of trees formerly in the sheep pasture, and the improvement is very marked. The difference in the two parts of the orchard where the hogs and sheep run is so much in favor of the former that it can be seen for half a mile.

Young orchards should be given a thorough cultivation during the first few years after planting, providing sufficient fertilizing material is supplied. Many of the most profitable orchards are on such steep hillsides that they cannot be cultivated, and in these is the place to let the hogs do the work. While an orchard will do well in sod if thoroughly mulched, yet it will do better if the sod is turned under, the soil stirred and loosened about the trees.—*Farm and Home.*

PEACHES FOR MARKET.

THINNING, PICKING, SORTING AND SELLING.



As to the experiment with the borer wash, Mr. Hale found that 90 per cent. of the trees washed were free from the pest, while 90 per cent. of the unwashed trees suffered from their attacks. Speaking of this subject, he says :

After the first three years and our orchard had grown larger we quit using soft-soap and substituted caustic potash, as the only object of the soap was to smooth the bark that there might be less chances for rough places for the mother beetle to deposit the eggs which hatch out and make the borer. Potash answers the purpose just as well. We also add white arsenic, as it makes good feed for mice and rabbits that try to live on peach bark. Some clay or fresh cowdung is also put into the mixture as it helps to adhere to the tree better than when lime alone is used.

"Experience has taught me," said Mr. Hale to the *Tribune* reporter, "that raspberries or other plants take from the peach trees substance which should be theirs and induce the yellows and decay. So we give up the land entirely to the trees and after the second year we spread fertilizers broadcast all over the ground early in the spring and keep the ground free with harrow and single-horse cultivator. Every year, whether we have any fruit or not, the orchards have had from 1,000 to 1,200 pounds of fine ground raw bone, and 300 to 500 pounds of 80 per cent. muriate of potash per acre."

There is a vast difference in varieties as to hardiness. The Crawfords, early and late, gave us one light and one full crop in ten years, while Alexander, Smock and Hill's Chili produce good crops every year. Mountain Rose, Oldmixon, Stump, Keyport, Ward's Late and Stevens gave three full crops and two partial ones in ten years. More than 80 per cent. of our trees are about equally divided between Stump, Mountain Rose and Oldmixon. Therefore, although we had over 6,000 trees planted previous to 1881, it was not till 1887 that we had any considerable crop of fruit. Those that blossomed full were very closely pruned by the shortening-in and thinning-out process, cutting away fully one-half of the fruit that had started. Then early in July when the fruit was three-quarters of an inch or so in diameter we began thinning by hand-picking, leaving the best specimens not nearer than four inches apart. To accomplish this on some 600 of the trees we had to take out about four out of every five peaches.

This thinning was a slow and somewhat costly undertaking and some of the help on the farm as well as some of the neighbors thought we were a "little off" to "wait six years for a crop of peaches and then destroy it when half-grown."

So to please them as well as to satisfy my own horticultural curiosity, a few of the full fruiting trees were left without thinning, with the result in the fall of about the same yield in baskets per tree from the unthinned as from those where four-fifths of the fruit had been thrown away when green. However, the fruit of the latter was of such large size and superior color and flavor that it readily sold on the average for more than double that from the trees where all the fruit had been allowed to grow, aside from the fact that the first named trees were not exhausted one-half as much, not having had to produce more than one-quarter as many pits, which contain the reproductive power that saps the vitality of plant as well as animal life.

The system of picking, sorting and selling the fruit is as methodical and perfect as the system of planting and cultivation. There are scattered through the orchards buildings where the pickers live, and in which the fruit is sorted and put in baskets made of an extra whiteness. Nothing is left undone to make the fruit tempting, that it may command the highest market price. The orchards are not picked until the fruit is fully ripened. Owing to the lowness of the trees most of the fruit is picked from the ground. Step-ladders are used to gather in the top fruit. The muriate of potash used so lavishly gives the peaches a high color, and the Hales' orchards when the product is ripe are beautiful to behold. The fruit is sorted into "fancy," "No. 1" and "seconds" by girls with light and nimble fingers, placed in their whitewood baskets and taken in wagons to Hartford, where they are displayed and sold in a warehouse rented by the Hales themselves, so that all commissions are avoided. "Fancy" peaches were three inches or more in diameter. Fifty per cent. of the product was of this description.

—J. HALE, in *New York Tribune*.

CURRENTS.—The best currant to grow for home use is the White Grape. Its fruit is sweetest and best for dessert use, its jelly has the best flavor, and it is superior to all others in quality for canning. If a late red berry is wanted, the Victoria is not excelled for northern culture. The Fay is larger, but it is more sprawling and delicate in habit and the fruit is poorer in quality. If you want first-class currants in size and quality, set in rows in the open sunshine, cultivate thoroughly, and manure heavily. In pruning, permit the new wood to come on and cut out the wood that is four years old or upward. The Black Naples currant has a value not realized, except by our settlers from England. By scalding the fruit for a few moments in boiling water, and then putting into fresh water for cooking, the peculiar flavor of the skin is removed, and when canned for winter use it is much like the cranberry sauce in flavor and color. In growing the black currant, it must be kept in mind that it is borne on wood of the preceding year's growth, and to secure a succession of new wood it is necessary to cut back the points of growth each fall. The Crandall has no relative value for any use.—*Orchard and Garden*.

SPRAYING CROPS.*



AT the present time there is no subject of more interest to fruit-growers than the proper way to spray fruit trees to protect the crop from the attacks of injurious insects. A very concise and handy little book has lately been published by Prof. Clarence M. Weed, of Hanover, New Hampshire, upon this subject. It consists of an introduction in which the methods, apparatus and materials necessary for spraying crops to protect them against their insect and fungus enemies are described. This is followed by four chapters, entitled: Part I., spraying the larger fruits, apple, plum, cherry, pear, peaches. Part II., spraying small fruits and nursery stock, strawberries, currants, gooseberries, grape, raspberry, nursery stock. Part III., spraying shade trees, ornamental plants and flowers, shade-trees, roses, flowers. Part IV., spraying vegetables, field crops and domestic animals. Prof. Weed's experience makes him a valuable guide in the subjects of which he treats. He was one of the very first experimenters to discover a combined insecticide and fungicide, which, in the case of the potato rot and potato beetle, has turned out very successfully, so that now both of these scourges may be treated at once with little more expense. The instructions are given in a short plain manner, and the book is well illustrated. Its convenient size and small price make it a welcome addition to the books of value within the reach of every farmer in the country. Bound up with it are advertisements of the makers of the best spraying outfits, which will be found of use to those wishing to buy these useful instruments.

J. F.

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

*SPRAYING CROPS, by Prof. Clarence M. Weed: The Rural Publishing Co., New York, 1892, 75c.

BEGINNING GARDENING.

Large profits are often made by the gardener. They have to be large per acre, because if not, they would not afford a living for himself and family and some surplus to lay by for future use. Often the owners of near-by land think that what one man has done others can do, and so they begin to imitate as far as possible. They usually forget one most important fact. The successful gardener has been years bringing up his soil to the point where all the labor he puts on it will pay. The beginner may think that by carting on extra loads of manure, covering the ground as deeply as it can be plowed under, he can make the soil rich enough in a single season to secure paying results. What is the consequence? Unless the season be extremely wet the manure fails to rot, and drying the land still more, does little, if any good.

For many kinds of crops the experienced gardener would not think of applying coarse, unfermented manure from the stable. He uses such manure for the coarser crops, early potatoes, sweet corn and cabbage. The frequent and thorough cultivation such crops require works the manure through the soil and greatly helps in decomposing it. This fills the soil with vegetable matter rich in nitrogen. The second year stable manure is not applied, but a dressing of mineral manure, phosphate and nitrates of soda or potash. These are more immediately available than stable manure, and with the remains of stable manure left over make a better crop the second year than the first.

It is a great help in beginning gardening on ordinary farm land, if it can be begun the first year on a clover sod plowed in the fall, and as much fine manure as can be used as top dressing through the winter. Where all these advantages can be had it is possible, with a light dressing of nitrate of soda, to bring ordinary farm land into fair condition for gardening the first year. The chief difficulty will be, not in lack of fertility, but in excess of weeds stimulated to more vigorous growth by such excess of plant food. It is for this reason that the coarser crops, that can be cultivated mainly with horse power, are necessary, however thoroughly the land is fertilized. One year's thorough cultivation of such crops under high manuring will start and kill a large proportion of dormant weed seeds in the soil. Many years of perfectly clean cultivation, never allowing a weed to mature its seeds, will not destroy all. Most weed seeds need to be very close to the surface to germinate. Many years of successive plowings will every time bring new seeds to the proper conditions for germinating.—*American Cultivator.*

ONE of the attractive features of the Australian exhibit at the Chicago Fair will be tree ferns from Sidney, New South Wales. These have always been a popular exhibit at London expositions. Chief Samuels has been assured by Arthur Renwick, Commissioner for New South Wales, that a number of rare specimens will be sent. The ferns vary in height from eight to fourteen feet. At the close of the Exposition many of them will be given to the park commissioners of Chicago.

STRAWBERRIES.

The bowl of strawberries on the farmer's table is one of the most delightful suggestions of spring, and the taste of them makes it a delicious realization. "Strawberries," writes the poet, "deserve all the good things that may be said of them. They are beautiful to look at, delicious to eat, have a fine odor, and are among the most healthful fruit that we have."

It is said of an eminent French writer, that he attributed his longevity to the free use of them, while good authority places them among the food remedies for fever, weak digestion and gout.

The usual mode of serving strawberries with cream and sugar is very palatable; but country housekeepers will find that a variety in preparing this delicious fruit will render it acceptable every day throughout the season. The following recipes will be found reliable:

Strawberries and Whipped Cream.—Place a layer of strawberries on the bottom of a glass dish, cover with pulverized sugar; then another layer of berries and sugar, cover the top with a pint of whipped cream, the whites of three eggs and a teacupful of sugar. Set on ice one hour before serving.

Strawberry Short Cake.—Stem two quarts of ripe strawberries, sweeten and mash. Make a quart of flour into biscuit dough, roll out an inch and a half thick, put into a greased baking pan, and bake very quickly. When done, take from the oven, split in halves and spread lightly with butter. Place the lower half on a dish, put half the berries on it, cover with the other half, spread with the remaining berries, pour cream around and serve.—*Farm and Home.*

FRAME FOR TOMATOES.—For keeping tomato vines from the ground, I have found it a good way to make a frame by driving posts in the ground each side of the rows of tomatoes leaving one foot or so above ground, and nail narrow strips of board to the sides of these, and on top of these, tack on barrel staves after splitting them into bits an inch or so in width. This makes a good frame for the vines to rest upon, and the tomatoes do not come in contact with the ground at all.—*Orchard and Garden.*

THE PROFIT IN RASPBERRIES.—Raspberries would hardly be a profitable crop at 5c. per qt., unless it was 5c. net, as it costs $1\frac{1}{2}$ to $2\frac{1}{2}$ c. per qt., to pick them, to say nothing of expenses of marketing, which are as much more. An average crop is about 1000 qts. per acre for the three or four years which they bear fruit and they soon run out. They ought to bring 8c. per qt., to make it a fair business. They do best on a good garden soil, but would grow on sandy land if there was moisture enough in the summer. Well rotted yard manure should be applied every fall and worked in around the roots with a fork. As far north as Nova Scotia and Northern United States they would have to be laid down through the winter, which is neither an expensive nor long job.—*Farm and Home.*

The Garden and Lawn.

SUMMER TREATMENT OF CALLA LILIES.

A great many articles have been written on this subject, and it seems as if I had tried every plan given in three years gone by, and finally buried the last of seven nice callas, all killed by excessive kindness, I expect. A year or two ago I started in anew, and made some experiments of my own.

Last June I put a calla bulb in a bed with canna and caladium around a fountain basin, and it received the same treatment as they; it grew slowly all summer. In September I took it up and re-potted it in good, rich dirt. In a few weeks it began to bud, and has had flowers on all winter long. The last bloom was very large, measuring five-and-a-half inches across the top.

It has done the best of any of my callas. This year all the calla bulbs will be planted in the open ground, where they can get the full force of the sun, and only sufficient water to keep them growing slowly. I have not kept the plant as wet as I used to do, and have had more blossoms and larger ones. Keep the leaves washed free from dust, and also to help destroy any stray louse that may endeavor to find a resting-place there.—GYPSY in *Farm and Fireside*.

OUR NATIVE FERNS.

The ferns and brakes of this country are marvellous in beauty and variety. Even those who do not care to study them can get worlds of pleasure in bringing them from the woods and planting in odd spots about the home. The writer had two corners near a portico, as well as a spot nearly a foot wide in front of the house, where the grass simply would not grow. Plenty of ferns, of assorted sizes, were put in place of the grass, with some odd bits of broken stone scattered between them, interspersed with moss, and what was a constant nuisance came to be the most attractive spot on the grounds. The woods and their associations were constantly with us from early spring until Jack Frost came. Then, too, they were clipped from freely, to mix with cut flowers and for table decoration, and they seemed to like it, as the more we cut the more they grew. Four large fronds of ferns laid around the center dinner dish give a wonderful refreshing effect. Mr. J. S. Van Devoort, of Ohio, in the *Agriculturist* for March, says: "In trying to beautify our lawns and gardens, native plants are too much neglected. There is nothing that for so little work and outlay produces so pleasing results as tastefully arranged beds of ferns in a shady corner of the yard or garden. Various kinds of ferns may easily be obtained in moist woodlands. The proper time to go "ferning" is in early spring when the plants begin to

develop their circinate fronds. Remove the plants with a sharp spade, allowing as much of the soil to remain intact about the roots as possible ; place the roots in a spring wagon and remove them to the place where they are to grow. If the soil is similar to that where they grew, one cannot fail to have ferns, fine, large and beautiful, the first year. To meet with success in fern culture, one must study the plants in their native haunts, so as to be able to supply their needs as to soil, moisture, shade, etc. Ferns are perennial, and do not require transplanting. When once well established, there is nothing more interesting and beautiful in a garden than a native fernery.

SUMMER TREATMENT IN THE VINEYARD.

The checking of superfluous growth by summer pruning is important, as only four canes to each vine are needed for the succeeding year. What we need beyond these is simply foliage sufficient to perfect the present crop of fruit ; hence many suckers and superfluous shoots can be wholly removed, others shortened.

Frequent extreme changes in temperature tend to induce mildew. Sulphur is a specific. At first we bought a small quantity and used a sulphur bellows ; now we mix sulphur with air-slacked lime, about one part in five, and scatter by hand, dusting the vines and ground beneath quite generously. The use of sulphur is usually delayed too long. I would advise its use from June 20, at intervals, up to the period of ripening ; if delayed till the foliage is badly mildewed, the sulphur remedy is about the same as locking the stable door after the horse is stolen. When the foliage is ruined by mildew, sulphur is of no avail.

Grape rot is a source of much trouble to the vineyardist. The affected fruit has black spots upon one side, the work of a fungus which ruins the berries so affected. With varieties in some localities, occasionally this affection is so serious as to nearly or quite destroy the crop. Avoid fermenting manures ; use all available means to maintain a healthy condition of the vines. Remove and destroy all affected berries as soon as possible after they are discovered ; otherwise the spores of the fungus may be multiplied indefinitely.

Success with the grape is generally the result of intelligent care, continuously given, from beginning to end.—P. M. AUGUR, *Connecticut State Pomologist, Farm and Home.*

AMONGST those engaged in plant-growing, none are better acquainted with the advantages of keeping pot plants on a moist bottom than those who cultivate for market ; with them it is now a rare occurrence to meet with anything on dry stages, and the plants which they grow in little pots are marvels of skilful cultivation alike for their healthy foliage and for the quantity of the flowers which they produce.—*The Horticultural Times.*

❖ The Kitchen Garden. ❖

CELERY GROWING.

Would you kindly give very full directions for growing and blanching celery?
A MONTREAL SUBSCRIBER.

In reply we cannot do better than give the following, from our contemporary, *The New York Herald*:

Celery demands good land, worked fine and made rich by heavy manuring for at least two years previously; it is idle to attempt growing it on land that is poor and likely to suffer from drought; choose only good, rich, mellow soil, that does not suffer from drought easily, and if possible, provide a means of watering it liberally in case of dry weather. It is most frequently grown as a second crop after onions, but may be made to follow also early potatoes, cabbage or beets and carrots.

The seed may be sown at the same time with the onions in April, or very early in May, putting it in with a drill in every fifth or sixth row instead of onion seed. Some seed is usually started under glass, sowing it about April 5; when sown earlier the plants are very apt to go to seed; when sown under glass do not sow too thickly; an ounce of seed is enough for two sashes; cover the seed very lightly by sprinkling over it a little sifted loam, and keep the surface moist by occasional watering.

In order to avoid too frequent watering, which packs the surface, cover the bed all over with about half an inch of peat moss, which will need to be removed as soon as the seed begins to break ground, or the same result may be obtained by shading the glass whenever the sun is bright.

When the celery plants have four leaves, and before they begin to crowd and become drawn, they should be transplanted or thinned out so as to give them room. They may be set for a time at three inches apart in a bed, if the land is not ready for them, from which they may be transplanted to the field as late as August 1. The portion of the crop set after July 10, however, seldom grows large enough for sale in the fall, and is usually stored for sale in winter and spring.

It is important to keep celery growing steadily. If stunted by a dry spell or very hot weather it is very subject to a disease known as blight, which turns the leaves brown in spots, after which they die; this disease in bad seasons often destroys a large part of the crop, but it is seldom very troublesome where the celery can be watered and kept growing in dry weather.

As soon as the early crop grown between the celery can be cleaned off, it will help the celery very much to run a small plow between the rows, throwing the earth first from the rows and then back again. This will make the earth mellow and encourage growth.

About a month before it is desired to have the celery ready for the table the earthing up should begin. Three men are required to do the first banking. One holds the leaves together, standing astride the rows, while two others shovel up the banks to about half the height of the leaves. After ten or fifteen days a second banking carries the earth quite to the tops of the leaves, after which the celery must have ten to twenty days, according to the weather, before it will be white enough to eat.

Of course in hot weather it will blanch quickly and slowly in cool weather, and since our weather in the fall is very capricious, it is not easy to keep up a constant supply of celery. In hot weather it will not keep, and in cool weather it blanches slowly, and consequently the market in fall is apt to be fluctuating in price.

By the 1st of November we must make arrangements to store all celery that is not ready for immediate sale. This is done in pits covered with boards, and these again covered with eel grass, leaves or other litter, and with care and skill it may be kept till April in good order. In keeping it much depends on the weather, and also upon the location of the pit and the way it is managed.

The best place for a celery pit is on the north side of a fence or building, where the effect of the sun is not felt, and the covering should be just enough to keep out frost ; the cooler, the better it will keep, so long as it does not freeze.

GOOSEBERRIES.—The great drawback to the successful raising of gooseberries in this country is mildew. It is quite possible, however, to furnish conditions under which the plant may flourish equally as well as in more favorable localities. For instance, we know that the gooseberry delights in a moist, rich and cool soil, which we are able to furnish by deep ploughing, heavy manuring, and mulching the soil thoroughly. To afford protection from the sun, partial shade and a northern location may be chosen ; the northern side of a barn or other building, or even of a board fence, is a great advantage in location. The centre of the bush may be kept open by careful pruning, so that light and air can be admitted freely. Whilst it is not always possible to avoid mildew, especially in seasons when the weather is so favorable to its development, there are many painstaking gardeners who are very successful in growing English varieties which, it is almost impossible to raise, under ordinary circumstances, in this trying climate. The best fertilizing material that we have yet found for the gooseberry, is well-rotted cow manure, applied liberally and well mixed with the soil.—*Orchard and Garden.*

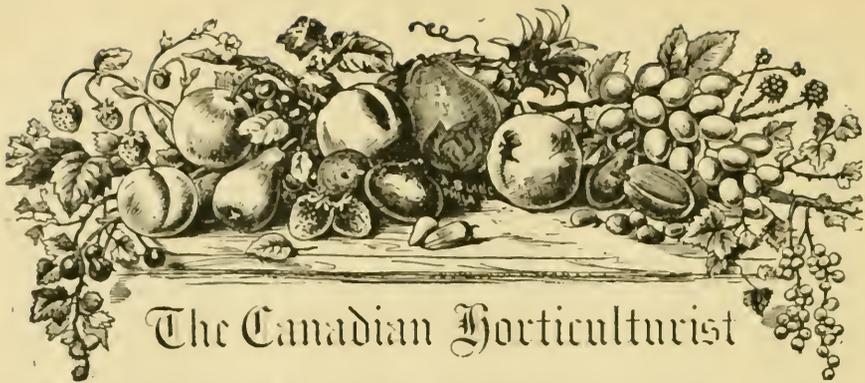
LET the cultivation of the peach be early and often during May, June and July, and then quit, weeds or no weeds. Crowd the growth of wood early in the season, that it may stop early in the fall and have an abundance of time to ripen up early and well, and both wood and fruit buds will stand several degrees more of freezing than it is usually thought possible.

TOMATOES BY THE ACRE.

Tomatoes yield the best crops in heavy loam, that will not pack or bake. The plants, except for early planting, can be raised better out-of-doors, in garden beds. The ground should have a dressing broadcast of 800 bushels to the acre of good, well rotted barn-yard or hog-pen manure, well and thoroughly plowed in and harrowed down. When the season is well settled, harrow the ground, and furrow out five feet each way ; and put in plenty of fine, well-rotted manure at the crossing of the furrows, using about eight hundred bushels to the acre in the hills. Tread down well and cover with soil about three inches deep. Set the plants well down in the ground, pressing the soil well up to them. It is best to wet the roots when setting, as the soil adheres better. Keep the ground clean and loose with the cultivator and the hoe, drawing the soil or hilling them at each dressing.

Tomatoes are marketed by packing in crates holding a strick or Winchester bushel, made of two ends and one middle piece, each three-quarters of an inch thick, eight inches wide and fourteen inches long ; with the slats nailed on three inches wide, 22 inches long, and three-quarters of an inch thick. Good heavy mason's lath will answer for slats, leaving a space of one inch for ventilation between them. For a long distance from market they should be picked just as they begin to show a red tinge at the blossom end ; but for near-by they must be riper or so they will be ripened when they arrive in the market. Care should be taken not to pack any cracked or wormy ones, as they spoil the rest, and injure the sale of the whole. For Philadelphia market they are usually shipped in five-eighths stave peach baskets, covered with cloth, which are returned to the shipper.—*American Agriculturist*.

HOW TO GROW TOMATOES IN PERFECTION.—Because the generous nature of the tomato yields bountifully with seemingly little care, the general impression prevails that the plant requires but little attention. This is a sad mistake, for there is not a vegetable in the garden that is so gross a feeder, nor one that so readily pays for all the food and care given as the tomato. To grow it to the greatest perfection, the hills should be dug out to the depth of two-and-a-half feet ; at the bottom there should be a half bushel of well-rotted manure ; above this let the soil be an equal mixture of loam and manure thoroughly mixed. The hills should be at least six feet apart. Let the situation be open, warm, airy. When the fruit begins to set, mulch with clean straw or very small brush. Under these conditions six plants will furnish sufficient tomatoes for a family of twelve persons. Whatever variety may be planted in this manner, the result will show specimens for size, smoothness, and esculent properties, unknown to the variety, when grown in the ordinary manner.—*American Agriculturist*.



The Canadian Horticulturist

SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

NOTES AND COMMENTS.

TREE WASH.—For washing the trunks of trees to drive away borers and to destroy such insects as may be upon them, carbolic acid and kerosene emulsion is excellent. It consists of one quart of soap, one pint of kerosene, two quarts of water and one pint of carbolic acid.

THE CHERRY AND PEAR TREE SLUG should be watched for carefully and remedies should be applied immediately. Dry dust, coal or wood ashes, plaster, slacked lime, will destroy them; but, if the trees are large and numerous, arsenites may be more readily applied.

NOZZELS FOR SPRAYING.—For orchard spraying the Nixon nozzle makes a mist-like spray and does excellent work, but for the vineyard, and especially with the knapsack sprayer, the Vermorel nozzle is the best, being easily cleaned if clogged. This it is particularly apt to do in applying the Bordeaux mixture, and, therefore, in the use of this fungicide, the Vermorel nozzle is decidedly the most desirable.

PLUM CURCULIO.—Bulletin 83, of the Michigan Agricultural College, notes that the "Little Turk" sometimes appears upon plum trees before the flowers open, and, as it has recently been decreed in the interest of bee keepers that no spraying be done while the trees are in bloom, it will be wise to give an application to our plum trees just before the blooming time, in order to destroy any curculio that might be waiting around to begin its mischievous depredations.

PROTECTING YOUNG TREES FROM MICE.—In bulletin 17 of the Massachusetts Agricultural College, a simple recipe is given for protecting trees from mice. The advice is to paint the trunks of the trees late in the fall, from eighteen

to twenty-two inches from the ground, with a mixture of Portland cement and Paris green; one tablespoonful of the latter to a gallon of the paint. Only a small quantity of the paint should be mixed at a time, and it should be made thin enough to apply readily with a common paint brush. If mixed with skim milk, the paint adheres better than if mixed with water.

GIRDLING GRAPES.—Dr. Fisher reports, in the same bulletin, that he has been experimenting in girdling grapes in several plots in his vineyard, each plot containing one hundred and twenty vines. As a result of his experiment, he has come to the conclusion that wherever a grape will ripen fairly by the natural processes, girdling is a complete draft upon the gains of the present. With him the increase in weight of fruit was more than offset by the waste, through split berries, and the consequent extra time required to prepare the whole for market. There was no gain in the price from the ten days' earliness. The Concord does not reach the market early enough to command the early prices. Another evil result of girdling was a diminished crop from the vines the ensuing season.

PASTURING STOCK in orchards that have been recently sprayed, is usually considered exceedingly dangerous. We have, ourselves, as a rule, been very careful to avoid turning in horses and cows into an orchard which has been sprayed with Paris green or London purple. It appears from experiments that have lately been carried on in certain experiment stations, that there is much less danger in this regard, than we had supposed. Prof. Cook, of Michigan, pastured sheep and horses under trees that had been sprayed with four times the usual amount of poison, without their receiving any injury. The fact is that the poison, which we apply to the trees of our orchards, is so extremely diluted that the amount falling upon any particular point is almost imperceptible.

LATE KEEPING GRAPES.—We have received from Hon. R. W. Scott, of Ottawa, a package of Agawam grapes, which were grown in the open air on the north-west bank of the Ottawa river, and have been kept in cork dust for eight months, during all which time Mr. Scott states that they have had a supply of grapes of various sorts for the table. He packed five kegs of Delaware, which lasted until Christmas. For the following two months he relied on Lindley and Roger's No. 9, and during March and April he used the Iona and the Agawam. When properly ripened the two last have always proved the best keepers. Mr. Scott does not see why we should not have a constant supply of grapes nine months of the year, by making a proper selection of the varieties, packing them in dry cork dust when the grapes are perfectly ripe, and keeping the kegs in a moderately cool, dry cellar.

APPLES IN LIVERPOOL.—A circular from Messrs. Woodall & Co., dated 3rd of April, gives high quotations for Canadian apples in England. It states that

arrivals have been on a small scale during the month of April, and the shipments are nearly over, but there has been a good demand for Canadian apples and extreme prices have been realized. Some samples, which were excellent in quality and condition, sold from 34s. to 38s. per barrel. This seems encouraging. The season has been the largest on record, the receipts at Liverpool, alone, being nearly one million barrels, and the demand during all the shipping period has been so good that the apples have brought a higher range of prices all through the season than usual. Canadian Baldwins opened the season at 19s. 6d., and since then the lowest prices touched for sound stock was 14s. 6d. The heaviest receipts were in the month of November, amounting to about one quarter of a million barrels, ninety thousand of which were received in one week. But the demand was so good that they were readily bought without causing any decline in the prices. Canadians will be interested in noticing that Canadian Ben Davis apples are quoted at a lower price than either the Baldwin or the Spy.

From this circular it would appear that the arsenic scare, which has been raised by the *Horticultural Times*, has, after all, had very little effect upon apple consumers in Great Britain. They evidently have too much good sense to be so easily deterred from purchasing a good article.

THE EVILS OF THE BLACK KNOT.—Bulletin 40, of the New York Agricultural Experiment Station, is devoted to the black knot, and gives some instances of the terrible nature of this disease.

Mr. G. D. Powell, of Ghent, gives the following as his experience: "The black knot has about swept the plum growing interest out of existence in the Hudson River Valley. I planted an orchard of one thousand trees and fought off the knot for seven years. Each year there would be some formation, but we persistently kept it off. Last spring there was none to be seen on my trees when they were in bloom, every particle having been taken off. But on the first of September, the trees were completely covered, and the entire tops had to be destroyed. The whole trouble came from some old trees adjoining my farm, which were neglected by my neighbor."

Mr. G. Brandon of Athens, N. Y., says, that some time ago there was a plum belt three miles wide on each side of the Hudson River, beginning at Cedar Hill, near Albany, and extending to the southward some thirty-six miles. He himself had an orchard of 6000 trees. At that time it was no uncommon thing for a steamer to carry thence, from one hundred to five hundred barrels of plums to New York, at one trip. For four days' picking, in one week, he once received \$1,980. In 1884 he netted \$8,000 from his plums, but the next year he rooted out over five thousand trees, on account of the plum knot.

We extract these instances merely as a warning to Canadian plum growers, hoping that all may be aroused to seek more effective legislation for the destruction of this dreadful fungus.

THE FRUIT EXHIBIT IN LONDON, ENGLAND.—Mr. W. White, of Ottawa, sends a clipping from the *Canadian Gazette*, of April 21st, concerning the exhibit of fruit which is to be made in London, England, in the autumn of the present year. In the elaborate preparations which our country is making for the exhibit of our fruits at the Chicago Exposition of 1893, there is a danger of overlooking other almost equally important exhibits which are within our reach.

Great Britain is the principal apple mart for the apples of Ontario, while very few of our apples go to Chicago, or to any other country of the world. We should, therefore, lose no opportunity of making known to the people of Great Britain the superior excellencies of the apples of Ontario. London is an enormous city, containing according to the latest reports, nearly five million inhabitants; the importance, therefore, of taking advantage of the opportunity which will be offered to us next September is too evident to be passed by without careful consideration. We, therefore, call the attention of the fruit growers, not only of our own Association, but of the Fruit Growers Associations of British Columbia and Nova Scotia, to the notice that next September there is to be an exhibit of fruit in London on the largest scale ever attempted there. It is to be under the auspices of the Fruiterers' and Gardeners' Companies, the Royal Horticultural Society, the British Fruit Growers' Association, and other kindred societies. According to the *Canadian Gazette*, published in London, England, the corporation of the City of London has lent the vacant land of the Thames embankment for the purpose, and a temporary building will be erected for the exhibit which will last at least one week. The exhibits will be classified under three heads, and prizes to the amount of over \$1,500 will be offered for the best specimens. The classes will include dessert fruits, orchard, house-grown fruits, collections of fruit trees, English market fruits, hardy fruits grown in the open air, farm, orchard and plantation grown fruit, cottage garden and allotment produce, foreign and Colonial fruit and jams. Canada should not fail to be well represented, and the Canadian associations may be able to use this exhibition to dispose finally of any false impressions left by the recent arsenic scare. Canadian fruit, as we now know, was not included in the allegations, but it would be well to seize this and every opportunity to bring home to the English consumers the superiority of the Canadian product.



❖ Question Drawer. ❖

FRUIT STORAGE.

SIR,—I have been trying some time to get some reliable information about the building of a good cellar, for the keeping of fruit and vegetables. We have a cellar under our house, but do not wish to keep them there, and, if we did, the cellar is too hot. I am recommended by Mr. Bruce, of Hamilton, to write to you for information, as you are an expert in such matters. I want a first-class cellar, and if we can make one suitable in every way, I am willing to spend some money upon it. I wish to keep all kinds of fruit, besides vegetables for table use, and for one cow.

JOHN PENMAN, *Paris, Ont.*

The scientific principle, which is the basis for all methods of keeping fruit in good condition, is that the apartment be kept dry and cool. Too much moisture favors the growth of the germs of decay, while, on the other hand, too dry an atmosphere has a tendency to absorb the juices of the fruit to a great extent, thus causing the shrivelling of the skin. This, however, is avoided in the case of such varieties as the Russets, which are particularly subject to this trouble, by keeping them in close barrels, where the moisture given out by the fruit itself is sufficient to keep the apples from shrivelling when thus confined.

The temperature should be kept down very little above freezing point. For apples 34° is counted a suitable temperature, but grapes may be kept in a still cooler atmosphere.

Any means by which these ends may be secured, will keep fruit in satisfactory condition. It is quite evident that the house cellar will, in most cases, be too warm for keeping fruit. If the house cellar must be used, the apartment intended for fruit and vegetables should be separated from the rest of the cellar by means of a close brick wall. Serious objection to the use of the house cellar for fruit and vegetables is, that the gases generated by the vegetable matter render the air of the cellar foul, and unfavorable to the health of the family.

In order that the temperature of the air in the fruit cellar may be entirely under control, it needs to be very carefully separated from outside influences by double walls, double doors and double windows, thus enclosing a dead air space between. This may be effected by the use of a lining of building paper, so put on as to enclose a dead air space between it and the stone walls, and also between it and the floor above.

In ordinary cases the temperature of the cellar may be controlled by careful management of the cellar windows, which may be opened at night and closed during the warm days of the spring and fall. A still better mode, however, is to arrange for the admittance of fresh air through a pipe coming up from beneath the floor. The opening from this should be near the ceiling where it would at once displace the warmer air. This latter should be carried away through a pipe

which starts near the floor and runs up through the roof. By means of such an arrangement of pipes, the temperature inside can be quickly reduced at any time as low as that outside. It will evidently require to be so arranged that when the temperature inside has been sufficiently reduced it may be tightly closed up. In places where the winters are very cold, it is well to introduce the air through an underground passage.

Of course, it will be necessary to keep a thermometer in the fruit cellar so that the temperature may be kept as even as possible.

Such a cellar properly managed, will be well adapted to keep fruit in good condition during the greater part of the year. Of course, in the summer, when the nights are too warm to furnish cool air, the arrangement will fail of perfect success.

In the CANADIAN HORTICULTURIST for 1889, page 283, there will be found an article written by J. J. Thomas on "Fruit Rooms and their Management." A perusal of that article will be very serviceable to any one desiring a more elaborate and costly fruit house, than is herein referred to.

THE CRANDALL CURRANT.

SIR,—I had two bushes of the Crandall currant given me this year, and I have looked through my books and reports and cannot find anything with reference to it. I am not at all acquainted with it, and would like to know whether it is a currant worthy of a place in the garden?

MRS. JOHN GEORGE, *Port Elgin.*

A late report of Cornell Experiment Station speaks of this currant as follows: The Crandall is a simple variation of the Buffalo or Missouri currant (*Ribes aureum*), known in yards as the "flowering currant." It does not appear to be a well "fixed" variety. Some of our bushes produce berries little larger than those of the red currant, while others give fruits five-eighths of an inch in diameter. It is also variable in period of ripening on our plants, although the soil is uniform throughout the row.

Our bushes were fairly productive, but a heavy crop could not be expected from young plants. The habit of the plants indicate probable high productivity.

The plant is hardy and vigorous, and so far our specimens have been free from insect attacks, although the currant worm was very abundant upon adjacent rows of common sorts. The bushes attain to a large size, and need more room than other currants.

The fruits are large and fair, bluish-black and polished. They separate from the stem, and are, therefore, picked and sold singly, like gooseberries and cherries. The flavor is sweet and agreeable, though not pronounced. There is none of the grossness of flavor characteristic of common black currants. It makes good

stews, pies, and jellies, whether used green or ripe. In jelly we prefer it to other currants.

The variety is wholly distinct from every other. It represents a new type of small fruit, which, when further selected and improved, must come to be a staple.

GAS LIME AS A FERTILIZER.

SIR,—Have any of your readers had any experience in the use of gas lime as a fertilizer?
W. WHITE, *Ottawa, Ont.*

Gas lime has no great excellency as a fertilizer. Its action is chiefly chemical on the soil, liberating the fertilizing elements. The lime, however, is especially useful in the growing of roots, as, for instance, mangles, and turnips. After exposure to the weather the fresh lime in it is changed to sulphide of lime or gypsum. It is not wise to apply this substance too liberally, as in that case it may destroy the vegetable growth.

PRIMULA OBCONICA

SIR,—Is the *Primula Obconica* poisonous, and if so in what way?
A MONTREAL SUBSCRIBER.

It would appear that *Primula Obconica* is covered with minute hairs which are liable to penetrate the skin of persons handling them, and so poison them, though not dangerously. Florists in packing this plant have, in some cases, had their hands and arms swell with the poison.

❖ Open Letters. ❖

POMME ROYAL AND OTHER APPLES.

SIR,—As to the question regarding the *Blenheim Orange* apple, I have found it to be a very fair, moderate bearer almost every year, but better each alternate year, and with my neighbors it is an apple that is well liked.

The *King* has borne very well for me in the town of *Goderich*, on a gravelly soil but on my farm, which is a clay loam with clay sub-soil, it is shy of bearing. Both these are noble apples.

I have the *Pomme Royal* in town, which used to ripen earlier. The fruit was much finer than some varieties grown on the farm. Whether it is because of the soil or because grafted on different stock, I cannot tell. I grafted it on a bearing tree that was a seedling. It appears to me that stock influences the graft.

WALTER HICK, *Goderich.*

BISHOP BOURNE APPLE.

SIR,—I do not remember whether I ever sent you scions of the Bishop Bourne apple to introduce into Ontario after trial by yourself, and approval. The apple is much like the Princess Louise in size, shape and color, if I may judge from the representation of the latter in the CANADIAN HORTICULTURIST. It is in fair condition for eating in October, and I have kept it perfect until March. My children all prefer it to any other variety. The Bishop Bourne apple was named from Bishop Bourne of England. It was grown by Wm. Sutton, of Cornwallis, N. S., from seeds of the Newton Pippin. It is described in "Downing's Fruits and Fruit Trees," edition of 1872. It has been very little propagated, but I think it would become a very popular apple wherever it succeeds, on account of its beauty and good quality.

The Andrews, or Major Sweet, is a popular and productive kind, and it is considered quite profitable. Its season is from November to February or March, and always saleable when it is known. This apple is a seedling originating in Yarmouth, N. S., grown by one of the first settlers, Major Andrews. After being known for fifty or sixty years, and lately coming into competition with about one hundred and thirty kinds, it is preferred in the home market to any other kind for a pleasant eating apple. It is described in "Downing's Fruits and Fruit Trees," third appendix.

I send you scions of both these varieties.

C. E. BROWN, *Yarmouth, N. S.*

APPLES FOR THE NORTH.

I received a number of new Russian varieties from the Experimental Farm at Ottawa, this spring, for testing. These varieties are Little Hat, Saccharine, Red Raspberry, Bode, Hare Pipka, Blushed Calville and Sugar Sweet. I am well pleased with the appearance of these new comers, so far as one is able to judge from their appearance. The smooth dark-colored bark, the texture of the wood, etc., leads me to think they will be quite hardy here. The trouble with the Russian varieties is that there seems to be very few long keepers among them. If we could get a tree of the Duchess type, that would keep like the Spy or King, it would be a great acquisition. But I have great faith in the Russians, as the trees best suited for the colder sections of this Province; and I believe we shall yet get just the varieties we require among them. There is a prospect of a good fruit year so far as one is able to judge at present. Fruit trees of all kinds are full of blossom buds. Grape vines came through the winter in good shape. Strawberries wintered well; and although they suffered considerably from the cold winds and hard frost of early spring, they are looking well now, and give promise of a good crop. More attention will be given to spraying fruit trees this year in this country than ever before; people are finding out the necessity of it.

G. C. GASTON, *Craighurst, Ont.*

CANADA'S GREAT INDUSTRIAL FAIR.

SIR.—On revising the prize list for our next Exhibition, our Committee have added prizes amounting to fifty dollars (\$50) for the best exhibit of fruits grown in the Dominion of Canada, by any Electoral District Society, Horticultural Society, or Fruit Growers' Association. They have also increased the prizes for plants in pots by nearly three hundred dollars. The prizes for the best display of plants in pots are now very liberal, being \$75, \$50 and \$25.

H. J. HILL, *Secretary, Toronto.*

TO A "WEEPING WILLOW" IN GRIMSBY
CEMETERY.



BENEATH the mossy bosom of
 the sod,
 With slow and reverend hands
 we laid to rest
 Our loved ones side by side.
 Sweet thought of God
 That raised thy head, child of our
 mother's breast.
 Thy pendant frondlets droop so kindly o'er,
 And sigh amid the sough of summer
 breeze ;

While softly surging wavelets on the shore
 Are murmuring sweetly, minor symphonies.
 Kind sympathizer, burden-bearer, friend ;
 Love, like an autumn mist, rests on thy leaves,
 In unshed tears ! with ours thy love doth blend
 While the fell Angel gathers up his sheaves,
 Thy beauteous fringe, thy heavenly drapery,
 The sleeper mantles, as love's mystery.

Grimsby,

O. G. LANGFORD,

In McMaster Monthly.



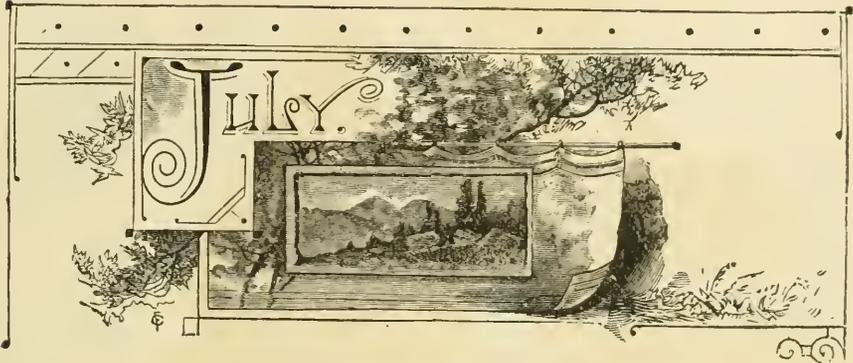
DWARF JUNEBERRY.

THE
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No. 7.



DWARF JUNE BERRY.

AMELANCHIER CANADENSIS.



AMONG the new fruits which seem to be possessed of a certain degree of merit, is the Juneberry, which is indigenous to a large portion of North America. There are a number of varieties of these, ranging from about the size of a currant bush to a handsome ornamental tree. The latter form may be found growing alongside the old forty-mile creek at Grimsby, and it is handsome enough to grace a lawn, especially when in bloom. The dwarf varieties, no doubt, were originally introduced from the Rocky Mountains. These are more productive and fruitful than the larger growing ones.

The fruit of the Juneberry is delicious, and is very desirable for pies, jellies, jams and sauces. The Indians have long known its excellencies, and use it, both dry and fresh, freely. It is a wonder that it has not been more frequently mentioned in papers descriptive of our native fruits.

The chief difficulty in raising this fruit is in combatting with its numerous insect enemies, and, in populous districts, perhaps still more serious enemies are the boys and birds, all of whom are extremely fond of it. As the form most likely to be grown in the garden is the dwarf variety, which is the subject of this sketch, it will be an easy thing to protect it from the birds by the use of leno, but this would be impracticable if it were grown in large quantities for market. However, it has recently been noticed that, where it is grown by the acre, the quantity of fruit taken by the birds is scarcely noticeable.

In season, this berry comes very opportune, just after that of the currant and gooseberry.

Prof. H. E. VanDeman, United States Pomologist, says of it: "I am not aware that any attempt has been made to improve, by cultivation, the tree-like form of the species, but in the case of the dwarf forms some advance has been made by way of subjecting them to garden culture, and with quite satisfactory results. There is really much in this fruit to encourage the experimenter in the work of domesticating and improving the species."

Mr. Greenlees says in the *Orchard and Garden*: "More of these berries in the market would be found quite profitable, if brought in early before whortle berries. Those who have had a taste of the wild service berry and have liked it, eagerly pounce upon the stray quarts and pints of this "upper ten" relative, and are glad to pay a high price for it. The culture of the Juneberry is very simple, similar to that of the currant, which it resembles in size and habit. It is increased from rooted suckers, and I have never seen it infested by insects or disease. Very tiny bushes of it bear heavy crops of the pretty fruit, of a dark, reddish purple color. The flowers are also pretty and showy, larger than those of the wild Amalanchier, whose white, graceful, tassel-like flowers are so conspicuously beautiful in spring. We cannot have too many kinds of fine berries even in June."

A special variety of dwarf Juneberry, called "Success," commended by Prof. VanDeman has been propagated for sale by J. T. Lovett, of New Jersey. Whether it is really of value for market, or will simply be confined to garden culture for home uses, is still an open question. No one in Ontario, so far as we know, has made any attempt to grow them for market purposes. The fact, however, that a variety, commonly known as the Saskatoon berry, grows freely in the North-West, encourages us to expect that this Juneberry may be a useful fruit to grow in that country.

PICKING, AND PAYING BERRY PICKERS.—I would rather pay \$250 to \$400 per acre for land near a good market, than \$25 for land of equal fertility 20 miles distant. I can save annually \$150 to \$175 per acre in express charges, commissions and lost berry crates. Engage your pickers early and pay good ones 2c. per qt. the season through; others who are needed only in a rush, 1½c. I give my pickers a stand containing six quart boxes. When filled, this is taken to the foreman in the fruit shed, who gives a tin check stamped with my initials for it. At night these checks are called in and each picker credited on a berry card his day's picking. Saturday night all the pickers are paid off at the rate of 1½c. per qt. the other half cent being held as a hostage until the season is over. Crate as soon as possible and place in a cool cellar. Avoid commission men, and sell direct to merchants who do a retail trade.—*Farm and Home.*

PEACH LEAF CURL.

(EXOASCUS DEFORMANS.)

SIR,—Is there any remedy for the peach leaf curl? Already, May 26th, the young leaves are showing its presence. The prospect of a good peach crop is so favorable, that I would like to try any means of stopping this curl.

W. SMITH, *Winona, Ont.*



UNFORTUNATELY we know of no remedy for this evil, at least none that can be applied so late in the season as this. Prof. Scribner suggests spraying the trees before the buds begin to swell, with a strong solution, 30 or 40 per cent. of sulphate of iron, as a preventative. The curl, though usually considered a minor evil, has, of late years, done us much mischief, taking off both fruit and leaves before maturity. Sometimes the curl kills the young shoots.

Mr. E. Ainslie, of Beaconsfield, wrote for this journal in May, 1888, that he had succeeded in destroying this fungus by burning old leather on some coals in a tin pail, underneath the trees. The pail can be levated through the tree by the pitch-fork.

Mr. Briggs, of Massachusetts, also speaks of rubber fumes as being an effective insecticide. He states that he was successful in driving away the rosebug by the use of fumes of burning rubber. It is barely possible that good may result in the use of this remedy, but it has not yet been established. The swollen, powdery appearance of the leaves, affected with the curl, needs no description. Fig. 46 shows a cross section of a healthy leaf, from the upper to the under surface, *a* representing the upper and *b* the lower surface. Of course it is only by the use of a magnifying glass that any such distinction of cells, as these here shown, can be discerned. The fungus begins on the leaf as a small swelling on the tissue upper half of the leaf, and spreads until it affects the whole surface, and consequently becomes nearly double in width and greatly increased in thickness. As a result the leaf finally shrivels and drops. The tree is thereby so weakened as to lose its fruit as well as its foliage.

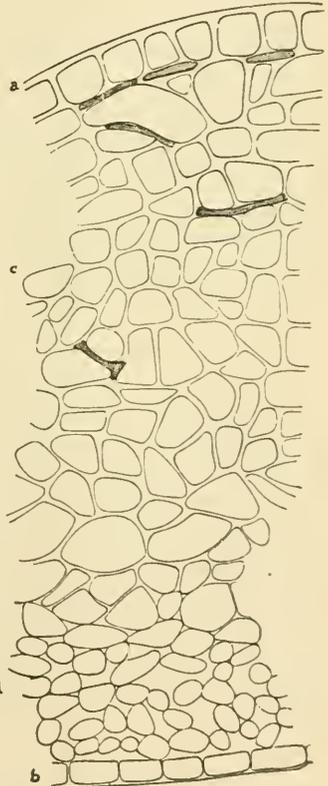


FIG. 46.

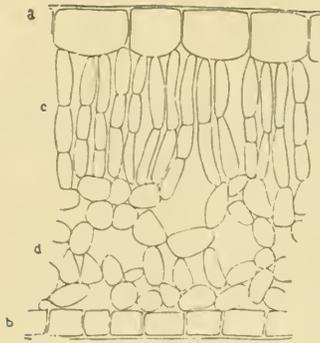


FIG. 47.

Fig. 47 shows a vertical section of a leaf thus affected, swollen out of the normal thickness; *a*, as above, representing the upper, and *b* the under surface. The cellular structure of the under section is very little changed, but the change in the upper portion is easily seen. The walls between each of the cells above have become much thickened, and the long narrow cells much swollen and divided. The result will be that the leaf will have a tendency to curl underward. The dark lines in these cells represent the vegetative portion of the fungus, which penetrates among these cells. This vegetative portion throws out numerous branches, as shown in Fig. 48. These enlarge and form asci or fruiting portions, containing six or seven spores each, which are the means of spreading the disease. Sometimes a somewhat similar effect upon the peach leaves is produced by the peach tree aphid, when it is very abundant. This louse, by sucking the juice from the under side of the leaves, cause hollows with corresponding reddish swellings above, and the leaves, in consequence, are made to curl. These may be destroyed by a decoction of tobacco and water, or by the kerosene emulsion.

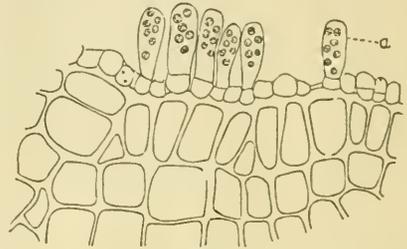


FIG. 48.

A MODEL EXPERIMENT STATION.

ONE of the most novel, instructive and elaborate exhibits, and one that will undoubtedly attract the attention of every scientific person and scholar interested in any phase of agricultural life, will be that made by the Association of American Agricultural Colleges and Experiment Stations. This exhibit will occupy nearly 8,000 square feet of space, and will be located in the southwest corner of the building, on the first floor. It will represent the entire work of a model Agricultural Experiment Station, covering entirely the field of experiment and research in crops, botany, horticulture, entomology, feeding stuffs, animal nutrition, dairy solids, milk testings and veterinary science, and will include an elaborate and complete botanical, biological and chemical laboratory.—*Selected.*

A GOOD PRACTICE commends itself to the orchardist in the cultivation of hoed crops between trees, not alone in the extra air and sunlight given to the soil, but in the moisture saved for tree's use. Mulching is a great thing for trees, and next to mulching is surface stirring.—*Farm and Home.*



THOMAS BEALL, Esq.

SOME PROMINENT CANADIAN HORTICULTURISTS.—XVI.

THOMAS BEALL, ESQ.



IN continuing the sketches of those gentlemen who are prominent in Canadian horticulture, we are enabled to give in this number a brief notice of the life and work of the Director for the Fifth Division, to which position he was elected in 1878, and has ably filled ever since.

Thomas Beall was born at St. Blazey Gate, Cornwall, England, in May, 1828. In 1840 he came with his parents to Canada, who settled on an uncleared farm near the centre of the Township of Whitby, Ontario County. Here our Director, then a lad of twelve years, commenced his experiments in fruit culture, which he may be said to have continued up to the present. His neighbors living on the front assured him that not even the apple would succeed so far north of Lake Ontario; but, nothing daunted, he resolved to try. In 1860 he removed from Whitby to Lindsay, and at once commenced experimenting in horticulture, and has now demonstrated that not only apples, but that some varieties of all of the staple fruits, except peaches, could be successfully grown. He has planted nearly a hundred varieties of apple, and forty of pear. Of the apple, some sixty kinds are succeeding well, though of the pear only four sorts have yet proved to be a success.

Nor did Mr. Beall confine his experiments to fruits alone, but proved that it was quite within the range of possibility to grow many of the best varieties of flowering shrubs and plants, including many of our most choice hybrid perpetual roses. Of the latter there are now growing in his grounds, in perfect health, some thirty varieties, the most of which were planted a quarter of a century ago. He was also the first to plant the black walnut in that part of the country. In 1880 he read before our Fruit Growers' Association his first paper on the suitability of the black walnut for cultivation in Central Ontario. This essay was widely copied by both urban and rural newspapers, and doubtless many thousands of that valuable timber tree are now growing that would never have been planted but for the philanthropic spirit that actuated Mr. Beall in giving to the public the results of his black walnut planting.

The public is also indebted to him in large measure for the efforts that are being made to secure greater uniformity and correctness in the judging of fruit at fairs, as well as to give to the residents in each agricultural division a list of the varieties of the several fruits that can be successfully grown therein.

The crowning work of Mr. Beall's life, however, will be the accumulation of meteorological data, the value of which, in its bearing upon the labors of the fruit grower, can hardly be over-estimated. When such observations shall have been so extended that we can know the average summer heat and winter cold,

and the extremes of each at least in every county, the number of days without injurious frost, and of summer sunshine, the average rain-fall, and the force and direction of prevailing winds, most valuable data will then be available for the solution of fruit growing problems. To this work Mr. Beall has given much careful attention for the past twelve years, during which time he has accumulated a large amount of valuable information.

D. W. B.

A BERRY TICKET.

Here is a cut of a ticket which I find very convenient in berry time, in keeping accounts with my pickers :

Tens : 1. 2. 3. 4. 5. 6. 7. 8. 9.
JAMES M. BROWN, Grower of Small Fruits. Burden, N. Y.
Units : 1. 2. 3. 4. 5. 6. 7. 8. 9.

The row of figures at the bottom represents units from one to nine ; the upper row of figures consists of tens. Any figure punched in this row is equal to 10 times the figure punched below. If you punch eight in the tens row, it is equal to 80. If a picker picks in a day 73 quarts, I punch seven in the upper row and three in the lower. If a picker picks 173 quarts in a day, I punch nine and four in the upper row, making 90 and 40, or 130 quarts ; then I punch seven in the lower row. I do not take up the tickets until the season is over. This method does away with book accounts, and it is easy to settle with each picker at night when through picking. One should use a good punch—one which cannot be imitated.—*Rural New Yorker*.

THERE ARE MANY REMEDIES for mildew and blight, but nothing is better than a simple solution of sulphate of copper. It is free from the features of other fungicides. It is in no way injurious and its operation is sure. Dissolve 1 lb. of sulphate of copper in 800 gals. of water, or 2 oz. in 100 gals., or 1 oz. in 50 gals. Probably a much weaker solution would answer, but that is for future experiments to decide. I spray the tree with this solution, using a plain brass hand syringe 1½ in. in diameter, which holds a pint. It has a rose nozzle with 99 holes, three times the usual number, and will throw from 20 to 25 feet, spreading the spray about 6 feet.—*Farm and Home*.

GROWING THE CURRANT.



THE many plantings of currant bushes one sees, bereft of foliage in mid-summer, bespeak either a want of knowledge or a lack of care on the part of those who tend them. The erroneous idea that currants may be planted anywhere is an all-prevailing one. To have them do well they need deep soil and, preferably, a damp one. A few years ago I set a row of the Versailles in such a location, and the size of the bunches and berries was really wonderful. Some of my neighbors thought that I had possession of some new sort, and more than one of them got cuttings from me, because they thought it a new kind. As a rule there is too much of the let-alone idea prevailing, and something more than this is necessary to have good currants. My neighbors have an idea that it hurts their bushes to be dug around. Now, the bushes of mine, referred to above, were on the boundary line of a grass plat and a vegetable garden, and on the latter side of them the soil was forked up every spring, and it certainly showed no injurious results at all. Still, as these bushes root near the surface, digging should not be done close to them. Forking is better, as being less liable to hurt the roots by cutting them. Those who do not get good results, probably leave their plants too much to themselves. Unless wood needs cutting out annually, the cutting back of a shoot here and there to cause some strong new ones to form for the next season, is advised. The plants of my own that I have referred to were not mulched, save by the sod on the one side of them, and they never lost their leaves in summer; nevertheless it is a good plan to do it, the coolness and moisture it induces being of much benefit. Young plants, too, are much better than old ones. It is better to cut old ones back, to have them form new wood, or plant younger ones. When not practicable to grow them in the exact station they would like, mulch them in summer with coarse hay or grass, to gain moisture, and be sure that there is good food for the roots. This will lessen the tendency of the bushes to drop their foliage in summer, a something now all too common, and which weakens the plants greatly. Partial shade is a benefit to currants, but it must not be that afforded by large trees, because, to get this, they have to be so near that they get into soil robbed of its food by the roots of the trees, which extend a long distance from the tree. That afforded by some fence, or building, is better. Regarding the best sorts to plant, there are some of our marketmen here who stick to the old red Dutch, as they say they get the greatest quantity from it. But if this doubtful statement be correct, there is no doubt at all that the larger fruit of Fays, Cherry and Versailles bring the better price. In the long run the larger sized fruit sells the best of all. Currants are largely used for preserving, and for this purpose also is a good sized fruit the best — *Green's Fruit Grower*.

PREPARING FOR CHICAGO.



R. N. AWREY, has been appointed Commissioner for Ontario to the World's Fair, and Mr. A. H. Pettit, our President, superintendent of the fruit exhibit at the Great Exposition. This gentleman is now, June 8th, in Philadelphia, where he will meet Prof. Saunders and purchase a large number of suitable jars to contain the choice Ontario fruit. Prof. Saunders has been experimenting with various liquors in order to find one that will effectually preserve our berries, peaches, pears and other fruits, without changing the color and causing shrinkage; he is placing all the results of his investigations at our disposal.

Ontario has a large and well-chosen allotment of space of 2,400 square feet in the Horticultural Hall, at Chicago, for her fruits, and it is desirable that it be filled the whole season, from the first of May until the end of October, with the best possible display of our fruits, both canned and fresh.

Arrangements are now being made to have a cold storage in Chicago, ready by the first of November, for keeping a good stock of the different varieties of our winter apples and pears. These will be brought out as required during the first month of the exhibition.

Each Provincial Government has agreed to make as fine a collection of their fruits as possible, so that Canadian progress in this industry will be fully represented. Each will undertake the work of preparing its own fruit for this great exposition, and the expenses of providing containers for the same.

Speaking of the grandeur of the horticultural exhibit, a recent bulletin says :

"In the rear curtains of the building will be shown the fruit exhibit, which will include all varieties grown in any part of the world. As far as it is possible to do so, probably in a great majority of cases, fine specimens of the natural fruit will be shown. Otherwise wax models, so perfect in appearance as to be indistinguishable from the real fruit, will be substituted. For this exhibit about 44,000 square feet, or more than an entire acre of space, is reserved. A very complete and splendid exhibit of citrons and other fruits will be sent from California, Florida, Mexico and South American countries. By means of refrigerators ripe fruit can be sent long distances without injury, and after reaching the Fair cold storage facilities will be available to keep it in perfect condition.

"In the north pavilion of the Horticultural building will be a very extensive display of vegetables, canned goods, horticultural appliances, etc. In the second story of each pavilion will be a restaurant capable of seating about 200 and profusely adorned with ferns, flowers, and exotic plants. Outside will be a number of greenhouses, where visitors may see an exceptionally complete collection of tropical vegetation. There will also be large auxiliary greenhouses, not open to the general public, where plants will be brought to perfect exhibit condition, and where plants will be cared for after their beauty season has passed.

"It may be rightly inferred that the Horticultural exhibit at the exposition will be the most complete and extensive ever made or attempted. It is certain to attract a great deal of attention and prove to be of great scientific and educational interest. It will have important features not specified above, as, for example, a very complete collection of insects, both the injurious and beneficial ones, whose operations affect the fruits and other products of the horticulturist. It is the intention to have in one place an exhibit of all of the species of plants mentioned in the Bible, and in others collections of almost equal historical interest."

PRESERVATION OF FRUITS FOR CANADIAN DISPLAY AT THE CHICAGO EXPOSITION.



E are just in receipt of an interesting circular from Prof. Wm. Saunders, Executive Commissioner for Canada, giving a list of the various fluids recommended for preserving fresh fruits in glass jars for the Chicago Exposition. We give our readers a large extract from the same, for it is often useful to know what preserving fluids are best, for other purposes as well.

GENERAL DIRECTIONS.—Select the finest specimens of the fruit both as to form and size. Handle them carefully to avoid all bruising and place them in bottles, arranging the specimens so as to show the fruit on all sides. Fill each bottle to the neck, then pour on the fluid recommended, filling the bottles to within half an inch of the stopper so as to entirely cover the fruit, then place the stopper in the bottle and run a little melted beeswax or paraffine over the joint to make it air tight. Tie the stopper down with a piece of canvass or strong cotton and attach to each bottle a label containing the following particulars : Name of variety of fruit, character of soil on which it was grown, the name of the grower and post office address, adding the name of the province in which the party resides. Wrap the bottles in paper to exclude the light, and preserve in a cellar or other cool place where they may be kept from freezing until required for exhibition. Strawberries and raspberries should be cut from the plants or bushes with a pair of scissors, leaving a short piece of stem attached.

FLUID NO. 1.—Coal Oil or Kerosene. This fluid has been found more satisfactory than any other yet tried for preserving strawberries for exhibition. Being lighter than water the berries sink in the fluid and their natural form and appearance may thus be well preserved. It has also been found useful for Blackcap raspberries. Fruit preserved in this fluid should be free from drops of water (dew or rain) on the outside.

FLUID NO. 2.—A solution of Boric Acid in water in the proportion of one per cent. This may be made by dissolving half a pound of Boric Acid in fifty pounds of water, agitating occasionally until the solution is complete. If the fluid is not clear it may be allowed to stand and settle and the upper clear portion poured off and the remainder filtered through filtering paper.

This fluid may be used for the preservation of red and black raspberries, blackberries, red and black cherries, black currants, and other red or dark coloured fruits, including red apples.

FLUID NO. 3.—A solution of Zinc Chloride in water in the proportion of two per cent.

This is readily made by dissolving one pound of Zinc Chloride in fifty pounds of water. Allow the mixture to stand, pour off the clear fluid and filter the remainder.

When poured on the yellow varieties of raspberries this fluid has been found to preserve their colour well ; it is also recommended for the preservation of red and white currants, gooseberries, white or yellow cherries, peaches and other light coloured fruits, including green and yellow apples.

FLUID NO. 4.—Solution of Salicylic Acid one drachm to the quart. Dissolve one ounce of Salicylic in eight ounces of Alcohol and add this to two gallons of water, shake well, allow it to stand for a short time, when it will be ready for use.

This fluid has been found useful for preserving red and dark coloured grapes ; it may also be used in place of Fluid No. 2 for the fruits mentioned under that head, although it has not proven quite so successful as the Boric Acid.

Fluid No. 4 was used successfully by the writer in preparing fruits for the Indian and Colonial Exhibition in 1886. Nos. 1, 2 and 3 are recommended as the most successful of a number of fluids tested during the past year by Dr. Chas. E. Saunders, of Ottawa.

THINNING FRUIT.—An experienced orchardist in the East covers the same ground we have already advocated in *Fruit and Flowers* in what follows : He says that “he thinned the fruit on his trees at the rate of twelve trees in ten hours. They were large enough to yield an average of six bushels to a tree. He figures in this way : If he had a thousand trees it would cost him \$85 to have them thinned, with labor at \$1 a day, or \$170 at \$2 per day. He has but few culls among his apples, and the selected crop will easily bring him ten cents per bushel more than the fruit from trees which were not thinned out, which, at six bushels to the tree, would increase his sale by \$600.

“Again, he claims still another greater advantage. It is not the growth of the fruit that exhausts the tree so much as the formation of the seed, and reducing the number of seeds grown by picking off one-half or two-thirds of the fruit that sets, he relieves the tree so that it can form fruit buds in the fall for the next year’s crop. In ten years he has not had a failure of the trees to bear every year, excepting when they were overloaded and he neglected the thinning. Then all the strength was used up in growing fruit, or rather seed, and there were no blossom buds formed.”

The last clause in the above has not often been so plainly stated and is often overlooked, but is so plain that it is correct that we wonder that sensible men should need to be told of it.—*Fruit and Flowers*.

THE BEST REMEDY FOR BLACK KNOT in plums is the knife, cutting out all knots early in spring, before the leaves appear. The branches and trunk should then be sprayed with the simple solution of sulphate of copper—1 lb. to 26 gals. of water—to which 2 oz. of Paris green may be with benefit added. All wild rees in the neighbourhood should be treated in the same way, or cut down.

EXPERIMENTS WITH FRUIT PRESERVATIVES FOR EXHIBITION PURPOSES.



URING the past three years experiments have been carried on at the Central Experimental Farm, with the object of ascertaining the effect of certain chemical solutions in preserving fruits. In view of the coming Exhibition at Chicago, and the necessity of placing samples of the fruit of the Dominion on the tables next May, in bottled form, the publication of the most important results so far obtained—though in some instances they are given tentatively—will, it is believed, prove interesting and useful to intending exhibitors and those who have charge of the fruit displays from the various provinces.

While many of the solutions tested have not proved to be successful fruit preservers, others have given good results. The work is still in progress, and the confident hope is entertained that before long it will be possible to give more definite instructions in regard to the proper fluids for the different fruits.

In considering this matter, it is necessary to remember that not only must the fruit be preserved from spoiling, but that its color and form be retained. While a certain solution may serve to retain the form and texture of the fruit, it may be found to discharge or extract the color. Again, on account of the density of the fruit-juice being greater than that of many preservative solutions, osmosis takes place—the fruit bursts and the whole becomes an unsightly mass. To overcome this latter trouble, glycerine has been used. If glycerine is added to the fluid until the fruit remains suspended in the mixture (not floating on top), the fruit will not be apt to burst or shrink, as the fluid will be of the same density as that of the fruit-juice, and there will be no interchange of liquids. From 5% to 10% of glycerine are the quantities recommended. Fairly satisfactory results, however, have been obtained without the addition of glycerine, when the following were the preservatives used :

Chloral Hydrate.—Four ounces to one gallon of water, for red currants, cherries, grapes and raspberries. This extracts the color of high colored fruits, somewhat, but, as a rule, not to the same extent as salicylic acid. It is, however, more expensive.

Corrosive Sublimate.—For red and black grapes, dark colored cherries and currants, it is advisable to use two solutions, the one in the proportion of one-quarter ounce to the gallon of water, the other half an ounce to the gallon. The latter strength, while preserving most thick-skinned fruits perfectly, is apt to coat them with a thin white film of calomel. It is, however, useful for preserving such varieties of grapes whose general appearance would not be much affected by this deposit, and, according to Prof. P. Pichi, of the Agricultural School, Cognellians, Italy, may serve to replace the weaker solution after the fruit has been

preserved for some time. Experiments are now being made with a view of obviating this deposit of calomel spoken of above.

Salicylic Acid.—One-quarter ounce to the gallon of water. For tomatoes, red and yellow raspberries and blackberries. One of the best known and most generally used of the antiseptic fluids. In order to render this acid soluble, it is necessary to treat it with hot water, allowing the solution to cool before using. As already stated, the bleaching tendency of this fluid is its principal objection. With tomatoes and yellow fruits it has given good results.

Sulphurous Acid.—For pears, peaches and light colored fruits. This may be prepared by saturating water in a barrel with the fumes of burning sulphur. The barrel being half full of water, a tin or iron vessel holding flowers of sulphur is floated on the water and the sulphur set on fire; when the flame goes out and a sufficient time has elapsed to allow the sulphurous acid formed to dissolve in the water, fresh air is admitted by taking off the cover and relighting the sulphur. This should be repeated several times.

Coal Oil.—This has been used successfully in the preservation of strawberries and raspberries. A colorless grade of oil should be employed.

In selecting the fruit to be preserved, great care should be exercised in picking and handling. Raspberries, strawberries and blackberries should be cut instead of picked, leaving the receptacle and a small portion of the stem attached to the fruit.

Ottawa, Ont.

JOHN CRAIG, *Horticulturist.*

FRANK T. SHUTT, *Chemist.*

SULPHATE OF COPPER FOR SCAB.



R. JABEZ FISHER, one of the experimenters in connection with the Hatch Experiment Station, has laid us under a debt of gratitude, if his views are well grounded. He believes copper sulphate in simple solution to be just as effective in destroying injurious fungi as any other preparation of copper. Moreover, it is much less expensive; the amount required being only one pound to 600 or 800 gallons of water, while the Bordeaux mixture requires four pounds for 50 gallons of water; counting the copper sulphate at 8c. a pound, this is 32c. per barrel full, which amounts to a considerable sum in a large orchard.

His plan of operation is as follows: As early in spring as weather permits, gather and burn all stubble, weeds, grass, and *debris*, thus disposing of a large proportion of the winter spores of the various fungi. Then spray all trees, trellises, and vines, and the surface of the ground not burned over, with sulphate of copper—one pound to 100 gallons. This strength is only allowable before foliage has developed. Just before blossoms open, spray all foliage with the solution, one pound to 800 gallons, adding Paris Green, one pound to 200 gallons. This should be repeated two or three times, in the month of June, when the great bulk of both insects and fungi appear.

THE FRUIT PROSPECTS.

A grievous change has come over the fruit prospects for the summer and fall of the current season. During the blooming season, the hopes of the fruit grower were highly exalted in anticipation of an enormous crop. Never were our apple trees fuller of bloom, and the same is true of the pear and cherry. The even year is usually the bearing year with the greater portion of orchards in Ontario, and it was only fair to suppose that this season would have been unprecedented in a prodigious yield. The abundant rains, however, which fell during the month of May appear to have washed out the pollen from the blossoms and so caused imperfect fertilization. More than this, it favored the development of fungi and blight of every kind. As a result, the young fruit was no sooner formed than it fell wholesale from the trees, and after a few days, it was evident that, instead of a very abundant crop of apples, pears and cherries, there would be, in many sections, the lightest crop known for years.

Along the line of the Great Western Railway, in Southern Ontario, the Baldwin has retained its fruit better than most other varieties; the Roxbury and Golden Russets are fair, and the same may be said of the Gravenstein and King, but the Greening, which is one of the most largely planted varieties, is almost a total failure, and so is the Spy, the Early Harvest, the Red Astracan, and many other varieties. This is so at Maplehurst and also in a greater portion of Southern Ontario.

The pear crop is almost a failure. The Bartlett particularly is either barren of fruit, or what fruit remains on the trees is so sadly blackened with *fusicladium*, that it will scarcely be fit for market. We have sprayed carefully with the Bordeaux mixture, but not until the scab had appeared. We hope, however, that it may check further progress of this evil.

The English cherries are a complete failure. There will be a few Knight's Early Black, and a few Black Eagle, but the trees of nearly every other variety have shed their fruit.

The plums have set remarkably heavy, but in many localities the monilia, or fruit rot, has set in so severely as to threaten the entire loss of the crop.

The leaf curl has been very bad upon the peach, and, as a result, the peach crop will be very considerably thinned.

Small fruits and grapes, on the other hand, are very promising. Indeed, should we have exemption from the mildew, in our orchards, there will be a most prodigious crop of grapes. Encouraging prospects lie before us with regard to raspberries, currants, gooseberries and other small fruits. It is possible that the abundance of these may help the disappointed fruit grower in meeting at least his needful expenses in the care of his property, even though it leaves him no balance in the bank.

The following are a few notes from letters received from various counties concerning the prospects :

PERTH COUNTY—Sir—Strawberries will be a heavy crop; currants, gooseberries and raspberries promise well; apples setting fairly well; pears moderate; plums very light. The latter are so badly stung with the curculio that the crop promises little or nothing.—T. H. RACE, Mitchell, June 21st, 1892.

Sir.—The exceptionally heavy rain falls of late have sadly marred the fruit prospects. Summer and fall sorts, however, promise well, especially the Duchess of Oldenburg. In winter varieties, the American and the Golden Russett, Swazie, Grimes and Ribston, also will be a fair crop. Pears, cherries and plums will be a medium crop. Currants and gooseberries will be light. The English sorts of the latter are mildewing badly for the first time with me.—J. D. STEWART, Russelldale, June 18th, 1892.

PICTON COUNTY—Sir—The prospects, as far as I have been able to ascertain, are very slim. Small fruits are likely to be an immense crop; cherries, scarcely any; plums, a failure; pears, good in some sections. There was an immense bloom, but the unfavorable weather and frequent showers have ruined the prospect. Some varieties of apples which happened to bloom in a favorable time have set well, but there is any amount of the apple scab upon them. We are spraying and doing the best possible, but we fear the frequent rains are very much against us.—P. C. DEMPSEY, Trenton, June 21st, 1892.

PETERBORO' COUNTY—Sir—In this neighborhood there was an extraordinary show of blossoms, especially upon the apple trees. The fruit set, however, is small in comparison. I look for a fair crop of apples. There will probably be more need of spraying this year than there was last year. Plums and cherries will be scarce. The young trees and vines are doing wonderfully well. Insects and fungus growths promise to be troublesome.—E. B. EDWARDS, Peterboro', June 21st, 1892.

CORNWALL COUNTY—Sir—You ask me for the prospects for fruit. They were never better. The season, as a rule, is about a week later than last year, but we have escaped the late frosts. True, we are having very showery, humid weather, but the growth is wonderful and the prospects good. Spraying of fruit trees, thanks to the HORTICULTURIST and the bulletins of the Government Experimental Farm, has been, and is, more universally resorted to; and as I firmly believe humidity of the atmosphere is the cause of the apple scab and other fungoid diseases, there is greater need of it than ever. I, myself, am setting a good example by spraying liberally, and will report the results at the close of the year.—W. S. TURNER, Cornwall, Ont.

OTTAWA—The fruit prospects are very cheering. Apples promise a good crop. Plums and cherries have set well, and should yield above the average. The raspberries were considerably injured in most sections; the crop will probably fall below the average, and will be somewhat later than usual. Strawberries are fruiting heavily. With a continuance of the present warmth and excessive moisture, we may look for the scab.—JOHN CRAIG, Experimental Farm, Ottawa, June.

SIMCOE COUNTY—Sir—The prospects for fruit here are the best we have had for a number of years, excepting plums, which are light.—G. C. CASTON, Craighurst, June.

ESSEX—Sir—I have just returned from a trip around Windsor, with our president, gathering fruit for the Chicago Exposition, and may say that strawberries are abundant, and the sample good. Cherries are not so plentiful, not being more than one half a crop. Currants and gooseberries two-thirds of a crop. The plum trees in some places are heavily laden, and in other places not so fortunate. On the whole I should expect 70 per cent. of a full crop. The peach blossoms were caught with the early frosts, and hence they will be as scarce in this locality as hens' teeth. Pears are setting well, and there will probably be seventy-five per cent. of a crop. Some varieties will be spotted with fungus. The apple trees promised much at blossoming time, but, alas, to-day the crop promises very little, not a quarter of a crop, probably, owing to the many rains during the blossoming time, and since.

FOREIGN PROSPECTS—Mr. J. N. Johnston, Fruit Merchant, 21 Victoria Street, Liverpool, who is agent for the CANADIAN HORTICULTURIST there, writes that the prospect for fruit in England and the continent is good. He says, "A friend who has visited Ghent, Antwerp, Brussels, Rotterdam, Amsterdam, Hamburg, and up the Elbs, driving for many hours through the principal fruit garden districts, reports to me that the apple crop is everywhere large. Pears are short there and in France."

GIPSY MOTH.



THIS is one of the worst enemies of the fruit grower, and we hope that it may never invade Canada. It has been devastating a large area in Massachusetts, spreading throughout that State with fearful rapidity, until energetic remedies were adopted to rout it. This insect was introduced about the year 1868, by Mons. L. Trouvelot, a Frenchman, then living in Massachusetts, and experimenting there in the production of silk. From this beginning, this moth has been distributed in twenty-nine cities and towns in the western part of Massachusetts. It feeds upon the apple, plum, cherry, quince, elm, linden, locust, oak, maple, balm of Gilead, beech, birch, willow, poplar, chestnut, catalpa, Norway spruce, arbor vitæ, corn, grass, clover, etc. Evidently it is an almost omnivorous insect, and in the infested region, it has stripped clean the village woods, groves, lawns, gardens and orchards, in a wholesale manner. Bulletin 19 of the Hatch Experiment Station, Amherst, Mass., gives a full description of this insect and its ravages, with excellent illustrations.

Last year, it was only with the expenditure of some \$50,000, and setting to work some thirty teams and spraying apparatus, that the terrible pest was kept in bounds. A large force of police was also appointed to quarantine the infested territory and see that the laws were enforced which had been enacted. And now, it is only by the continuance of the same energetic measures that it can be totally destroyed.

The following code of rules, which was adopted by the State with regard to the destruction of this moth, will be of general interest :

“ All persons were forbidden by law to remove the gypsy moth, its nests or eggs, from one place to another, in any city or town, and requested to exercise care against so transporting the gypsy moth on teams and carriages.

“ All persons were forbidden to remove any hay, manure, wood, bark, trees, rags, lumber or shrubbery of any kind, without a written permit from the Department. All loads must be covered with canvas.

“ All vehicles leaving the district might be stopped and delayed until their contents were inspected.

“ No person might remove the bark from trees, nor attempt to scrape and clean them, without first notifying the Department, and having said trees thoroughly inspected and, if found infested, cleaned under its direction.

“ Owners or tenants were requested to gather and burn all rubbish and useless material upon their premises that might provide nesting-places for the insect, and to fill with cement or other solid material holes in trees upon their premises.

“ Windows of houses were protected by screens during the summer months, as the insect lays its eggs in the houses wherever it can gain admittance.

“ Fences and buildings could be torn down if necessary, and the owners were to be recompensed by the State.”

IN CULTIVATING THE STRAWBERRY PATCH, run the cultivator the same way of the rows every time. This will carry the runners with the rows and not tear up the plants as if you went one way and the next time you cultivated went the opposite.—*Farm and Home.*

BLENHEIM ORANGE APPLE AND SAUNDERS' PLUM.

SIR,—The correspondence addressed during the past few months to the HORTICULTURIST on the merits of the Blenheim Pippin must, I think, have fully established that excellent apple in the confidence and favor of the Ontario fruit growers. There never was any question raised as to its high individual qualities, the only one being as to its productiveness, and the complaints as to that still come to me by letter from the localities mentioned in my first article on the subject, namely, Middlesex, Kent, and Norfolk counties. However, the Blenheim is fully re-established in my former confidence and favor as a result of the many positive testimonies as to its productiveness. It was one of the varieties that I recommended to the Fruit Committee as most suitable and desirable for this district; but when the report came out I was somewhat surprised to find that another—the Cranberry Pippin, an apple that I was entirely unacquainted with—had been substituted for it. How the error occurred, or, if not an error, why the Committee meddled with my recommendation, I never learned. I think the correspondence regarding the alleged defect—unproductiveness—has been profitable.

As to the Saunders plum, I was not aware until the last number of the HORTICULTURIST reached me that our good friend, Mr. Dempsey, had stood godfather to that most excellent fruit. I am glad to know that it had so worthy a sponsor. My only crime seems to have been in believing that I had discovered the birthplace of the plum so appropriately named by Mr. Dempsey. It was not a grave offence, and I am not yet certain that I sinned at all in that belief; though there does seem to be a discrepancy as to the season of ripening and I could not desire to conflict with so acknowledged an authority as our good friend Dempsey. But why dwell upon so trifling a matter? The plum that I referred to is a very firm one. If the Saunders is no better but a month earlier, Messrs. Morris & Wellington have in their hands a plum that cannot be surpassed in its suitability to the conditions and requirements of this country.

Mitchell, Ont.

T. H. RACE.

RASPBERRY.—Of the Black Cap family the Older, Tyler, and Shaffer's Colossal, are giving the best crops of best quality for dessert and canning in north Iowa. The secret of setting the tips to secure a uniform stand, is to put them in with the roots pressed downward as in planting the strawberry, leaving the crown at the surface or near it. Deep planting always results in a poor stand. Of the red species the Cuthbert has given the best satisfaction for home use. At the north it will pay to cover the raspberry as is now practiced with the blackberry. By watching the neighbor who has become an expert, it will be found that the job of covering is not as great a labor as is usually suspected.

PROFIT AND LOSS.

HOW SOME CROPS PAY A BIG PROFIT AND OTHERS DO THE REVERSE.



OFTEN a person who has raised a large crop reports the figures, with the profit, to the agricultural press, without telling the other side of the story. The real profits of farming are to be ascertained after averaging up the good crops with the poor ones. A correspondent of the *American Garden* gives some instructive figures of several crops. A plot of one-seventeenth of an acre grew three crops—

lettuce, cabbage and celery. The income was as follows :

617 heads lettuce.....	\$ 12 20
194 heads cabbage.....	8 16
150 bunches celery.....	15 00
Total.....	\$ 36 36
Rate per acre.....	\$601 12

The above plot was manured the fall previous with two tons of well-rotted manure, costing about \$3.50. The plot was cultivated at odd times, and the crops sold with other produce. This plot also supplied a family of six persons with an abundance of the above vegetables.

Plot No 2 contained three acres, and grew potatoes, five varieties, with the following result :

7½ barrels seed potatoes.....	\$ 9 25
800 pounds phosphate, in hills.....	13 76
500 pounds plaster.....	1 50
2 pounds Paris Green.....	50
Digging	3 50
Plowing and cultivating.....	10 00
Interest on land.....	15 00
Total expenses.....	\$ 53 50

RESULT.

23 barrels marketable potatoes at \$2.....	\$ 46 00
5 barrels seed potatoes at \$1.....	5 00
5 barrels small potatoes at 30c.....	1 50
Total receipts.....	\$ 52 50

A plot of three-tenths of an acre was planted with strawberry plants. Everything looked promising for a good crop, when the heavy rains set in, which destroyed much pollen, causing many blossoms to blast. During ripening and picking time no rain fell, thus cutting off the crop still more. The berries were small and ill-shaped. The following is the result :

CR.	
252 quarts berries at 11c.....	\$ 27 72
DR.	
Cultivation and setting.....	\$7 50
Picking 252 quarts at 2c.....	5 04
Interest on hand—1 year.....	1 35
Marketing 252 quarts at 1c.....	2 52
	<hr/>
Profit	\$ 16 41
	\$ 11 31
Rate of profit per acre.....	\$ 37 70

The reader must bear in mind that this crop occupied the land for the best part of two years, which, if taken into account, reduces the profit still more.

The following is his experience with a piece of sandy loam of one-sixth of an acre, planted with sweet corn and squash. The first week in May he applied seven loads of stable manure on sod and plowed it under. After harrowing, he marked out the piece into rectangles, two and a half by three feet, and planted it with white Cory corn and squash, and dropped a good fork-full of well-rotted manure in every sixth hill of every alternate row. He put four kernals of the corn in each of the remaining hills, and then dropped a handful of hen manure and wood ashes, one part of the former to two of the latter. He had a hard time with beetles on the squash vines, but managed to save three-quarters of the hills. The piece was hoed twice by hand and twice with a horse hoe, and the corn finally hilled. The corn was a fair average crop, but the squashes were below the average. August 5, the first corn was picked, and August 13 the stalks cut. The result was as follows :

CR.	
1,275 cars corn.....	\$ 13 50
165 squashes	17 64
Total.....	\$ 31 14
DR.	
7 loads manure.....	\$6 00
1 one-horse load rotted manure.....	75
2 barrels hen manure and ashes.....	1 60
Seed	75
Cultivation, etc.....	4 00
Interest on land.....	1 00
	————— \$ 13 50
Profit.....	\$ 17 64
Rate of profit per acre:	\$105 84

N. Y. Herald.

HOW TO GROW TOMATOES.—Where more than one row is set, the rows should be five or six feet apart. The plants should be kept off from the ground by stakes or some form of trellis, as fruit will soon rot unless kept hot and dry. When the plants get up to about the right size, cut off the ends of the large branches and carry the refuse away. Trim off the bottom branches also, and keep the plants well up from the ground. Many pick the fruit when it turns to a whitish green and place in a south window to ripen. If most of the leaves which cover the fruit are removed, you will get earlier tomatoes and finer flavored ones than can be secured in any other way. To get large vines, select good plants and place them in rich soil. They must have an abundance of water, and large fruit cannot be secured in any other way. To grow premium tomatoes, keep the vines pruned well back and remove the larger part of the blossoms, allowing only two or three fruits to develop. With an abundance of water and fertilizer, you should have no difficulty in growing two pound, or larger, tomatoes.

—*New England Homestead.*

The Garden and Lawn.

CUT-FLOWERS ON GRAVES.

The trough form of flower-holders, designed for use on graves, is not yet so well-known as it deserves to be. These flower-holders can be filled so that they will look very pretty, by the use of a moderate quantity of foliage and flowers, as shown in the engraving (Fig. 49) of the cross annexed, for there is no special incentive to crowd the flowers. Flowers placed loosely in water keep much fresher than if they are crowded. By placing a little sphagnum moss in the bottom of the troughs, and then filling them with water, the foliage and flowers may be kept fresh nearly as

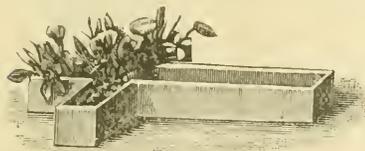


FIG. 49.—TROUGH FLOWER-HOLDER.

long as the water lasts. The holders may be made of zinc or tin, the first being preferable, on the score of durability. The forms most in use are shown in the engravings (Figs. 49 and 50). They can be made by any tinsmith at small cost. The metal should be painted green on the outside, so as to be inconspicuous when the designs lie on the sod.—*American Garden.*

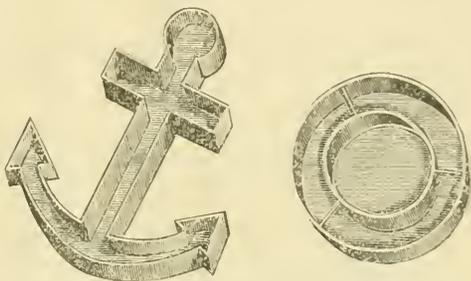


FIG. 50.—TROUGH FLOWER-HOLDER.

A NEW USE FOR TILE.—Common drain tile can be put to a very pretty use. Paint a light color, with the new enamel or metallic paints, and when dry arrange pretty colored scraps on the surface. Stand the tile on end, place a pot of ferns or flower on top, and set it wherever it will be effective, in the hall, on top of staircase, or on the lawn.—*American Garden.*

PETUNIAS FOR PAILS AND TUBS.—If you want a pretty lawn ornament, paint a tobacco-pail a delicate lavender-gray, bore several holes in the bottom, put in two quarts of coarse charcoal, over this a layer of moss, and fill the pail with very light rich earth. In the middle, plant a thrifty young double-fringed petunia, preferably pink, set the pail in a sunny situation, give the plant plenty of water every day and you will be richly rewarded with beautiful blossoms. A large candy pail similarly treated, holding three plants, is prettier; and an old tub or half-barrel, containing five, is prettiest. The plants may be all alike, or each one different; suit your own fancy about this, you will be pleased in any case.—*American Garden.*

THE APPROACH FROM THE HIGHWAY.—Do not stint nor narrow down the approach to your dwelling from the public highway. We like to see one of ample dimensions when we drive up to a farmhouse—one that is hard and smooth and free from loose stones and rubbish—one that betokens the careful, orderly hand. A border of shade trees on each side of the way adds much to the attractiveness of the homestead. A custom which prevails in Holland and some other parts of Europe, and copied in the Sandy Spring neighborhood of Montgomery County, Md., of affixing the name of the farm and that of its owner at the outer gate of the approach, ought to meet with favor and be generally adopted by farmers in this country. The custom, if general, would result in good influences to neighborhoods. It would stimulate every farmer to greater exertions and more care to have all the appointments about his premises in presentable shape for the eye of criticism. John Careless after a while would become ashamed of having his wreck of a barn or his unhinged gates and falling fences conspicuously labeled with his name, and so would go to work to fixing up things in emulation of the worthy examples of Peter Progress, Joseph Thrifty and many others of his acquaintances on the highway, who were not ashamed to let it be known to the passer, who owned and managed their sightly premises. A well-improved farm, then, with an ample driveway to it from the public highway, and your name set up at the entrance so that everybody may know where you are living and who is making the improvements.—*American Farmer*.

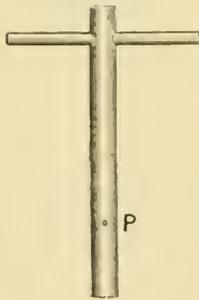
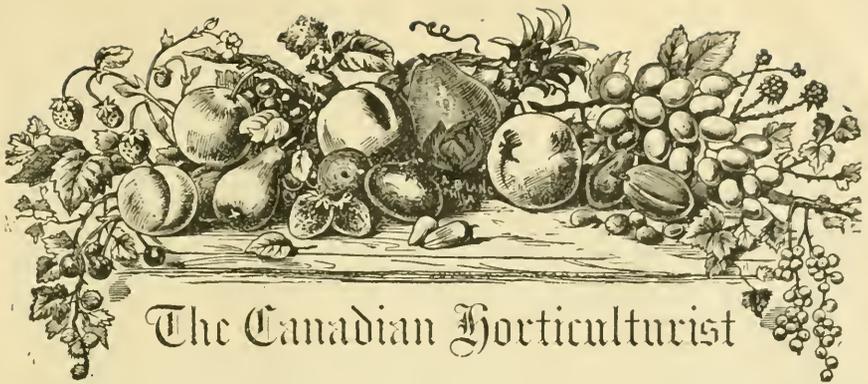


FIG. 51

A WIRE STRETCHER.—Having occasion to build a piece of wire fence with no one to help, the handy boy of the family constructed a stretcher, which did its duty excellently. It is simply a roller, 3 ft. long and about 3 in. in diameter. A stout handle 2 ft long is inserted in an augur hole, about 2 or 3 in. from the top. A wooden pin is firmly fastened about 8 in. from the bottom. It should project 2 in. at least. It stands at right angles with the handle and is marked P on the figure. The wire is twisted around the pin and then wound on the roller, which is pressed against a post, and turned by means of the handle until the slack wire is made taut. One person can do it easily.

BARBED WIRE DISCARDED.—Our best farmers in making new fences are discarding the dangerous barbed wire, which has ruined so many horses and colts. If used at all it is only in combination with some other material. Woven wire is being largely used and seems to meet the requirements of a popular fence. It is neat and comparatively cheap. A single strand of barbed wire may be used on top if desired. Fences are an expensive necessity, but safety to stock and durability should first be considered.—*Farm and Home*.



The Canadian Horticulturist

SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

NOTES AND COMMENTS.

ERRATA.—On p. 165, for *Bubach* read Bubach. The article is commonly known as insect powder.

THE FRUIT EXHIBIT IN LONDON, ENGLAND, referred to on page 185, June No., according to a letter just received from Mr. Wilkes, Secretary of the Royal Horticultural Society, has fallen through for the present year. He will notify us farther should it revive for the year 1893. The reasons given for this, is the concentrated public interest in the general elections, in England, and representations, made by intending exhibitors, that notices for preparations were insufficient.

A VISIT TO CANADA'S VETERAN STRAWBERRY GROWER was made by the writer recently, to secure strawberries for the Chicago Exhibition. Snugly nestled away among the trees in a delightful rolling country, approached by a well-hedged carriage road, Mr. John Little, and his aged partner in life, have spent many happy years. Strawberries are his pets, and he has over eighty varieties. We were highly flattered, when he named his finest seedling, the *Woolverton*. It is a long way ahead of any berry we have ever seen. Every berry a monster and plenty of them.

LETTERS FROM RUSSIA.—We have lately received another valuable letter from Mr. Jaroslav Niemetz, our Russian correspondent. It deals with several specially hardy varieties of apples and pears, which he believes might prove of great value to Canadians; as, for instance, the Panna, Princess, White Doyenne, Slutsk, Beurre Blumenback, Flemish Beauty, Nina (or Manning's Elizabeth), Liegel's Winter Butter pear. Scions of all these he has forwarded us, and they have been placed in charge of the horticulturist of the Experimental Farm at Ottawa for careful propagation. The letter, in full, will appear in our next report.

INSECTICIDES AND FUNGICIDES are not so highly valued by Dr. Hoskins, of Vermont, as by some of us. While it may be well to use them in years of light crops, when it is important to save every apple possible, he thinks that in years of abundance, thinning of the crop done by the various insects is not detrimental to the success of the orchardist. The spotting and cracking of many fruits, he considers a sign of a weak constitution and of varieties unsuited to our climate. These should be done away with and varieties chosen which are more suitable. For instance, in place of the Fameuse, he recommends Shiawassee Beauty; and nearly all Russian apples are perfectly able to resist the spot. This advice is very good for those who are planting orchards, but to us who have large orchards, already planted with staple varieties, it means a great loss of time and very considerable expense, to dig them out and replace them with such varieties as he mentions. No doubt the best ultimate solution of the difficulty is in the line the Doctor indicates.



THE INSPECTION OF APPLES.—The following article is going the rounds of the press:

“Hon. John Costigan, on Tuesday, informed a deputation consisting of Messrs. Pettit and Awrey, accompanied by Messrs. Mackay, Carpenter, Henderson, Boyle and Montague, M. P's, that the Government had decided to amend the Inspection Act to provide for the inspection of apples for export. The deputation were highly gratified to hear the news. The bill which was introduced in the Senate Tuesday night makes it optional with an apple exporter to have his stock inspected at the place of shipment, the maximum fee being placed at 10 cents per barrel. A large number of shippers will avail themselves of the inspection, as it will guarantee them higher prices for first grade apples in the English market.”

We have, as yet, no official information, further than this, that the chairman of the committee, appointed by our Association on fruit inspection, has reported to us that they have received the promise from the Government at Ottawa, that provision will be made for a proper inspection and branding of Ontario apples. The inspector is not to be a salaried official, but his income will be dependent upon the amount of work done. For the work of inspection the maximum charge is to be ten cents per barrel. This, we consider, is rather high, for, while we as growers, very much value the benefits that will be derived from the inspector's brand, especially when making contracts for our apples in foreign markets, yet we shall be loath to pay \$15 a car load to have the work done, unless there is a very well-defined advantage to be gained. Two or three cents a barrel, or \$5 per car load, seems enough to pay, and, in our opinion, the Government should have made provision for a portion of the inspector's salary, at least for a year or two, until the financial benefits were plainly evident to all. Still, if we can succeed in making high contracts with European buyers on the strength of the confidence which will be established by the inspector's brand, we need not begrudge the ten cents per barrel, or, possibly, even two or three times that sum-

❖ Question Drawer. ❖

CURRANT WORM.

SIR.—What shall I use for the worm on my currant and gooseberry bushes. I have been using hellebore with water, applying it with a whisk broom. That does for a few bushes, but for a great many bushes, it is too slow. Would Paris green do? I have been thinking that a knapsack sprayer with a vermole nozzle would answer.

A. W. GRAHAM, *St. Thomas, Ont.*

Certainly Paris green applied with a knapsack sprayer would be one of the most convenient and effective appliances that could be used for ridding the currant bushes of the currant worm. The use of Paris green would be perfectly safe, a few weeks before the currants would be required for use, because the poison is so dilute and so soon shaken and washed from the bushes. Applying hellebore in water with a whisk broom is too slow a process. A watering can, or a sprayer of some kind, would be better. The writer has been applying the hellebore in the dry state, with a very fine sieve, and by parting the bushes and applying it to the lower leaves where the worm first appears, it can be quickly routed. If a sieve is not at hand, a glass goblet is a convenient article, using a piece of lino tight over the top, through which the powder may be sifted. The powder should be applied in the early morning, while the bushes are still wet with dew.

MAPLE LEAF MITE.

SIR.—I enclose you a leaf of a maple tree, covered with something, caused, I suppose, by an insect. I have two maple trees and one pear affected in this way, and the same trees were just the same last year. Can anything be done to remedy this? An answer through the HORTICULTURIST will much oblige,

E. H. D. HALL, *Montreal.*

Reply by Prof. Fletcher, Experimental Farm, Ottawa.

The insect which causes the blistered appearance like that upon the maple leaves you sent last week, is a very small mite, which causes a gall by the irritation of the tissues of the leaves. I have treated of this insect in a preliminary manner in my forthcoming report. Under the head Remedies, I say:

“No satisfactory remedy has as yet been hit upon for this pest. Prof. Comstock's experiments showed that kerosene emulsion sprayed on the leaves was not satisfactory, and all that can at present be suggested is spraying freely with kerosene emulsion at the time the buds burst in spring. It is difficult to mix any powder with kerosene emulsion, but this can be done with care, and flowers of sulphur would certainly be a valuable addition on account of its efficacy in destroying mites.”

This however is unsatisfactory and I am trying to get a better remedy.

PLUMS ROTTING.

SIR,—The plums in my orchard are rotting wholesale (June 17). Is there any remedy?
 SUBSCRIBER at Winona.

The fungus (*Monilia Fructigena*) which causes this rot does not show itself until actually forming its mischievous spores, and then it develops so rapidly that little can be done to destroy it. The application of flowers of sulphur is of some use, and the spraying with the Bordeaux mixture, or the ammoniacal carbonate of copper, will do still more to check the evil. Prof. Scribner thinks that if the fruit were sprayed before infection, with either of the above, the disease might possibly be prevented. Spraying the trees, before the foliage appears, with a strong solution of sulphate of copper, say, one pound to twenty-five gallons of water, will be an excellent preventive. Gathering and burning all affected fruit is also helpful.

This same fungus affects peaches and cherries, and this year seems certain to clear off the trees what little of the latter fruit has escaped the blight. It first appears as a grayish white patch on one side of the fruit. These patches are made up of little tufts, making the surface somewhat uneven. The mycelium (corresponding to roots) of the fungus penetrates among the cells of the fruit, and turns the flesh brown. A single affected plum may produce thousands of spores, and each of these may infect healthy fruit. All that is needed is a high temperature and moisture, and such spores will immediately send down a germ tube through the skin and produce rot.

As the fungus lives over winter in the rotted fruit, the needfulness of their destruction is evident, and since the twigs of affected fruit may also carry the disease over, the advantage of an early spraying with the sulphate of copper is also manifest.

 RASPBERRY CANE BORER.

SIR,—My raspberry bushes are attacked by a borer which appears to enter at the joint and then work in the pith. In some cases it enters near the top, and in others, near the root, and completely kills the cane. This is done apparently in the spring. Last year was the first I saw of it. Some of the canes came out in leaf and then withered down. This year those that were attacked did not leaf out at all. The ones that were affected last year I dug out, planting in others in their places, and I find the newly planted ones affected in the same way. The new canes came out all right but soon became very sickly, and the foliage soon turned very yellow. I have not seen it before around here, but now several gardens are affected the same as mine. The variety of raspberry which I grow is the the Cuthbert. I do not find any reference to this borer in the annual report of your Association. Can you tell me if the same trouble is found in other places, and what is the remedy?

ROBT. PHIPPEX, *Parkhill, Ont.*

This is the raspberry cane borer and it is fully described by Prof. Saunders in his "Insects Injurious to Fruits." It is injurious both to the raspberry and blackberry. The only remedy is occasionally going over the raspberry planta-

tion, and removing and burning all the withered tips, down to the lowest ring, so as to insure the destruction of the eggs. The natural home of this insect is among the wild raspberries. The perfect insect is one of the long-horned beetles, known to entomologists as *Oberea bimaculata*, and has a long, narrow black body with the tip of his thorax and the fore part of his breast pale yellow. The beetles are on the wing during the month of June. The eggs are laid between two rings, made by the insect somewhere near the top of the cane, and, as a result of the stoppage of the sap thus caused, the tip of the canes, above the upper ring, begin to wither and shortly afterwards die. The young larva burrows down the centre of the stem, consuming the pith until it is fully grown, which is usually about the end of August, when it is nearly an inch long. Here it remains during the winter, changing to the pupa state. The beetle escapes in the month of June following, by gnawing a passage through the cane.

GRAFTING DIFFERENT SPECIES.

SIR,—I have one dozen pear trees I wish to change. Will apple grafts succeed well on them, such as Baldwins, Wagners, Ontario and McIntosh Red? If not, why, and what will? Also five cherry trees I wish to change. Will plums do well on them, and if not, why, and what kind will? Are the Ontario, McIntosh Red, and Red Canada, winter apples? Please answer through HORTICULTURIST, and oblige,

WM. E. BROWN, *Blyth, Ont.*

The varieties mentioned are all winter apples. The apples would not succeed very well on the pear stock, nor the plum on the cherry. They would live for a time, and be a kind of curiosity; but very little more. The reason is that the texture of the wood and the habit of growth is somewhat different in each, so that the same perfect union is impossible, as that which takes place when stock and scion are the same kind. Of course special objects are sometimes gained by grafting different kinds, as the pear on quince stock, to dwarf it, the peach on plum stock for hardiness, or to adapt it to a heavier soil; or the pear on the Mountain Ash, to adapt it to dry light sandy soil.

MIXING VARIETIES.

SIR,—A discussion arose between a few Meaford subscribers of the HORTICULTURIST about potatoes, some asserting that, if different varieties were planted in alternate rows, they will mix; others say they will not, and that, no matter how many kinds were planted together, they will keep as separate as if planted in different fields. We agreed to refer the matter to you for solution.

THOS. PLUNKETT, *Meaford.*

No. Potatoes will not mix by planting varieties near each other, because the tubers are not the seed; they are simply enlargements of the root, and are in no way affected by the pollen. The seeds, which are grown on the potato stalks above ground, will mix, when fertilized in this way, by the pollen of another kind; and, if sown, will give rise to new varieties.

BLACKBERRY RUST.

SIR.—Enclosed you will find diseased Blackcap leaves (Souhegan). Please examine, and let me know what the disease is. Is it infectious, and what is the best thing to do for it?

GEO. SMITH, *Vanilla*.

The Blackcap leaves which you send are covered with blackberry rust, a fungus known to mycologists as *Cæoma nitens*. Experiments have been made to ascertain whether the mycelium, or portion of the fungus which grows in the interior, is perennial; it has been proved that it does live through the winter on the underground stem, hence the Bordeaux mixture, or any of our excellen

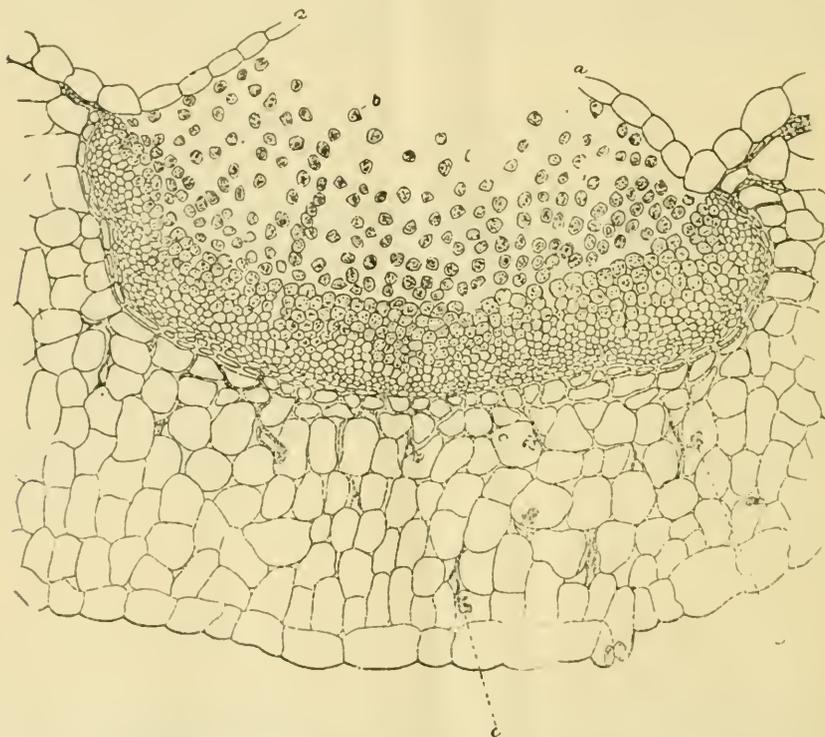


FIG. 52.—*CÆOMA NITENS*, ORANGE RUST OF THE BLACKBERRY.

copper solutions, though effective in destroying the spores, will fail of entirely destroying the fungus that produces them. The only effectual remedy is to root out and burn up all affected bushes, as soon as seen, and before the yellow dust has been blown to healthy plants. The blackberry, especially the Kittatinny, is badly subject to this rust. We have almost given up growing this excellent variety on this account.

Fig. 52 shows a section through a portion of a blackberry leaf, affected with *Cæoma nitens*; *a a* shows the epidermis of the lower side of the leaf, ruptured by it, exposing to view at *b* a mass of golden colored spores, each of which is capable of conveying the disease to other plants; *c c* represent haustoria, by means of which the fungus draws nourishment from the cells.

PEAR LEAF BLISTER MITE.

SIR,—I enclose you leaves of pear trees, diseased or blighted. If you can explain the cause of the blight, and the remedy, I would be pleased. I have eight or ten trees attacked with this disease.

ROBT. FIFE, *Peterboro', Ont.*

This mite is by no means a new enemy. Leaves affected with the same were sent us last summer from J. K. McMichael, of Waterford, and George H. Nixon, Hyde Park Corner; and a description, with remedy, was then given on pages 253 and 355 of the HORTICULTURIST for 1891. However, for the benefit of others we will here insert a brief description of the insect. The name of the blister mite is *Phytoptus pyri*. It is an extremely small mite, that forms blister-like galls on the leaves. In each of these galls there are several young mites, which make their exit through a small hole in the centre of the gall. The young mites, after remaining inside the gall for some time, come out and work their way into the tissue of the leaves at some uninjured spot. They increase rapidly and eventually do much harm to the trees. The mites live in the galls until the autumn when the leaves fall, when most of them migrate to the leaf buds and ends of the twigs, where they pass the rest of the winter. It is a very troublesome insect to overcome. The remedies advised are close pruning in the winter or early spring, followed by a thorough syringing of the young foliage with kerosene emulsion. It is also wise to burn all the leaves which fall in the autumn. Prof. Fletcher advises the addition of flowers of sulphur to the kerosene emulsion, in the proportion of two ounces of the former to every ten gallons of the latter after dilution.

NAMING FRUITS ON EXHIBITION.

SIR,—I have for a long time been thinking of writing to you about the exhibits of fruits at the Toronto Industrial. I notice that our exhibitors, almost without exception, write the names of the different fruits so small that people with poor eyesight cannot decipher them. This causes the caretakers a great deal of trouble, answering questions. If there were printed labels used, there would be none of this trouble. Do you not think this subject worthy of being discussed in our Society? It would certainly convey a great favor upon the old and poor sighted, and, indeed, the general public, if the change were made.

THOS. HANDLEY, *Orton, Ont.*

The subject suggested by our correspondent is certainly worthy of careful consideration by the directors of the Industrial, as well as the directors of every

other fair in Ontario. We have long felt that an improvement was needed in this particular. If the people are to be benefitted by a display of the best varieties of fruits, it is necessary that they should be able to see at a glance what those varieties are. A plan was suggested by American friends, some years ago, of having printed labels suspended over each plate of fruit by a wire hook. This hook is elevated by a coiled wire, which rests on the plate, and coils about through the fruit without displacing it.

LOCAL FRUIT GROWERS' ASSOCIATIONS.

SIR,—I was much interested in a paper read by you at a meeting of the Fruit Growers' Association of Ontario on "Horticultural Institutes." I believe the scheme is a good one, and, after talking up the matter with other people here, I find that all are favorably impressed with the idea, and see no reason why we should not have such an organization in Oxford County. I am requested to send to you for organization papers. Do I understand you to say the members of such institutes, who pay \$1 into their own treasury, are entitled to all the advantages of the Ontario Association?

R. W. NEWTON, *Woodstock.*

By referring to the appendix of the report for 1891, our readers will see full draft of the scheme for the affiliation of local horticultural societies with the Ontario Association. The plan has been adopted in a general way, and several local societies have already taken advantage of it. The particular wording of the by-laws has not yet been fully decided upon. The Ontario Association is willing to arrange to hold their own meetings in connection with these local societies when so invited, and the results promise to be exceedingly advantageous to all concerned. Next December, the meeting will be held at Brantford, with the Brant Fruit Growers' Association, and the following year it will probably be held with the Peterboro' Fruit Growers' Association.

SPRAYING PUMP.

SIR,—What spraying pump would you advise for the garden and small orchards of say, 25 or 30 trees? Those sold here at \$1.50 are little use, and the larger, at \$10, are too expensive.

A. A., *Hamilton.*

We have lately been testing several spraying pumps, large and small, in order to answer such questions as these. The best hand one we have tried is the Lewis Combination Spraying Pump, sold by Mr. W. H. Vantassel, Belleville, Ont, agent for Ontario. It distributes the water in a fine spray, which is easily regulated, and can be pushed up with considerable force.

SHIPPING APPLES TO ENGLAND.

SIR,—I think of shipping a car-load of my apples to England this fall, and I have been referred to you as one who could give me all information upon this subject. I would like the addresses of some reliable firms in England. I also want to know the average cost per barrel for freight from Ontario to Liverpool or London. Do you think it would pay me to ship there? Is there any great demand in England for Canadian apples?

S. P. FOOTE, *Bellevue, Ont.*

The addresses of reliable apple firms will be given in our advertising columns. The expense of shipping apples to the old country, including the freight commission, insurance, etc., will amount to about \$1.50 per barrel. It is possible to get special rates, which may reduce the expense ten or fifteen cents a barrel below this. There is considerable risk in the business, unless one is experienced and knows exactly how to put up apples for the British markets, and there is frequently as much probability of losing money as making it. It is better for an inexperienced fruit grower to take any good offer that is made him for his fruit, in the home market, rather than venture consigning to the Old Country. What we want more and more is, to encourage purchasing on this side, and the sooner we can bring the buyer and the grower of fruit into closer relationship, the better it will be for us. If by corresponding with apple salesmen in Great Britain, sales could be made direct, on the basis of the Government brand of inspected apples, it would be the most satisfactory way to dispose of our apple crop.

BEST VARIETIES OF PEARS.

SIR,—Would you name six of the best varieties of pears for home use or market?

A MEMBER.

We would be pleased to receive the opinions of growers in various parts of the country with regard to questions like these. Mr. Hilborn, of Leamington, gives the following as his choice: Clapp's Favorite, Bartlett, Flemish Beauty, Anjou, Sheldon, Louise Bonne.

BEST VARIETIES OF PEACHES.

SIR,—What would you name as the six best tested varieties of peaches for home use or for market?

A MEMBER.

Reply by W. W. Hilborn, Leamington.

I would name the following: Alexander, Early Barnard, Tyehurst, Early Crawford, Hill's Chili, and Smock.

REFRIGERATOR SERVICE TO ENGLAND.

SIR,—A firm of fruit and ship brokers of Hull, England, are equipping a steamer with refrigerating apparatus to ply between Annapolis, N. S., and London, England, exclusively for the apple trade. If sufficient encouragement could be given them from the apple shippers of Ontario, I believe they would run the steamer to Montreal, this coming season. The steamer in question will carry ten thousand barrels of apples, and will make the voyage from Annapolis to London in nine days. Such a service would be a great boon to Ontario apple shippers, for, with such facilities, we could safely ship our tenderest apples, which, under ordinary circumstances, rot in our orchards. In addition to apples, we could experiment in shipping to England our small fruits, and the probability is that, in a short time, a lucrative market for them could be opened up. The rate of freight, of course, would be a little higher than is charged by the ordinary steamers.

JOS. SCARBOROUGH, *Hanover, Ont.*

Such a service as that referred to in this letter, would be highly appreciated by all growers and shippers of apples in Ontario. We could afford to pay a higher rate of freight to have our apples landed in first class-condition, and we hope that our correspondent will encourage his friends to make the experiment this present season, if possible.

CORROSIVE SUBLIMATE.

SIR,—Has any one tried corrosive sublimate in dilute solution for extermination of insects and destruction of fungi?

I. J. CLEMENT, *Sarnia.*

We know of no one who has tried this substance. Probably the strength required would be also destructive to the foliage of the plant, which we would wish to protect. Prof. Shutt of Ottawa, to whom we have referred the matter, says he will undertake a series of experiments, determining the effects of using this substance.

THE GRAPE PHYLLOXERA.

SIR,—Enclosed please find a piece of the root from one of my vines. Please state in the *HORTICULTURIST* what is the matter.

P. SCOTT, *Cromarty.*

Prof. Fletcher has examined this root and finds that it is severely infested with phylloxera. This subject is exhaustively treated in Saunders' "Insects Injurious to Fruits." See also the *CANADIAN HORTICULTURIST* for 1891, page 247.

❖ Open Letters. ❖

GROWING AND KEEPING APPLES.

SIR,—My method of handling apples is as follows :—(1) Hand pick in September. I handle them like eggs, and never pack fallen apples, or dent with the finger the apples intended for sale. Then sell them as early as possible. (2) I never keep my apples in a damp cellar. I find it better to build a cellar purposely for fruit. I keep them airy until freezing weather, in piles, not too deep, eight inches is enough. I never put apples in barrels or boxes before shipping time; they do not succeed as well as if kept open to the air, and they are apt to sweat and draw dampness, then “good-bye Mr Apple,” for it will lose flavor and rot. If properly handled and kept in a suitable place, winter apples should last until the first of June. I consider it careless and shiftless for any man to neglect close attention to his fruit in which there is so much money. (3) The orchard should receive special care. I have learned by experience the benefits of pruning. Prune one tree as it should be and leave another unpruned; gather the fruit carefully, and keep them separate, giving the same attention to each, and the result will be that the apples from the well cared-for tree will last two months longer than that from the unpruned one. It astonishes one to travel through the country and see how the orchards are neglected. Some trees, thirty or forty years old, have never been pruned, and sometimes you will see several hundred shoots springing out from their roots, and yet the owners complain that they cannot raise apples. (4) I leave no limbs on my trees that I think ought to come off, and I prune in October only. This I find is the best time for pruning. I always keep the ground rich, using unleached ashes, two quarts annually around each tree. I am careful to keep the bark of my trees smooth and clean, allowing no worms to make webs and destroy the foliage.

J. H. SHAVER, *South Finch, Ont.*

A CANADIAN IN CALIFORNIA.

SIR,—The Mills grape vine came to hand and was planted yesterday. It is a little singular that the first vine that I have planted in this country was a native of Canada, and I sincerely hope it may do well in memory of the “auld sod.” By the way, the receipt of this vine “recollects me” (as the German says), that I ought to renew my subscription to THE CANADIAN HORTICULTURIST, which please find enclosed. In this valley, from 15 to 300 feet above tide-water, four miles east of the centre of coast line of Monterey Bay, grape vines do not do well at all. Any quantity of roses and other most lovely flowers, the year round, but “nary a vine” in the whole town. But, up on the mountains, Santa Cruz coast range, at an elevation of 1500 to 2000 feet, twelve miles inland, grapes do splendidly. Down here in the valley we raise the very finest of apples, which command good prices. Apricots and cherries are at home here. Large crops of prunes too are raised, but they do not have the same sweetness and rich flavor of the same fruit, raised where fogs are less prevalent. Our climate is very enjoyable, equable, mild and salubrious.

JAMES STIMSON, M.D., *Watsonville, Santa Cruz Co. Cal.*

THE STRAWBERRIES GROWN IN THE COUNTY OF BRANT.

SIR,—Strawberries are looking well in this county, as a whole. The winter was favorable for them. There are not so many plants being set this spring as usual. A large number of varieties are being planted, but probably the Crescent is still the leading one. The new Williams is quite largely set, and is quite a favorite in this county. I have for a few years been trying to improve the old Wilson. I put out seven acres this spring, and set three fourths Crescents and one fourth Improved Wilson, New Williams, Manchester, Cloud, Sharpless, May King, and Lovett's Early, so you see what my preference is. We are making great count on the meeting of the Fruit Growers' Association of Ontario, in Brantford, next December.

D. M. LEE, *Paris, Ont.*

PROTECTING THE PEACH.

SIR,—Perhaps you are aware that we in Paris live on the cold side of the peach growing belt; so that we cannot grow a crop more than about one year in seven, on account of the winter killing of the fruit buds. I have a seedling standing in a somewhat sheltered place, and three years ago it bore blossoms on a lower branch that was covered with snow all winter. Taking the hint, the next fall I bent down the trees, laying sticks of wood on it to keep it down, and covering all with straw until about the first of April. That year I gathered about one bushel of fruit from it. The next fall I did the same covering as before, and it bore one and a half bushels now, although partly injured by the rough treatment it is well covered with bloom, while other trees in the garden are entirely killed by the winter. I have young trees standing under an eastern bank, these I threw against the bank by cutting the roots on one side and covering as before, on these the fruit buds are preserved, evidently from the same treatment. If you please give this item a place in some corner in (our) magazine, it may help some fruit loving northerner to get a taste of his home grown peaches. Allow me to say, sir, I am proud of THE CANADIAN HORTICULTURIST. I am,

Yours, etc.,

J. A., *Paris, Ont.*

THE BISHOP BOURNE APPLE.

Sir,—The HORTICULTURIST was received last evening and read with interest. From the paragraph relating to the scions of the Bishop Bourne apple sent to you, one would infer that the name had an ecclesiastical origin, whereas it is the name of a place in England, where Mr. Sutton, the originator of the apple, was born. Also, the apple was grown from the seed of *Ribston Pippin* and not the *Newtown Pippin*. We have had a very late spring, cold frosty nights continuing through May, and only within the last week have we had any even comfortable weather; this, June 14th, being the first really warm day. I hope to hear a good account of the fruit crop in Ontario, so that we may have a car-load of your apples in due season. The last shipment proved, on the whole, quite satisfactory.—C. E. BROWN, *Yarmouth, N. S.*

FRUIT GROWING IN WASHINGTON TERRITORY.

SIR,—I wish to acknowledge the receipt of the Moore's Diamond grape vine and the volume 4 of the journal. I hope the vine will succeed in this Puget Sound region. My place is situated adjacent to the waters of this beautiful sound, and I have planted upon it two thousand fruit trees, chiefly Italian prunes. My man in charge tells me that he likes your magazine more than any other than for which I subscribe; it contains more practical articles. I would like to see articles from fruit growers in Western Canada. We have a glorious climate here with no danger of loss of trees from cold weather. Last December and January I planted over one thousand trees, a proof of the mildness of our climate. Prunes, cherries and all small fruits do better here than any other place of which I know. We can even beat California. I have just marketed some sharpless strawberries for which I received 30 cents a quart. They were retailed at 40 cents, along side of Californian fruit at 25 cents.

May 30th, 1892.

I. B. S. INSTED, *Tacoma, Wash. Terr., U. S.*

FRUIT AT EDMONTON.

SIR,—The apple tree which you sent me has come to hand in first rate order. Many thanks for sending it. I am very sorry to report poor success in raising apples, or small fruits, here. I have received many packages of bushes and trees from the Experimental Farm, Ottawa. Some of the bushes have lived through two winters unprotected, but have not fruited yet. None of the berry bushes ever lived through the first winter except the Turner. I have a patch of the Turner growing since the year 1886. Sometimes they have yielded large crops, but last winter there was very little snow and the canes died. Sometimes the canes reach a height of five feet and, when the snow falls early and deep, they winter well.

J. H. LONG, *Edmonton, Alberta, N. W. T.*



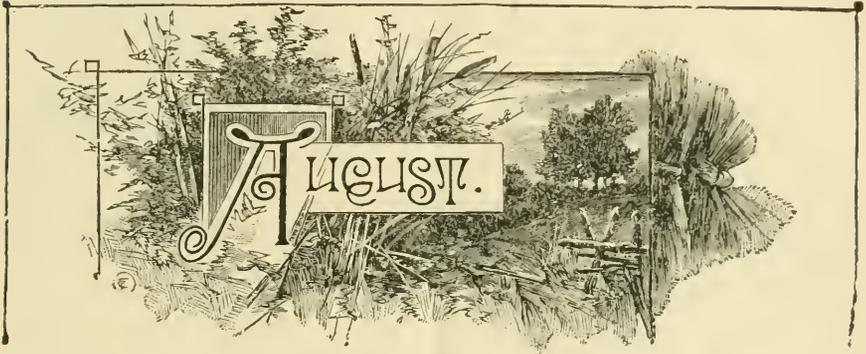
MR. MURRAY PELLER.

THE
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SOME CANADIAN HORTICULTURISTS.—XVII.

MR. MURRAY PETTIT.



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

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

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

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

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

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

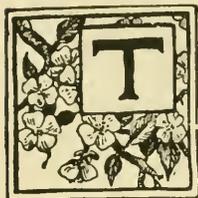
On the organization of the Niagara District Fruit Grower's Stock Co., he was chosen a member of the first directorate and served either as director or vice president, until his retirement from the company. For several years he was also a member of the directorate of the Central Farmers' Institute. In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

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

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

THE GIBB CRAB.

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



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

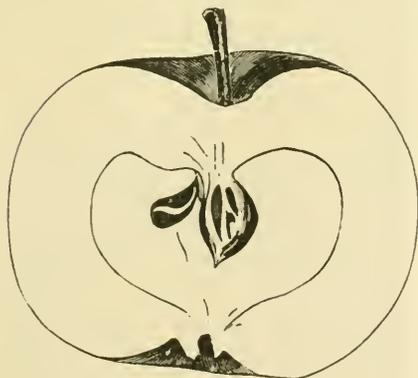


FIG. 53.—GIBB CRAB.

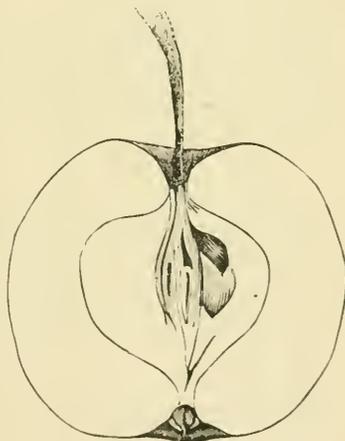


FIG. 54.—ORANGE CRAB.

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

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

JOHN CRAIG.

Experimental Farm, Ottawa.

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

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

TRIMMING GRAPE VINES.



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

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

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

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

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

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

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

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

Arkona, July 20th, 1892.

B. GOTT.

TREATMENT FOR BLACK KNOT.



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

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

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

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

THE CULTIVATION OF BLACKBERRIES AND RASPBERRIES.



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

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

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

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

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

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

ARRANGING HOME GROUNDS.



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

BEST TIME TO TRANSPLANT EVERGREENS.

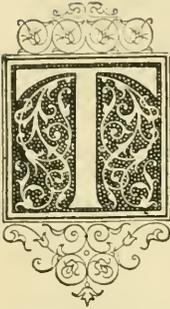


THE impression prevails that there is more risk of loss in transplanting evergreen trees than deciduous trees. This is undoubtedly true when trees of considerable size are taken. The very name indicates that these trees are always in full leaf. Consequently there is an immediate draft upon the resources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

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

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

FRUIT GROWING ABOUT ST. CATHARINES.



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

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

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

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

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

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

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

OUR CANADIAN FAIRS.

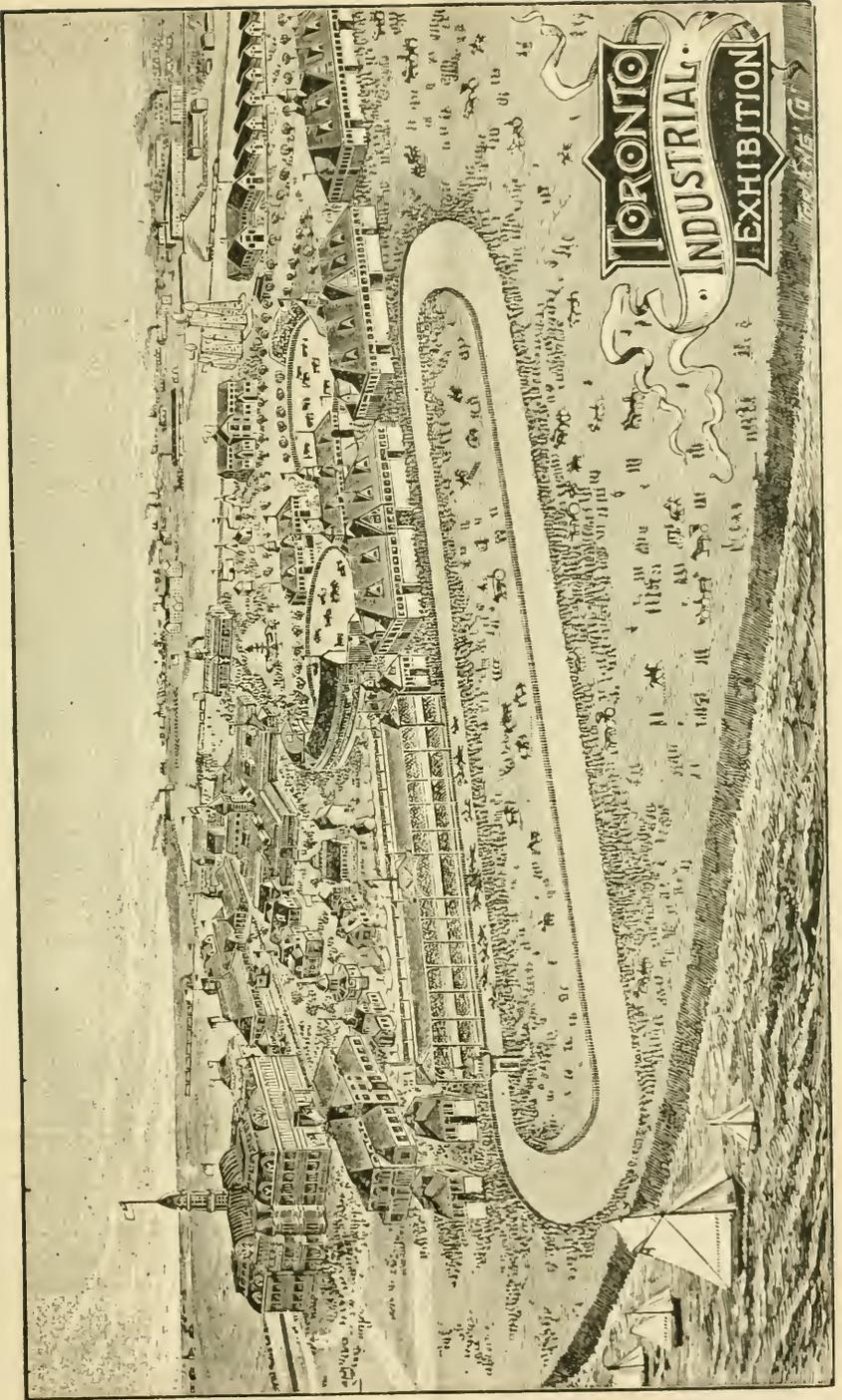


SINCE the establishment of Central Fairs, such as the Industrial at Toronto, the Western Fair at London, and the Central at Ottawa, a much greater local interest is awakened than was possible in the case of the Provincial, which, like some travelling show, came occasionally within one's reach, but was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

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

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

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



TORONTO INDUSTRIAL EXHIBITION

1876

THE BORER OF THE CURRANT BUSH.



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

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

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

The Garden and Lawn.

THE PICOTEE.



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

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



FIG. 57.—THE PICOTEE.

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

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

GROWING ROSES IN CITIES.



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

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

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

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

ROSE CULTURE.



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

 BUDDED ROSES—SOME GOOD KINDS.

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

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

FLOWERS AT FAIRS.

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

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

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

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

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

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

❖ The Kitchen Garden. ❖

PREPARATION FOR NEXT SEASON'S RADISHES.

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

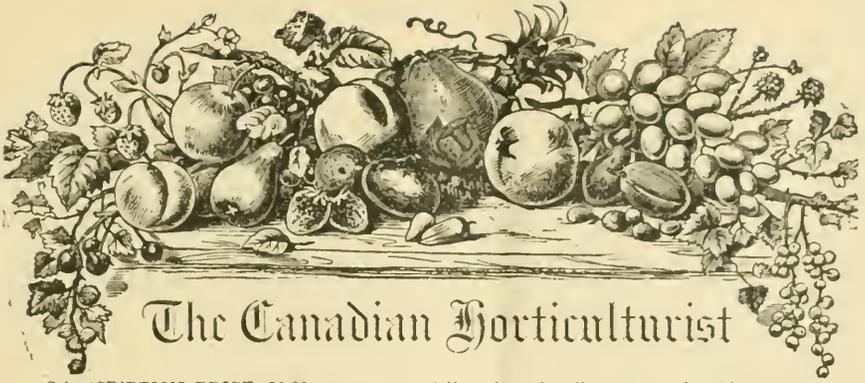
SURE DEATH TO THISTLES.—I had a piece of land that was badly infested with the Canada thistle, and after putting on all the fresh stable manure I had I plowed it the first time about June 25, a year ago, with a plow which cut off everything as wide as I turned the furrow. I rolled and harrowed it down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

HOW TO GROW ONIONS.

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

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

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



The Canadian Horticulturist

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REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

NOTES AND COMMENTS.

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

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

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

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

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

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

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

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

THE FRUIT CROP.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

❖ Question Drawer. ❖

BOOK ON GARDENING.

No. 477.

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

D. J. McCARTHY, *Norwood, Ont.*

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

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

GRAPE VINE BARK LOUSE.

No. 478.

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

GEO. HALLEN, *Oakville, Ont.*

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

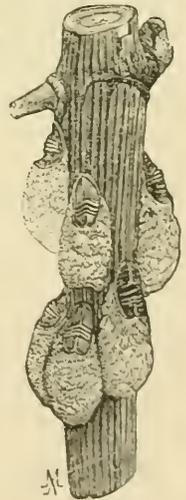


FIG. 58.

BOOK ON WINE MAKING.

No. 479.

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

O. GAGNON, *Montreal, Que.*

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

SUMMER PRUNING OF THE GRAPE.

No. 480.

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

WM. McMURRAY, *The Rectory, Niagara, Ont.*

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

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

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

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

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

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

STOCK FOR BUDDED ROSES.

No. 481.

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

GEO. O. GOODHUE, *Danville, Que.*

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

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

APPLES AND PEARS STUNG BY CURCULIO.

No. 482.

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

G. M. AYLESWORTH, *Collingwood, Ont.*

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

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



FIG. 59.



FIG. 60.

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

BUDDING ROSES.

No. 483.

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

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

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

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



FIG. 61.

Having ascertained, by running a knife under the bark, that the stock will peel easily, and having some perfectly ripe young shoots with buds upon them, the operation can be performed with a sharp knife that is round and very thin at the point. Make, in the bark of the stock, a longitudinal incision of three-quarters of an inch, and another short one across the top, as in *a*, Fig. 61; run the knife under the bark and loosen it from the wood, then cut from off the young shoots of the desired variety, a bud, as in *b*, placing the knife a quarter to three-eighths of an inch above the eye or bud, and cutting out about the same distance below it, cutting sufficiently near the bud to take with it a very thin scale of the wood. English gardeners will always peel off this thin scale, but in our hot climate it should always be left on, as it assists to keep the bud moist, and does not at all prevent the access of the sap from the stock to the bud. The bud being thus prepared, take it, by the portion of leaf-stalk attached, between the thumb and finger in the left hand, and, with the knife in the right, open the incision in the bark sufficiently to allow the bud to be slipped in as far as it will go, when the bark will close over and retain it. Then take a mat-string, or a piece of yarn, and firmly bind it around the bud, leaving only the petiole and bud exposed, as in *c*, Fig. 61. The string should be allowed to remain for about two weeks, or until the bud is united to the stock. If allowed to remain longer, it will sometimes cut into the bark of the rapidly growing stock, but is productive of no other injury. It is the practice with many cultivators to cut off the top of the stock above the bud immediately after inoculation. A limited acquaintance with vegetable physiology would convince the cultivator of the injurious results of this practice, and that the total excision of the branches of the stock while in full vegetation must be destructive to a large portion of the roots, and highly detrimental to the prosperity of the plant. A much better mode is to bend down the top, and tie its extremity to the lower part of the stock. Several days after this is done, the bud can be inserted just below the sharpest bend of the arch.

PRUNING RASPBERRIES AND CURRANTS.

No. 484.

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

W. C. ADAMS, *Toronto.*

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

TRELLISES FOR GRAPES AND RASPBERRIES.

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

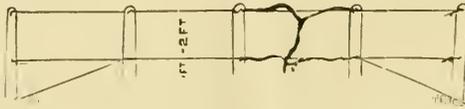


FIG. 62.—GRAPE-TRELLIS.

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

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

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

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

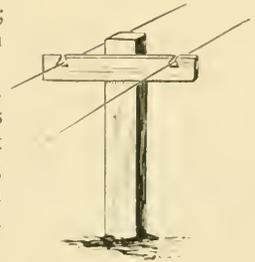


FIG. 63 —RASPBERRY-TRELLIS.

A DEPARTMENT OF BEE KEEPING.

No. 485.

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

AGRICOLA, *Grimshy*.

Replies from Bee Keepers.

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

R. MCKNIGHT, *Owen Sound*.

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

D. A. JONES.

PRUNING HEDGES.

No. 486.

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

ROBT. MCINTOSH, *Newcastle, Ont.*

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

❖ Open Letters. ❖

CANNA SEEDS NOT GERMINATING.

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

N. ROBERTSON, *Government Grounds, Ottawa.*

THE JESSIE STRAWBERRY.

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

Yours truly,

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

THE RASPBERRY CANE BORER.

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

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

I remain, etc.,

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

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

Question Budget

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

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



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PERLE DES JARDINS.



ALTHOUGH the most of our readers are more interested in growing hardy, remontant roses, that large class of hardy outdoor varieties which will endure our Canadian winters and make so grand a display of bloom with so little trouble to the grower, yet some may desire to experiment with those exquisitely scented, though very delicate, Teas, with which florists so often charm our senses. As Mr. H. B. Ellwanger says in his book on "The Rose":

"The Tea rose (*Rosa Indica Ordorata*) may well be taken as a synonym for all that is delicately beautiful. What refinement of color; what subdued, yet powerful fragrance do they possess! They are, indeed, the centre of loveliness; like fair maids at a reception surrounded by admiring groups, these lend beauty to the others, which may well strive to find a near approach to their sweet presence, that perchance they may receive a smile, and borrow beauty, diffused from their chaste loveliness. There has always been a warm place in my heart for the Tea rose, for, *sub rosa*, let me confess it, this was my first love (I fear no conjugal jealousy or censure in making this confession); a bed of Tea roses planted near my father's house first won me as a devotee to the rose, and by foliage and flower I learned to distinguish varieties among them before I even knew the names in other classes; I should now as soon think of doing without roses altogether as not to have a bed of Teas in my garden.

"Most of the varieties in this group are very sensitive to any neglect, and will show very quickly whether they have met with good or ill treatment. The soil can scarcely be made too rich for their reception, but it must be light, warm and *well drained*. If the place chosen consists of heavy clay soil, a foot or more must be dug out, carted away, and filled up with that which is mellow. As most of the varieties are of but modern growth, they require rather close pruning. To protect them during winter, we advise hilling up earth about the plants and then spreading over evergreen branches or loose litter. Care must be exercised that the plants be not embedded and packed down with a heavy mass, otherwise decay and death will ensue. Some air will needs be admitted. The plants must be protected but not smothered."

The *Perle des Jardins* is one of a choice selection of Teas, which Mr. Ellwanger commends highly for healthiness and beauty of both bud and flower. It is largely used by florists for forcing, especially for the New York market, and for this purpose it is truly a superb sort. indeed, it has become a strong competitor with the celebrated *Marshall Neil*. It is also a suitable rose for growing in the open ground in sheltered locations, providing it has proper winter protection.

This rose was raised by Antoine Levet, of Lyons, France, in 1874. It is thus described: flowers canary-yellow, large or very large, full, well formed; stiff stems; very free bloomer; the leaflets are five to seven in number, deeply serrated, very dark and glaucous.

Webster Bros., florists of Hamilton, say with regard to the *Perle des Jardins* rose: "We would say that it ranks first of its color as a forcing rose, and is invaluable for cutting during the winter. Yet we have not found it to be of much value planted outside, the variety *Etoile de Lyon* being superior, as a yellow Tea, for outdoor work. The *Perle* makes a nice pot rose that will sell at sight, but, as a rule, it is hard for the amateur to keep it in good order. Its chief value lies in its being a good forcing rose, that will give excellent results under high cultivation. *Clothilde Soupert* is, in our opinion, the best rose for either outdoor growth, or for a pot rose, that has been introduced, being very free, easy to manage, fragrant; it is, however, not very large."

Mr. Fred Mitchell, of Innerkip, a gentleman of considerable experience with roses, writes: "I would not recommend the *Perle des Jardins* rose as a variety which the ordinary amateur grower need expect anything like perfect success with. I have never seen a truly perfect specimen of a plant of it produced by ordinary pot culture in the house or on the veranda. Under such conditions it becomes unthrifty and stunted in its growth, and blooming only occasionally, and the blooms not of first quality. In my experience, it is more fitted for planting on benches in the greenhouse. Gently forced in this way, with experienced management, it will give a splendid return. The rose in itself has many good points. It is highly perfumed, good form, and, to many tastes, of fine color. There are not many Tea roses which I would recommend to the general readers of the *HORTICULTURIST*."

JUDGING FRUIT AT FAIRS.



HIS subject has been much discussed at the meetings of our Association, and much has been accomplished toward bringing about a greater uniformity in the work of judging fruit in our province, by means of our catalogues of apples, pears and grapes, with values attached, which appear in our report of 1891. These will greatly assist judges in passing judgment upon general collections. In the case of small collections of apples and pears for special uses, as dessert or cooking, some further points will need special observation.

Suppose, for example, there are entries made under the head of the best five cooking apples, each variety will have an absolute value from one to ten, according to our catalogue, as a cooking apple. In addition to this a maximum may be allowed of twenty marks for excellence of sample. In cooking apples the size is very important, while for the dessert apple this will be of little or no account. Indeed, too great a size is an objection rather than a merit in dessert apples. These twenty marks might be distributed as follows :

COOKING PURPOSES.		DESSERT PURPOSES.	
Size.....	8	Size.....	0
Color.....	2	Color.....	6
Form.....	4	Form.....	6
Cleanness.....	6	Cleanness.....	8
	—		—
	20		20

Add these twenty marks to the maximum value for cooking, which was ten, and we have a total of thirty marks possible for each plate. No marks have been allowed for size under the head of dessert purposes, because a small apple is really more desirable for this purpose than a large one, as for example, the Lady apple which is so popular. If, however, the sample shown under this head is too large to be desirable, a maximum of say two points might be taken from the total on this account.

It must be understood that we do not give these numbers as a basis for judgment, as having passed the approval of our Association, but simply on our own responsibility, in order to bring out the criticism of our readers, and thus eventually arrive at some uniform basis.

Now, regarding plates of single varieties ; what points are needed ? If the purpose is specified as cooking or dessert, then, perhaps, the scale just given might be used, but if no purpose is mentioned, the absolute value, as found in our catalogue, would need to be omitted ; and the twenty points would be the highest possible number for any one plate.

In judging melons the quality is always important, and, therefore, it will be necessary to cut them, in order to arrive at any proper conclusion.

Mr. T. V. Munson, of Texas, writes as follows in the *Rural New Yorker*, on the subject of "Judging Melons":

"If musk-melons (not canteloupes) alone were in a country competition where the farmers' families and local market used the crop, then I would be governed chiefly by size, shape and general appearance, especially coloring and netting; but if the competition were among canteloupes, used at home in the local market, and for shipping to distant markets, I would insist upon cutting, to compare thickness and firmness of flesh, and to taste for quality. I would want for judging such melons a scale of points, something like this: Points when perfect—shape, nearest the nutmeg form, five; size, to be nearest five inches, in the shortest diameter, five; weight the greatest with the same diameter of flesh, thickest and firmest, five; quality, most buttery and aromatic, five; general appearance (most closely netted, upon a golden ground when fully ripe), five; total 25. The prize would go to the one scoring the greatest number of points: 25 being perfect in everything. In size, when going over six inches or under three inches in diameter, I would score zero. The best strains of netted Gem canteloupe come nearest to filling the above score of any varieties tried here, in Grayson County, Texas; hence I consider it the best, and it has certainly proved to be more profitable than any other for market. Musk-melons are here regarded as a different class of melon from the canteloupe, as much so as are pumpkins and squashes separated."

In speaking of judging potatoes, the same writer says:

"In judging between competing potatoes of the same variety, I would prefer to work upon a scale of points, as in all other such matters, so that I could always give a reason for my decision. A good scale for the potato would be: Points—Size, for perfection, five, regularity and uniformity, for perfection, five; freedom from fungus and insect blemishes, five; freedom from hollow-core, five; perfection of condition from digging, handling, etc., five; total 25. Thus perfect kinds would score 25 points."

HANDLING THE GRAPE CROP.

As the grape become affected with rot it will be found a most prudent measure to pick them off and burn them. This should greatly diminish the stock of disease spores for another season. Every rotten berry left on the ground to increase spores increases the liability to a greater amount of disease next year, just as permitting a weed to go to seed makes more to contend with the following season.

Grapes should not be picked until the dew has thoroughly dried, leaving them with the bloom that is so attractive to the eye; they should be allowed to shrink in the picking boxes for several hours and then carefully packed for shipment. Particular attention should be given to the sorting and putting-up of the fruit. Remove carefully all green and imperfect berries from the clusters, and preserve the bloom as much as possible. The best bunches should be selected, and small, bare clusters or single berries should not be put in; some other use may be found for these. For choice grapes, it will pay to line the sides of the package, having a partial cover of pretty fringed paper to turn over the face of the fruit. Packages containing five pounds, or neat baskets of ten pounds, will be found best for marketing fine grapes.—*Orchard and Garden*.

FRUIT TRADE WITH BRITAIN.



THE following extract from the *Commercial Bulletin*, No. 4, issued by the Finance Department, Ottawa, will be of interest to our readers : The High Commissioner, in his annual report, called attention to the opening, in the London Market, for a large trade in canned goods and dry and evaporated fruits, and gives the following useful information :

Dried and canned fruits are increasing greatly in popularity in Great Britain, especially during the time when fresh fruit is not available. An immense trade is done in apples, which are cut into rings and dried. They are sold at about ten cents per lb. This seems to afford an opportunity for an extensive trade.

Apples are done up in another way in the United States, somewhat similar to what are known as the Normandy Pippins ; that is, the core is taken out and the fruit dried. If proper regard was paid to the preparation of goods, so as to ensure their being of the finest quality, I have no doubt that a considerable trade would soon develop. These are put up in boxes, and are sold at ten cents per lb. There is a considerable market in the winter season for tinned apples in syrup. The apples are cut into quarters and the cores taken out ; they are largely used for puddings and sauces, and for similar purposes. The supply is said to be in no way equal to the demand, and, in order to show that the trade is a profitable one, I may say that the wholesale price for tins containing a gallon is 1s. 6d. There are many varieties of apples not good for keeping purposes, and which will not carry well, and these would certainly be available for the initiation of such a trade as that referred to.

It is hardly necessary to speak of the apple trade which is done in barrels. It has assumed immense proportions during the last few years, and is capable of indefinite extension. There is a large annual consumption of apples in this country, and the seasons here are so uncertain that a good one only comes every few years. Canadian apples have already established a reputation in this country, and bring a higher price than those from the United States. The selection of the apples, and the packing, has greatly improved, but there is still room for the work to be better done.

Canned peaches are also very popular, and immense quantities are sold every year. Considering the numbers that are generally produced in Canada, and that so many are often wasted because of insufficient local demand, it seems to me that this is a matter also which is worthy of attention in the Dominion. The fruit is put up in tins with syrup, and is sold in 3-lb. tins for about 16 to 18 cents wholesale. There is no necessity for quick transport in this case, the goods of the best quality arrive here in February, having come from California by sailing ship. It is said that the maturing of the sugar imparts an excellent flavor to the fruit, and that altogether the article is improved by the few months which it takes to reach this country in the way I have mentioned.

Canned pears are also much in demand, and as this fruit does not carry well in barrels it is worthy of consideration, whether a trade cannot be developed in connection with its canning. Pears come over in very much the same way as peaches, and the prices are, wholesale, about 28 cents per 3-lb. tins. The remarks made about the transport in the case of peaches apply in the case of pears.

The tomato trade is also one which has extended largely during the last few years, and the impression prevails that it will increase. Whether prepared in the form of tomato sauce in bottles or in cans, there is a large market. Tomatoes are sent in large quantities from France and from Portugal, whole, in tins, with some juice for purposes of preservation. There is a large demand, I learn, for goods of this kind, and it may be worthy of attention in the Dominion; 3-lb. or 4lb. tins are sold wholesale for 5d.

In connection with all kind of canned goods, the following points must be borne in mind, if an endeavor is made to open up a trade :

1. That the goods must be of the best quality.
2. That the quality should be kept up and not allowed to deteriorate.
3. That some brand should be adopted which will attract public notice, and that the goods should be put up in attractive tins.

THE NATIVE HORNBEAN.—Our native *carpinus*, or hornbean, is one of the most ornamental of our small trees. Its clean, birch-like foliage in summer, its furrowed bark in winter, and its trim appearance at all times, bespeak for it more general use. In spring its catkins push suddenly forward before the leaves, covering the tree with a mist of soft green that is a special feature of the landscape on the borders of swamps and streams.—*Garden and Forest*.

SOOT AS A FERTILIZER.—There are few chemical manures that are so valuable in an all-round way as soot, and this is easily procured with a long-handled brush from the chimneys. It is best used in a liquid form, and should be prepared in this way : Place a pound of soot in a square bit of rough sacking or canvas, and tie it up securely with string, yet allowing the soot room to swell and to be moved about inside the canvas. This bag of soot should be dropped into a large pan of rainwater, and allowed to soak for twenty-four hours. The black water surrounding the bag is then fit for use, and will require diluting if at all thick. More water can be added as used, and the bag pressed with a stick as necessary, till the soot is gone. Soot-water is the best fertilizer for pot plants, as it does not make the soil foul, and also destroys all worms and insects; but it must not be used in a thick state, or the surface soil may become too hard and dry. Thin doses once or twice a week for plants in full growth will be found most beneficial to them. Soot in a solid state may be mixed with twice its bulk of fine, dry soil, and used as a top dressing; it is not safe to use it alone, as it may injure the plant, being extremely strong, but when thus mixed it will benefit all garden crops.—*N. Y. World*.

THE LOGGERHEAD SHRIKE.



HIS bird, doubtless, derives its common name (Butcher bird) from the fact that he slays many more creatures than he devours. He seems to have an insatiate love of carnage. I have known him to kill birds when enough food was stored in his larder to last him for weeks. He has the curious habit of impaling on thorns, or sharp twigs, all the carcasses not required for immediate consumption. He generally makes his residence in some locality in which there are thorn trees, and woe unto any small bird which may enter into his chosen territory. He is remarkably swift on the wing, and when he makes a dash he seldom misses the object of his pursuit. I have seen him with seeming amusement catching large moths and grasshoppers, which he also impaled after cutting off their wings and legs. Sometimes he impales mice and frogs alive to perish miserably. The majority of bodies thus impaled are eaten by bugs or left to wither in the sun and be blown away.



FIG. 64.—LANIUS LUDOVICIANUS (*Lin.*).

An instance of desperate rapaciousness is related by Mr. Macnamara, a blacksmith in Kingston. He was startled by the screaming of a sparrow, chased into his shop by a shrike, which certainly would have slain his intended victim only for the timely interference of a sympathizing man. Sometimes a shrike will attack a larger bird. Mr. H. Stratford, Naturalist, Kingston, while out hunting for specimens, observed a robin being attacked by a shrike, which he shot in order to save the robin's life. I have known him bolt through an open window into an inhabited room and attack a caged canary.

The shrike is not provided with the murderous talons of the hawk or the owl, but with his powerful beak he generally crushes the skull of his victim. Of the two species of shrikes which visit us here, the Loggerhead or Grey shrike is the more common. He comes from the south early in spring, and nests in May.

The great northern shrike, a little larger than the other, breeds farther north, comes here in the fall, and, now that he finds abundance of food in the European sparrow, stays with us all winter. The two kinds resemble each other, only the larger bird is of lighter color on breast and head, but in essential particulars they are as one—bold, defiant, reckless, they have little fear in the presence of man.

Their harsh outcries of seeming exultation are as unmusical as are the creaking of an old windmill or the rusty hinges of a barn door.

Aubon says: "This violent little warrior possesses the faculty of imitating the notes of other birds, especially such as are indicative of pain. Thus it will mimic the cries of chased sparrows and other small birds, so as to make you believe you hear them screaming in the claws of a hawk; and I strongly suspect this is done for the purpose of inducing others to come out from their coverts to rescue their suffering brethren." I have seen him in the act of screaming in this manner, when he would suddenly dart from his perch into a thicket from which there would immediately issue the real cries of a bird he had seized.

The shrike is an impetuous and audacious bird which has few admirers; yet few enemies besides man, and, being prolific, has now become common in most parts of the country, and, although he kills many a bird we would wish to live, he is entitled to our favorable consideration for the part he is taking in our behalf against the common bird-pest of this country—the European sparrow.

The shrikes generally build in a bush within arm's reach from the ground, the nest proper resting upon an extensive basement of stout twigs, rather loosely laid together and bristling in all directions. Upon this the inner nest is built of an endless variety of fibrous substances, such as withered grass, strips of bark, tree leaves, mosses, lichens, wool, etc. Sometimes fur and feathers are netted in with the rest of the materials. The number of eggs deposited in this compactly constructed receptacle is generally five or six. They are a little over an inch in length and about three-fourths as much in breadth, of a greenish-grey color, profusely speckled all over with brownish and purplish specks. The eggs are of oval form, quite blunt at the smaller end.

Soon after the young birds leave the nest they may be seen hunting and devouring grasshoppers, butterflies, moths and other large insects. This fact alone has led some to believe that the good which shrikes do in the economy of nature more than counterbalances the evils of their objectionable propensities.

The most remarkable part of the shrike's physical organization is his beak, the upper mandible of which is hooked like that of the hawk; hence he has no difficulty in keeping hold of his struggling victim. There is no reticence about this bird; the whole course of his life runs on in almost incessant warfare—not a very lofty character.

D. NICOL.

PACKING FRUIT FOR MARKET.



PACKING of apples and pears, Ellwanger & Barry say, in *American Garden*, that the fruit is dropping badly, and consequently the crop will be smaller than usual. Their method is to pack choice pears in bushel kegs, and plums in fifteen pound boxes. Another expert advises packing all summer pears while still hard. They will ripen rapidly when once packed, much more so than is generally supposed. Each specimen should be handled most carefully, conveyed to the packing house in a spring wagon, with as little exposure to the sun as possible, and there allowed to cool before it is placed in the shipping packages. This point is very important. When in a condition for packing the fruit should be sorted by hand directly into kegs or barrels. The pears should be placed carefully in layers, observing uniformity in size and quality in all packages, and the outside marked to correspond, so that no person purchasing will be deceived. When the fruit is scarce the bushel keg is the most suitable, when abundant, the half barrel is to be preferred; the full sized barrel is not in any case suitable for a choice quality of pears, especially in hot weather.

In handling plums, this writer advises still greater care than with pears. The trees need picking over several times as the different varieties color and ripen. The fruit is picked with such care as not to disturb the bloom and as quickly as possible taken into the shade of the packing house and there carefully packed in layers in boxes or packages in which they are to be shipped. They ought to be packed so tightly that they will not move about. It will be found wise to use baskets of different sizes, holding five, ten or fifteen pounds each. The fruit that is quite ripe may be handled and marketed best in five pound baskets. For second grade or cheap and common varieties, the fifteen pound box may be used to the best advantage.

The points made by our American friends are all good, and, for the most part, are similar to those observed by the best Canadian fruit-growers. We have constantly taken care, in these pages, to emphasize the extreme importance of the careful handling of all our best fruits in order to get the best prices, whether in the home or the foreign markets.

SULPHIDE OF POTASSIUM.—This remedy for mildew has now been extensively used by our leading gardeners. As it is a remedy, at once cheap and effectual, I am anxious to make its merits as widely known as possible among my fellow amateurs and gardeners generally. As mildew is common this year in (England), I hope every one who is troubled with this pest will test the sulphide and report whether it proves successful or not.—*Gardening World*.

THE GRAPE BUSINESS.



HE grace of the vine is proverbial, and the beauty of its fruitage gives it a high rank among the more attractive products of the soil. It is difficult to imagine a more delicate and delicious fragrance than that which greets one when entering a vineyard loaded with well-ripened fruit.

Grapes prefer a southerly exposure, a well-drained, fertilized and cultivated soil. The uninitiated would scarcely credit the difference careful cultivation makes, not only in the appearance, but in the flavor of the fruit. The vineyards, in the famous grape region from Erie, Pa., to Brocton, N. Y., look, in August, as free from weeds and as carefully kept as the daintiest flower garden in the land, and the vines cling to the trellises perfectly, with no vagrant branches to accuse their owners of carelessness. There is no fruit which requires more delicate handling than the grape, for, if the bloom is rubbed off or the clusters are in any way disfigured, the market value is seriously reduced.

As soon as the fruit has ripened, the labor of picking and packing begins. The picker is supplied with wooden trays, each of which holds about 30 pounds when a little less than even full. These trays are made so that they can be piled up in tiers on the grape wagons. The picker takes each cluster by the stem and cuts it from the vine with sharp-pointed grape scissors, and lays it carefully in the tray. The clusters are handled entirely by the stems, and the careful picker lays them in the tray with the stems up, so that the packers may find no trouble in taking them out. These sit at long, low tables. When boxes with wire nails are used, there is a slit in the table to receive the wire, as the boxes are packed face down, and there are blocks to incline the box or basket toward the packer.

Grapes are usually assorted by the packer into three or more grades. The Niagara Company puts a certificate of excellence on its first-quality fruit, and nothing goes into these boxes that is not absolutely perfect. The clusters must be large and shapely, and the berries large, well ripened, and of good color. The second-quality boxes contain smaller clusters, but all imperfect berries are clipped out, and all webs and other foreign matters are removed. No loose clusters are packed in these boxes. If fruit is scarce and high, a third quality may be packed with profit, but the fruit left from the second selection is usually made into jellies, catsup, and fermented or unfermented wine.

It is said that grapes may be produced at a fair profit for two cents per pound, but unless sold in bulk the margin from such sales must be very narrow. The care necessary to pack the grapes for market renders this part of the work expensive, as cheap labor cannot be utilized. True, a great bulk of fruit may be raised per acre; but the average packer will not put up more than 500 pounds per day, and skilled packers receive a dollar per day.—*Rural New Yorker*

NEWS NOTES.



IN currants, the Fay is the largest, and a better cropper than Cherry. Cherry comes next in size; then comes Versailles, which is a better cropper than either of the others. Red Dutch is the best bearer I have, and if given rich soil and good cultivation, is of fair size, but the greatest objection to all of them is that they will not stand up with their load. What we would like is a currant of good size, a good bearer, and one that will stand up. I am told that the Victoria will stand up, but the fruit is no larger than the Red Dutch, and late. The White Grape is a good bearer of good sized fruit, the sweetest currant of all, and the best to eat with sugar and cream.

In gooseberries, I fruited this year Downing, Smith's Improved, American, Industry, and White Smith. Smith's Improved is a better berry than Downing, but Downing will produce double the quantity of fruit; White Smith, I like better than Industry, but the latter is the best bearer. Last year my Industry mildewed badly; this year I sprayed with a decoction of cedar leaves twice, and I have no mildew. Whether I should credit the treatment or the season, I don't know, but the treatment is easy and cheap, and worth trying. I shall try again another year. Gooseberries were a heavy crop with me. I gathered ten bushels off sixty bushes. Currants were also a fine crop. Raspberries are a short crop here. This year Golden Queen are on the market for the first time, and they are all the name implies. When better known they will be more planted. They are the best bearers I have this year, and the best table berry out of four kinds.

The winter was very severe on grapes. All my Rogers were killed to the snow line, so I will have no fruit on them. Other varieties were more or less injured. Brighton, Concord, Worden, Delaware, and Moore's Early are bearing fruit. I thought Champion hardy, but mine was badly injured last winter. It grows by the veranda for shade; alongside of it grows a Moore's Diamond, which was not nearly so much injured as the Champion. So I take it that Diamond is hardy. It had three or four bunches on last year; the fruit was early, sweet, and melting, but the bunches were not compact. There is no fruit this year. I should think it ripens two weeks before Niagara.

The Williams' strawberry did well with me this year. I like it better as a cropper than Jessie or Sharpless, but, like them, the fruit is uneven.

I have planted out a lot of blackberries this spring. I planted Snyder, Ancient Briton, and Agawam, as I consider them all hardy. I would like if some one of your readers, who has had experience in growing blackberries, would tell us how to do it successfully. Should they be pinched back, and when? I also see that some one recommends laying them down, and says that it is not difficult. I wish he would tell us how and when to lay them down, and how and when to get them up again; the latter being of the most importance.

There were no cherries this year. Pears will be a poor crop. Very few plums. Apples will be fair crop; Baldwin's pretty well loaded.

St. Thomas, Ont.

A. W. G.

HINTS ABOUT STRAWBERRIES.



R GEORGE T. POWELL, in an address on Strawberry Culture, before a New York Farmers' Institute, made these remarks : In fertilizing the strawberry remember that it yields from near the surface and as a consequence is easily water-killed. To make success sure it is therefore best to under-drain a piece of land to carry off the surplus moisture in fall and spring. The soil should

be moist, but not wet. Under drains are fully as valuable in dry as in wet weather, as they prevent, in a measure, the exportation of moisture from the soil. A soil that will produce a good crop of corn will produce a good crop of strawberries.

Potash is the best fertilizer for the strawberry. The vine and foliage require nitrogen to perfect them ; the fruit, potash and phosphoric acid. The former will be cheaply obtained from good barnyard-manure, the latter from ashes and ground bone.

I plant in the spring, in rows four feet apart one way, and grow in what is called the matted row system, not permitting the rows to spread more than sixteen to eighteen inches. The second season I obtained the best crop. When the crop is harvested I put in the plough and turn under the whole mass. I have a new bed coming on each year for next season's crop.

If the rows are four feet apart a row of beans may be grown between them the first season, but the ground should be well cultivated, the cultivator running within six inches of the crowns till the runners start to grow, which, when they have reached a distance of eight or nine inches on each side pinch off. As fine specimens and as large crops may thus be grown as by the hill system.

HOW TO COOK THE CRANBERRY.—The American Cranberry Growers' Association has approved and recommends the following recipes for cooking this fruit : No. 1.—1 quart berries, 1 pound granulated sugar, $\frac{1}{2}$ pint of water. Cook ten minutes ; shake the vessel ; do not stir. No. 2.—1 quart berries, 1 pound granulated sugar, 1 pint water. Bring sugar and water to a boil ; add the fruit and boil till clear—fifteen or twenty minutes. No. 3.—1 pound berries, 1 pint (scant) cold water, $\frac{1}{2}$ pound granulated sugar. Boil together berries and water ten minutes ; add sugar and boil five minutes longer. Gently stir, or shake, to prevent scorching. In all these recipes use berries of a bright medium color, as they are more delicate in flavor, jelly better and make more sauce than over-ripe dark ones.

The Garden and Lawn.

THE CULTURE OF ROSES.



If you want roses, they must be in the richest part of your rich bed. You cannot give roses too much rich feeding, and you cannot keep them too clean. They must be thoroughly watered, and the plants syringed with whale-oil soap, dissolved in luke-warm water, once a week at first, and later once a month, if there are no bugs. Instantly when you see a single bug, those small, green parasites, thoroughly syringe with whale-oil soap. Water once a week with a watering-potful of luke-warm water in which a tablespoonful of nitrate of soda has been dissolved. This can be bought in crude form at any druggist's at ten cents a pound. This enriches the plant and improves the flowers. Let no rose remain on the plant when it is in full bloom. It exhausts the plant very much.

If your climate is mild you may have a wide choice of roses. If a New England climate, do not waste your time on many roses but the hybrid remontants. They will usually winter with some protection, and they give lavish bloom, and the robust growth of the plant, with its solid leaves, is, to my mind, handsomer than any other rose but a few teas. It is well to have some teas for perpetual blooming and the beauty of the flowers, but they must be taken into the house in winter.

Roses, like poppies and marigolds, need sun. Set your roses out in the autumn only if your winter is mild. If you have a severe winter climate, start them in the spring. Then they will get firmly established by the autumn, and winter more safely. They must be "laid down" as late as possible—that is, gently bent to the ground and fastened so by means of twigs put over them like little arches, the ends of the twigs firmly stuck in the ground; then, according to the severity of the winter, cover them with straw, leaves, litter cloths, lightly or heavily, as the winter may demand. A snowless winter is their greatest enemy.—Mrs. Dewing, in *Harper's Bazar*.

SOIL FOR GRAPES.—Most varieties delight in a sandy or gravelly loam, made rich by potash, lime, and bone. Heavy soils do not suit the grape, and, if wet, they require drainage, and are improved, if very flat and wet, by ridging. The different types and their crosses, generally delight in the same kind of soil as those natural to them where originally found. Thus, those of the *Estivalis* class thrive more successfully on dry or poor lime and sandy soils. Those of the *Labrusca*, a more moist soil, richer in potash than lime. Those of the *Riparia* are not so nice as to locality, but dislike a wet or heavy clay, and dry limestone soil. With proper care we can make all varieties, not too far unsuitable thrive on almost any soil, and produce abundant crops.—*Orchard and Garden*.

ARRANGE TREES ON COUNTRY PLACES.



N plantations depends largely the successful composition and coloring of a country place. The first thing to consider before you begin to plant is the adjustment of your views, vistas or outlooks. Ordinarily, except where you require, for some reason, a special outlook, the entire outside border of the place should be planted with a mass of trees and shrubs, making a hedge of irregular waving lines. Ordinarily, too, there should be something like seven shrubs to every tree, the shrubs standing eight or ten feet apart, and the trees forty to fifty feet. This rule applies, of course, to only large growing shrubs; the smaller ones can be tucked in round about. It is an excellent plan to establish a lofty tree, like the elm, tulip or poplar, at each marked angle of the place and at each side of the carriage entrance. It tends to give character to the entire lawn. If you have room enough, one of the ways of emphasizing certain interesting parts of your country place, and especially the pleasant home character of the house, is to establish a grove near that building. Set out the best shade trees—elms, maples, beeches, tulip trees, liquid ambers and lindens—and let them stand forty or fifty feet apart, so that they may grow into broad and lofty trees, dispensing abundant shade. Such a grove near the house will give perpetual delight throughout the year. Even in winter, during snow and ice storms, you will find unfailling pleasure in contemplating the unexpected and magical effects of snow and ice in your grove, and, moreover, find comfort in seeking its protecting shelter if you have planted a few pines in the midst. Planting groves means to many people simply the setting out of a cluster of trees eight or ten feet apart, and allowing them to slowly crowd each other to death. Properly managed, the grove may be the most delightful and admirable feature of all country places, except the smallest, and even there one great elm or beech may be a grove in itself.

In adjusting the vistas by means of your planting you should see that the longest lines of view are secured. Let them extend diagonally from corner to corner of your place if you can —*Scribner*.

WHITE AND BLUE SPRUCE.—Mr. C. G. Patten, a resident of Charles City, Iowa, confirms the statements of Robert Douglass in regard to the superiority of the White spruce over the Norway spruce for hardiness and beauty. He also mentions some trees of *Picea pungens*, or at least a variety of it, growing about two miles north of Floyd, in the same State. "Many of these trees have quite a silvery appearance. The foliage is very dense, and never injured by our extreme winters, being much more hardy than the Norway." This is the Colorado Blue spruce, which will, undoubtedly, be widely planted when it becomes better known, and is more generally propagated.—*Vick's Magazine*.

A LIST OF NATIVE FERNS PROMISING FOR CULTIVATION.

Most ferns are easily injured by exposure to strong winds, and a large per cent. will not thrive when long exposed to direct sunlight. After observing these two points, and the sections under which the ferns are placed, a little thought will enable any one to give most of our native ferns a suitable location and treatment to ensure success.

a. *Thriving in sun or shade in poor soil.*

Pteris aquilina, L. Eagle Fern. Common Brake.

b. *Thriving in cool, rocky places.*

Asplenium ebeneum, Ait. Spleenwort.

“ *Ruta-muraria*, L. Spleenwort.

“ *Trichomanes*, L. Spleenwort.

Aspidium Filix-mas, Swz. Male Fern.

“ *fragrans*, Swz. Shield Fern.

Cryptogramme acrostichoides, R. Br. Rock Brake.

Pellaea gracilis, Hook. Cliff Brake.

Polypodium vulgare, L. Polypody.

Woodsia Ilvensis, R. Br.

“ *Oregana*, D. C. Eaton.

c. *Thriving in bogs or swamps.*

Aspidium cristatum, Swz. Shield Fern.

“ *Noveboracense*, Swz. Shield Fern.

“ *Thelypteris*, Swz. Shield Fern.

Woodwardia angustifolia, Smith. Chain Fern.

“ *Virginica*, Smith. Chain Fern.

d. *Thriving in rich woods.*

Adiantum pedatum, L. Maidenhair.

Asplenium angustifolium, Michx. Spleenwort.

“ *Filix-femina*, Bernh. Spleenwort.

“ *Thelypteroides*, Michx. Spleenwort.

Aspidium acrostichoides, Swartz. Shield Fern.

“ *aculeatum*, Swartz, var. *Braunii*, Koch. Shield Fern.

“ *Boottii*, Tuckerman. Shield Fern.

“ *Goldianum*, Hook. Shield Fern.

“ *Lonchitis*, Swartz. Shield Fern.

“ *marginale*, Swartz. Shield Fern.

“ *spinulosum*, Swartz. Shield Fern.

“ “ “ var. *intermedium*, D. C. Eaton. Shield Fern.

Cystopteris bulbifera, Bernh. Bladder Fern.

“ *fragilis*, Bernh. Bladder Fern.

- Dicksonia pilosiuscula*, Wild. ♣
Onoclea sensibilis, L. Sensitive Fern.
 “ *Struthiopteris*, Hoffman. Ostrich Fern.
Osmunda cinnamomea, L. Cinnamon Fern.
 “ *Claytoniana*, L. Flowering Fern.
 “ *regalis*, L. Flowering Fern.
Phegopteris Dryopteris, Fée. Beech Fern.
 “ *hexagonoptera*, Fée. Beech Fern.
 “ *polypodioides*, Fée. Beech Fern.

—*Flora of Michigan.*

AN effort is being made to secure for exhibition in the Horticultural Department of the World's Fair a specimen of giant cactus from the desert region of southeast California. The cactus grows at times to the height of seventy feet. A specimen when boxed ready for shipment will weigh eight tons, and it will require an expenditure of something like \$2,500 to deliver it in good condition in Chicago.

ILLINOIS will have an exhibit in its State World's Fair building of specimens of all the indigenous woods of the State. In order to secure uniformity each specimen will be about forty-two inches long and consist of a section of the tree trunk. It will be cut in such manner as to show the grain from the surface to the center. On each specimen will be painted a picture of the leaf and fruit of the tree.



FIG. 65 — THE CARNATION—See p. 237.

❖ The Kitchen Garden. ❖

HARVESTING AND MARKETING OF ONIONS.



WRITER in *Farm and Home* says: "If dry weather can be depended upon, there need be no occasion for sheds, for then the onions can be cured on the ground out of doors. In a dry spell the crop can even be left unharvested for a time after it is ready for pulling, though this is not a safe plan, as onions quickly deteriorate in value if left unharvested too long. It is time to pull the crop when the tops fall over and begin to waste away. If then left in the ground and rain should fall, the onions will make a new start, and nothing will stop them from keeping on growing, and if not quickly used they will spoil. The same result will follow if rain sets in while they are left on the ground to cure. A few hot, dry days will be sufficient for thorough curing out of doors, but in wet weather they must be placed under cover in a dry, airy shed, on shelves, and not over nine inches deep.

"Only bulbs that are perfectly cured are fit for winter or early spring use. Onions should never be kept that are not capped over perfectly, and that are not entirely dormant both at root and top. If perfectly cured they can easily be kept over winter in a dry, cool and airy room, but they should never be stored in large bulk together. Many farmers prefer to ship their onions to market as soon as dried, rather than run the risk of carrying them over, and, as prices ruled last season, this was the better plan. Good, new dried onions brought up to \$6 per barrel in New York about a year ago, but this figure has not been touched since. It is best to ship to market in good flour barrels which are strong, clean and of neat appearance, a combination that always tells favorably in the selling of any product."

Mr. Charles T. Parsons, of Massachusetts, writes the same journal as follows: "Generally, the early onions sell the best. If they are not too scarce and high stemmed, let them stand until the tops turn yellow and fall over. In pulling the earliest, I make selections. If it is a general harvest, I use a rake, made especially for the purpose, and take care not to bruise the onions. When they are dried pile them up in small heaps; this is recommended, as it improves their looks. I have found it convenient to draw them with a dump cart to the tobacco shed, to be spread out; the tops can be cut at leisure, when the market the owner designed them for, requires. Those for bunching need not be cut at all; they will keep much better with the husks and tops on. They absorb moisture, and in this condition can be stored several feet thick. They should be carefully watched, as they are very sensitive to the changes in the weather. The scullions and late gathered should be kept separate and marketed early.

Five hundred bushels are not a large yield per acre. This number was put down as the average yield of 1865, while many record that much on half an acre. The Bermuda islands and Spain send many onions to this country early in the season.

Marketing the crop is expensive, as they must be sold mostly in the large cities. The cost of raising depends upon circumstances, so I will name some of the items. The interest on the land, hauling, spading, plowing, and hoeing in the fall, applying 20 loads of manure to the acre, a thorough cultivation in the spring, carefully raking off the rough soil and raking in 100 bushels of ashes to the acre, and as much else as you can afford to buy; these are the chief items. The seed is often high and should be sown with much care. The weeding and hoeing should be done six or eight times, which means crawling that number of times over an acre, with rows about twelve inches apart.

HOW TO PACK AND MARKET VEGETABLES.



ONE of the most difficult things to get a beginner in packing fruits and vegetables to understand is the necessity for filling packages tightly, so as to prevent jostling in transit. . . . Another matter which has been insisted upon for many years in all the farm papers, is the necessity for honest packing of fruit and vegetables. Growers seem to suppose that city buyers and dealers look only at the big specimens put on top, when, in fact, the only one deceived in the transaction is the shipper, who always loses in cash and reputation. . . .

Growers are fast coming to the conclusion that it pays best to ship vegetables in crates of moderate size that can be easily handled. Even the crop of early potatoes, still largely shipped in barrels, will pay better sent in crates, and growers who have tested the matter are using crates for this crop. Plenty of city consumers will buy a whole crate who cannot handle a barrel of potatoes, and potatoes in crates go off at better prices. . . .

Our vegetables are sent to the exacting Boston market either in bushel or barrel-boxes. The bushel-boxes are nine inches deep, and square 19 x 19 inches. The barrel-boxes are 38 x 18 inches in length and width, and 10½ inches deep. By considering the number of bunches or individual varieties contained in the standard boxes, the buyer knows whether the size of the bunches is right for his retail trade. Overgrown monstrosities and uneven grading find little favor with dealers. . . .

Asparagus is done up in bunches of one pound each, and exposed for sale in bushel-boxes. The less white found in a bunch, and the larger the individual sprouts, the better is the price obtained for them. Many find it profitable to make two sorts of bunches, putting the smaller and whiter stalks in separate bundles, thereby obtaining enough more for the best to return a better price for the gross lot. . . .

The only variety of cucumber recognized, whether in glass or field culture, is the White Spine. It is sold in bushel boxes, and should be of such size that ninety will evenly fill the box. Cucumbers are sold by count, and if the number is short, the trade knows that there are overgrown, seedy ones in the bottom. If the number is more than ninety, they are too small to please retail customers. Therefore, a box containing ninety cucumbers brings the top price if they are straight and true in shape.—*American Gardening*.

LAND FOR EARLY PEAS.

SIR,—Please say what is the best way to prepare land for early peas.

S. PEDDLE, *Whitechurch*.

Reply by J. J. H. Gregory, Marblehead, Mass.

In reply we would advise your correspondent to select a piece of warm, early land—fall plowed, if possible—and spread on and plow in good composted horse and cow manure, at the rate of six cords per acre. Plant as early in the spring as the ground can be worked.

HOW TO OBTAIN MORE HIGH-GRADE FRUIT.

This subject was treated by Mr. George T. Powell in a practical address from which we make the following extracts: "We cannot plant young orchards in land from which we have taken continued crops of grain and grass for years, and, while the trees are growing, continue to take off potatoes, oats and grass for fifteen or twenty years longer, and then hope to secure full crops of good fruit. The trees must be well planted in the first place, with roots pruned back to half their length and the top cut in quite as severely. The branches of a nursery tree are not where they are needed; often two of them are nearly opposite, which will make the tree liable to split apart. Therefore, it is good practice to take off the top entirely, leaving only buds on the main trunk where the future branches are desired. When trees are thus prepared for planting, pruning for the next ten years can be done with a pocket-knife, and the fruit and foliage will be where they are needed. Since the foliage plays so important a part in preparing plant-food for use, a good growth of leaves should always be ensured. It is of little consequence to use poisons against insects that devour fruit, and fungus diseases which destroy fruit, when the leaves are left to be infested with insects and parasites. Since I have sprayed the foliage of my orchards good Spitzenburgs can be grown once more. Before they were treated in this way these trees set full of fruit, but they never matured into large handsome apples. Healthy wood and healthy foliage are essential to vigorous fruit-buds and perfect fruit. There is a demand abroad, which has never been supplied, for fruit of high quality. In the Old World flavor counts for more than appearance. Every barrel of Ben Davis apples we send abroad depreciates the value of the best American apples.—*Proceedings W. N. Y. Hort. Soc.*

HOW AND WHEN TO HARVEST THE ONION CROP.

MR. T. GREINER gives some good hints in his "Onion Culture" on harvesting onions. When grown by the new method they matured much earlier than when grown in the old way, and as soon as mature they need to be harvested. A long period of rainy weather afterward will injure the bulb for the market if left unpulled. At maturity the tops fall over and begin to waste away, the substance being gradually absorbed by the bulbs, so, when the majority of the tops are dying down, the time has come for pulling. They should be left upon the ground for some time to cure, and for this, it is very desirable to have dry weather. If rain comes, the onions should be raked over carefully with a lawn rake. A week or more of dry weather is necessary for curing. Then, on an afternoon of a dry day, gather the crop and dry them inside, storing them in open sheds, lofts, on the barn floor, or any dry, airy place where the onions can be spread out thinly. There they may be left until perfectly cured, that is, until the tops have almost entirely dried away.

Where a business is made of onion growing for market, a shed suitable for storing onions should be built, varying in dimensions according to the needs of the grower. All the bins are made of slats, with spaces between for free circulation of air. In rainy weather the sides may be covered with canvas or adjustable boards.

Mr. Henry Price, of Missouri, furnishes a description and plan of an onion curing crib which seemed worthy of commendation. It is described as resembling a double corn crib. "It is sixteen feet wide, and eighty long, with a ten-foot driveway in the centre the whole length. This leaves the width of crib on each side four feet, its height eight feet. The building is lathed all around, inside and outside, similar to a corn crib. Of course it can be put up to suit the notions of the person building it, and quite cheaply, if desired. Ordinary rough posts cut in the woods, set into the ground three or four feet deep, may serve as a frame work. I think I would divide the storage rooms on each side into shelves, making at least four of them, each two feet deep. The onions can then be stored twelve to eighteen inches deep, leaving space enough for free airing and drying between the layers. The loft may also be used for curing onions, or for storing corn, and for other purposes."

THE currant worm is said to be greatly inconvenienced if the bushes are well mulched with coal ashes. Probably if some wood ashes were mixed with the coal ashes greater results would be obtained. At the New York Experiment Station bushes mulched with the material mentioned suffered much less from the ravages of the larvæ than others, although one plat was given no other treatment than ashes, while the plat unmulched was several times treated with hellebore.

Forestry.

TREES AND SHRUBS BEST SUITED FOR SCREENS OR WIND-BREAKS.

For this purpose, evergreens are mostly employed. Mixed with evergreens or planted by themselves in dense rows or groups, many deciduous-leaved trees and shrubs are useful. Young white oaks and beeches hold many of their leaves during winter and make a very good screen, but they are unsightly at such times. The following are the common names of our best evergreens :

Norway pine, where not too near the dwellings, though the tree is a little coarse.

Red cedar grows rather slowly, and becomes brown in winter.

White cedar makes a dense though somewhat slow growth, and is a general favorite.

White pine, one of the very best. It may be cut back if desired, thus keeping the trees denser and more stocky.

White spruce. Very good.

We enumerate some of the best deciduous-leaved trees :

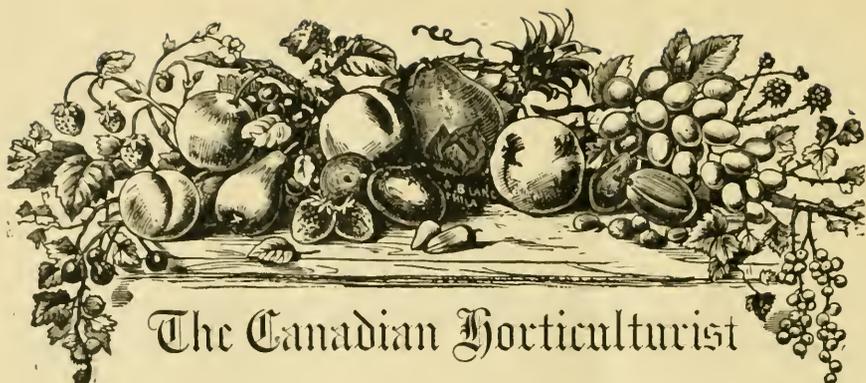
American elm,	Black maple,	Pepperidge,	Silver maple,
Aspen,	Black oak,	Red maple,	Sugar maple,
Basswood,	Box elder,	Sassafras,	Tulip tree,
Beech,	Mulberry,	Scarlet oak,	White oak,
Black cherry,			

In selecting shrubs to mix with trees, there is no danger of going amiss. Each possesses some peculiar merit.

Alders, for moist land,	Elders,	Mountain ash,	Virginia creeper,
Bladdernut,	Grape vines,	Mountain maple,	Wild crab,
Bittersweet,	Hazels,	Prickly ash,	Wild plum,
Blue beech,	Hawthorns,	Service berry,	Willows,
Choke cherries,	Honeysuckles,	Sumachs,	Witch hazel,
Dogwoods,	Judas tree,	Viburnums.	

—*Flora of Michigan.*

By overbearing many young trees are irreparably injured. Many planters, however, are so much afflicted with the muckle in their eye that they sacrifice the prospective dollar. In other words, they are so eager for a crop that their trees die of a broken back long before their days of usefulness should have been over. Trees just coming into bearing should be carefully watched, and if the crop promises too large for their strength, the evil should be averted by thinning.



The Canadian Horticulturist

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REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

NOTES AND COMMENTS.

POPULAR RASPBERRIES.—Conversing the other day with Mr. Jonathan R. Pettit, one of our Grimsby fruit growers, we were comparing the productiveness of the *Marlboro* and the *Highland Hardy* raspberries. In Mr. Pettit's opinion, the latter yields almost double the quantity of fruit to the row, and is fully eight days earlier in ripening. Indeed, with Mr. Pettit, the *Marlboro* is very little in advance of the *Cuthbert*. We mention this, because we are aware that some growers will scarcely agree with Mr. Pettit in saying that *Highland Hardy* is as productive as the *Marlboro*. Certainly the latter is not quite as early, but the fruit is much larger, and its color is another point in its favor.

The *Cuthbert* is, in our opinion, the most satisfactory of all raspberries, if grown upon suitable soil. Where the ground is too hard and too dry, or inclined to bake in summer, raspberries will be unprofitable, but on rich sandy loam, moist, but well drained, the *Cuthbert* yields enormous crops. This year it has surpassed its record for productiveness at Maplehurst, when compared with any former year, and, on the whole, we are inclined to place it first among our raspberries for profit. That other growers agree with us in this, is proved by the large plantations of this variety which are being set out, some even cutting down apple orchards, intending to devote the land to this berry.

Shaffer's Colossal raspberry is, in our opinion, not likely to be popular. It is a grand berry, so productive and so healthy a grower, and the quality so excellent, when used fresh for the table, or for canning purposes. It ought to command a higher price in the market than the *Cuthbert*, but unfortunately its color is against it, and from consignees in every market, the same word is returned, "Cannot sell those dark berries," and the returns are a proof of what they say, being usually little more than half the price returned for the *Cuthbert*.

THE PROVINCIAL APPLE CROP REPORT.

Prof. James, of the Bureau of Industries, Toronto, has just issued a report of the apple crop, based upon replies from very numerous inquiries, sent out by the Department. This corresponds very nearly with the report already given our readers, through these columns. He says that the crop is almost a failure along the lakes from Sarnia to Toronto. The prospects are better eastward through Ontario, Durham, Northumberland, Hastings, Lennox, and Prince Edward counties; better still in the St. Lawrence and Ottawa districts, and heavy in the Georgian Bay and adjacent counties south, as Huron, Bruce, Grey, Simcoe, Perth, Wellington, Waterloo.

He estimates the total production of Ontario for this season at 3,384,179 lbs., and most correspondents place the whole apple crop of Ontario at less than one-half a full yield. Apples really suitable for export are likely to be few.

Exports of Canadian apples are valued at about one-half those of the United States: our total apple exports for the last three years amounting to \$3,069,055, while those of our American cousins amounted to \$6,597,065.

The variety of apples most grown in Ontario are as follows: *Six autumn*—Oldenburg, Fameuse, Colvert, St. Lawrence, Fall Pippin and Alexander. *Six winter*—Spy, Baldwin, Greening, Golden Russet, Roxbury, King.

THE MARKET FOR WINTER APPLES promises to be good. As will be seen from our various reports, the American crop is short, and our apples will be wanted at high prices by our neighbors to the south of us. Any one who has a crop of clean apples will do well to wait for a good offer before selling.

PINCHING BLACKBERRIES.—A subscriber recently made some inquiry about pruning small fruits. Mr. Thayer, a member of the Minnesota Hort. Society, speaking of pinching blackberries, says, that he performs this operation for the most part, when the canes are about ten inches high. Formerly he had left them until they were ten or fifteen inches high. He was led to make a change from noting the effect of a severe frost cutting off the new shoots, when they were six or eight inches high. He found that the stubs, thus made, threw out new branches, and these formed the best canes he had ever had. The result of his nipping them at ten inches was a finer growth of canes than he ever had before. He is also careful to remove the surplus canes as soon as possible, with the pruning knife, treating all suckers as weeds. He finds that a blackberry plantation will, if cared for, last twenty or thirty years. The varieties which he grows are, the Briton for the main crop, with a few Snyder's to begin with. With good culture he finds the Snyder fairly productive, giving him from one hundred to one hundred and twenty-five bushels to the acre, but the Briton has averaged one hundred and fifty, and in some cases, two hundred bushels.

To keep the curculio from the plum trees, stir one quart of lime thoroughly in two gallons of water, strain through a cloth and add an ounce of sulphur. Spray the trees with this solution about a week after the blossoms are off and when the fruit is formed; repeat the operation in two weeks, and again in three or four weeks more, and you will have plenty of fruit. About four or five times is all that is needed, and the two gallons will answer for three trees. The curculio can be kept off by corn cobs boiled in sweet water and hung on the trees.

—A. T. S., Clearfield, Pa.

THE FRUIT CROP.

LAMBTON, KENT AND ESSEX COUNTIES.—*Sir*,—Further inquiries substantiate the fact that few apples will be harvested in this district; not a quarter of a crop, especially in Essex there will not be enough for home consumption. Pears will be half a crop, but the sample is not up to the standard. There are scarcely any peaches in this part of the country, except in this township near Lake Erie, where there may be a quarter of a crop. Plums are fair, and the grape crop an exception; it promises to be very heavy.—N. J. CLINTON, Windsor, Ont.

PETERBOROUGH.—*Sir*,—The apple crop in this county will be short, so far as I can learn, and will be of the early varieties. Some orchards are full, others lacking. The fruit promises to be of good quality and fine looking. Pears are good and the trees are well laden, but there are not many grown in this county, not more than enough for home consumption. Several members of our Association, to whom I have spoken, say that the crop of apples will be below that of last year.—E. B. EDWARDS, Peterborough.

RENFREW.—*Sir*,—Grapes, apples and plums will be an abundant crop in this section.—A. A. WRIGHT, Renfrew, Ont.

THE EUROPEAN FRUIT PROSPECTS.

Sir,—As we are approaching the season for shipments of apples from your continent, on which supplies this country largely depends, we have pleasure in advising you that the prospects for the sale of apples here is good. Our home crop is light, as also the continental one. This latter will be barely sufficient for home requirements, so that exports from there to us will be small, leaving our markets open for shipments from across the Atlantic. We strongly recommend shipping only the best stock.—L. H. WILLIAMS & Co., Liverpool, England.

Sir,—Although shipments from your side must be influenced in some degree by the success or failure here, in reality, the *extent* of shipments mainly rests on the success, or failure, of your own crop. Our requirements are so large that, however good our crop, we must still look for large additional supplies. The continental crops, especially those of France and Holland, are to be considered, but when you have an abundant crop, the prices will not induce continental growers to ship to us, as they can do better at home. A few years ago shipments from Denmark were only made possible by the failure of the American crop, and attempts to establish a trade between the two countries has proved impracticable as against average American supplies.

The following is an outline of the prospects for apples on this side :

UNITED KINGDOM.—The south-eastern apple districts, which usually supply the London market, have suffered largely from early droughts and subsequent frosts, and the apple trees are in consequence quite bare of fruit. In the southern and north-eastern parts of the country, there is an abundance of both early and late sorts, and the crop in these districts, may, to a certain extent, neutralize the shortness of the supplies in the south-eastern districts.

HOLLAND AND BELGIUM.—A better crop than last year and the fruit of good quality, but that in Holland will be largely unsuitable for our market.

FRANCE.—Half a crop, and in some districts partially a failure.

GERMANY AND DENMARK.—Half a crop, mostly early sorts, and shipments can only be induced to our markets by the prevalence of high prices. The indications are, therefore, that our apple crop will be, on the whole, heavier than last year, and supplies from your side should not reach us until the month of October, when our markets should be open for large samples. For Liverpool and Glasgow, earlier supplies should meet a ready market.—J. B. THOMAS, Covent Gardens, London, England.

❖ Question Drawer. ❖

PROTECTING THE GRAPE VINE.

No. 487.

SIR,—I have carefully planted the Moore's grape vine you sent me and up to this date, August 2nd, it has made a growth of eighteen inches. The winters here are cold and long, and I would like to know how to manage with the vine. Shall I lay it down and cover it, or let it stand on the trellis where it is growing now? I have been taking your journal a little over a year and like it very much. I am setting out a small orchard and find considerable information in the journal for me.

IRA N. BURT, *Keswick Ridge, N.B.*

Although Moore's Early is a hardy variety of grape, yet there is no doubt that, in your country, the best plan is to lay down every variety of grape in the fall and cover it with earth. Even in warmer sections, this practice is found to largely increase the productiveness of the vine.

HOW TO MAKE GRAPE JUICE.

No. 488.

SIR,—In your next number would you please give a recipe for making grape juice, such as we had at Maplehurst, and please mention the variety of grape from which it was made.

W. S. TURNER, *Cornwall.*

The grape juice referred to by our correspondent was chiefly made from ripe Concord. We can recommend this beverage as most delicious and wholesome, and one which, in no way, interferes with anybody's temperance principles. Probably no drink is so safe, and conducive to health, in summer time, as grape juice, and we have pleasure in recommending it for general use throughout the country. Of course, it can only be kept sealed up in the same way as our canned fruit. The following is a very good recipe for its preparation, which has already been published in this journal:

"Take grapes thoroughly ripe and fresh from the vine. The Concord and Isabella are especially good, but any fresh, ripe and juicy grape may be used. Allow one quart of water to three quarts of grapes, freed from the stems. Use no sugar. Let it come slowly to a boil, and, when the whole mass is boiling hot, strain the juice through a cheese-cloth, flour sack or other strong cloth. Then return the liquor to the fire, and, as soon as it is at the boiling point again, can it. The less the fruit or juice is cooked, the brighter will be its color, and the better the natural flavor of the grape will be retained. This, like all other articles to be canned, must be at the boiling point when it is sealed. If the juice is to be used at once, it should not be brought to the boiling point a second time. Use wooden spoons in its preparation and only glass jars for keeping it. The action of any acid substance on tin, is to corrode it and poison the fruit."

GRAFTING YOUNG TREES.

No. 489.

SIR,—I have a number of small apple trees that I want to graft next spring. Would it be best for me to take them up this fall and store them in the cellar, or to let them stand until next spring and then graft them and set out in the nursery rows. They are scattered around the fields and I have to take them up before grafting.

IRA N. BURT, *Keswick Ridge, N.B.*

If the seedling apple trees you refer to are small, suitable for whip grafting, the best way would be to take them up this fall and store them in green sawdust in the cellar until the convenient time for grafting them, and when this operation is finished, they may be put back again in the sawdust until the time for planting out in the nursery rows. If, however, the trees are of a larger size, so that they would require cleft grafting, we would advise planting them out first or in the places in the orchard where they are to remain, and to leave the grafting until they have made a vigorous growth. They could then be grafted in the May or June following.

BURDOCK STALK BORER.

No. 490.

SIR,—I send you a borer found at work among my burdock, boring the stalk. Surely he is a friend that ought to be encouraged?—W.

Reply by Prof. Fletcher, Ottawa.

Your post card is just received and also the accompanying caterpillar which is that of *Gortyna cataphracta*, a species closely related to the potato stalk borer, *Gortyna nitela*. It is always sent in every year from various localities as a borer in different kinds of plants; among others, I have had specimens sent me as injurious to reed canary grass, and a few other large-stemmed grasses, including Indian corn, tomatoes, lillies, potatoes, sunflowers. It is sometimes sufficiently abundant among tomatoes to be noticed by a casual observer, but, as a rule, escapes detection, except to the quick-sighted, on account of its feeding inside the stems. When one stem has been hollowed out, the caterpillar leaves it and bores into another. When full fed, which is about this time of the year, it burrows a short distance into the ground, and changes to a yellowish-brown chrysalis, from which the perfect insect, a pretty, tawny moth marked with dark lines, emerges in about a month.

Amongst fruits, I have found this caterpillar troublesome in the young shoots of raspberries, and this year a very unusual attack was brought under my notice in which the fruit of a gooseberry bush was hollowed out, several berries being destroyed.

The fact of the caterpillar you send having been found attacking burdock, cannot, I fear, entitle it to the designation of friend. Its friendship, I fear, would be too much akin to that shown by the Saxons to the ancient Britons, and if there were no Piets and Scots, in the shape of burdocks, they might pay too

much attention to our vegetables. It must not be forgotten either that their title to friend would even then stand upon the weak foundation of our want of appreciation of the burdock, for in Japan this plant is one of the most highly esteemed vegetables.

THE YELLOW TRANSPARENT IN QUEBEC.

No. 491.

SIR,—I take pleasure in sending you two Yellow Transparent apples, grown in my little garden, as specimens of what, with care, can grow here, under the 45th latitude, but not with the pretention that something superior can be produced in more favorable localities. They are off a two-years-ago top-grafted tree; first bearing the worst apples I ever saw in this and the Old Country. No human being could eat the fruit, and yet it was sold to me by a good(?) agent for a grafted tree! I consider the Yellow Transparent as a precious acquisition for this part of the country. With the best wishes for you and your work.

PASCHE, *Bryson, Quebec.*

These samples are fine. Indeed, no better can be produced in any other part of Ontario. They are quite large, reaching about 3½ inches in diameter, and beautifully clear in skin. With many varieties of apples, the farther north they can be grown with success, the finer the sample.

FALL vs. SPRING PLANTING OF STRAWBERRIES.

No. 492.

SIR,—Is it better to set strawberry plants in the spring or in the fall?

W. H., *Rockton, Ont.*

Strawberry plants may be set almost any time during the summer, from April to October, but the most favorable months are April and May in the spring, and September and October in the fall. Most fruit growers have the most leisure in the spring, and, therefore, choose that season. There is little advantage in planting in the fall unless it can be done quite early so that the plants may become well established before the winter. Well-rooted young plants cannot often be found before September, and, if they can, August is generally too dry a month for success in transplanting. But, if set by the beginning of September, a small yield may reasonably be expected the following spring.

FERTILIZERS FOR STRAWBERRIES.

No. 493.

SIR,—What is the best manure, when you have not barnyard manure, to use on strawberry and all other small fruits, including grapes?

W. H., *Rockton, Ont.*

For vigor of plant growth, the strawberry, and all other small fruits, need nitrogen. This is well supplied in dried blood or nitrate of soda. For the perfecting of the fruit itself, potash and phosphoric acid are needed. The latter is easily procured in the form of ground bone, and the former in wood ashes.

The writer makes very free use of this latter material in the vineyard and in the small fruit plantation. Wood ashes contain, not only a large percentage of potash, but a small percentage of phosphoric acid, and on a light soil appear to be of especial merit. In one case, some rows of raspberry and blackberry bushes, which had been bearing very small crops for several years, were thrown into abundant bearing by a liberal application of wood ashes. The quality of the fruit is also benefited by the potash which they contain.

Question Budget

(4) In beginning to keep bees, what kind would be best for me to purchase? How many hives would be sufficient for me on the start? What kind? Should the bees be wintered out of doors?

(5) Would it not be well to allow members a choice of two or more plants by paying an additional sum to cover expenses?

(6) Would it not be a good plan to have a list of Horticultural books that could be obtained at a little over cost, or by paying two or three years' subscription at one time?

✻ Open Letters. ✻

THE BEE-KEEPING DEPARTMENT.

SIR,—With regard to having a part of the CANADIAN HORTICULTURIST devoted to bee-keeping, I may say that at present the Bee-Keepers' Association is giving its members the *Canadian Bee Journal*, and is somewhat interested in making that journal a success. I think, however, that there could be a few pages of the HORTICULTURIST devoted to bee-keeping, to advantage. As you remark, quite a number of the bee-keepers are interested in fruit raising.

At our last annual meeting there was quite a discussion on the subject of starting a bee journal, under the management of our Association. It was decided that the Association was not in a position to manage a journal, but had there been some similar proposal then made, it is possible that a definite arrangement could have been arrived at between the bee-keepers and the fruit-growers. Should the matter come up again at our next meeting, I will speak of the possibilities of some agreement being made between the two Associations.

W. COUSE, *Secretary of the Ontario Bee-Keepers' Association.*

SIR,—I thank you for the sample copy of the CANADIAN HORTICULTURIST, and must say that it is a neatly got up paper, and should judge that the subscribers must be well remunerated for their investment. Regarding a department on bee-keeping being started in your journal, it might be well to go slow in the matter. Had such a proposition been made to the Bee-Keepers' Association last January, I believe that we would have jumped at it. A proposition of the same kind might very properly be placed before the meeting of the Bee-Keepers' Association at Walkerton, next January. You are right in saying that our interests are closely connected, but it must be quite a task to induce people to write papers. If you get some contributions from our best men, such as R. McKnight, of

Owen Sound ; S. Corneil, of Lindsay ; Allan Pringle, of Selby ; R. T. Holtzman, Brantford ; and F. A. Gemmel, of Stratford, it would be quite safe to start such a department. As for myself, I am not much of a writer, and would not promise to write regularly for any paper, but would contribute at times to the bee department in the HORTICULTURIST, if you make such an addition.

B. B. CHALMERS, *Pool, Ont.*

SIR,—Thank you for the sample copy of the HORTICULTURIST, with which I am much pleased. As to the advisability of adding a department on bee-keeping, I think it would be a step in the right direction, and I think it would pay. I do not anticipate any trouble in getting matter to fill a reasonable space, thus making it, if possible, still more interesting.

A. PICKETT, *Nassagaweya, Ont.*

SIR,—I do not think it would do any harm to add the subject of bee-keeping to your paper. It might do a great deal of good, as many fruit-growers keep bees, and nearly every keeper raises more or less fruit. I do not know whether bee-keepers would write for such a department, as generally our best bee-keepers write the least. Yet, I think you would receive sufficient support.

The HORTICULTURIST was highly spoken of at the meeting of our Association, and I have no doubt that many bee-keepers would take a great interest in your journal, if that department were opened.

MARTIN EMIGH, *Holbrook, Ont.*

SIR,—Your card and sample copy of the HORTICULTURIST to hand. I agree with you that the two industries go hand in hand, horticulture and apiculture ; and therefore think that the opening of the latter department in your journal would be of benefit to all concerned.

F. A. GEMMILL, *Stratford, Ont.*

SIR,—Concerning the propriety of adding a department of bee-keeping to your journal, I think favorably of it. Writing for the press is out of my line, but I think there are plenty of bee-keepers in Ontario who would be willing and competent to contribute to such a department.

F. A. ROSE, *Balmoral, Ont.*

SIR,—I have no doubt that you could keep up an interesting bee-keeping department in your journal. On the other side of the lines I know some of the foremost writers in America contribute to journals not exclusively devoted to their own pursuit. I have no doubt that you could get contributors, but you might have to pay them. Your proposal to start a bee department strikes me as interesting, in view of the discussions on bee journalism in Ontario Bee-Keepers' Association. As a single director, it would be unwise for me to express an opinion as to the future possibilities, but I will bear the matter in mind when our next meeting comes off.

S. CORNEIL, *Lindsay.*

SIR,—I think the proposition to have a bee-keeping-department in the HORTICULTURIST a good one, but you might not have very much to put in it sometimes. I think that while bee-keepers would be glad to contribute to such a department, there would sometimes be a deluge and again none at all. I was wishing for such a department in your journal when this spraying was under consideration.

J. K. DARLING, *Almonte, Ont.*

SIR,—My opinion with reference to the proposed amateur bee-keepers' department in your journal, is that such an undertaking would be hailed with pleasure both by bee-keepers and fruit growers, as their interests are mutual. Thank you for the sample copy of the CANADIAN HORTICULTURIST.

W. J. BROWN, *Apiarist, Chard, Ont.*

SIR,—I think it would be an excellent idea to open a department on apiculture in the CANADIAN HORTICULTURIST. Fruit and bees go well together, and a great majority of the bee-keepers in Michigan are great fruit-growers, and would presume that the Ontario climate is much like that of Michigan. I have no doubt that you can manage that department with credit to your journal, providing you make it a study yourself.

A. I. ROOT, *Publisher, "Gleanings in Bee Culture," Medina, Ohio.*

PIN FOR FRUIT LABELS, AND IOWA FRUIT PROSPECTS.



FIG. 66.

SIR,—I enclose you a sample pin which I have been using to hold a card with the names of fruit and the entry tag, at our exhibitions. I have the names of the fruit printed in English and German on clear white cards, and it shows a long way from the fruit stands. The card enclosed will show you where the pins may be bought at a cost of thirty cents for a box of one hundred. Our fruit crop is poor this year owing to so much rain and cold weather during April, May and the first part of June. All our fruit blossomed very full, but dropped badly. Plums are an entire failure; cherries rotted on the trees and the grapes have mildewed and are rotting. I am selling my early apples, largely Duchess of Oldenburg, for \$4 per barrel.

J. E. CORLETT, *Sec. Clayton Hor. Soc., Farmersburg, Iowa.*

GARDENING IN MIDDLESEX.

This will not be a very profitable year to the fruit grower in this part of Middlesex, as the late frosts in the spring injured both strawberries and raspberries, and also currants, and when the apples, plums, cherries and pears came in blossom the weather was so wet that fertilization was not complete, and consequently our crop of fruit is very light, compared with what it was last year. Peaches were badly winter-killed and did not blossom at all, and, owing to the excessive dry weather, some of my blackberries and black raspberries have dried up without ripening their fruit. The Erie blackberry is not hardy here but it gives larger berries than either Agawam or Ancient Briton. The latter I find the hardiest. The Rancoes raspberry did not do well with me this year, and the Cuthbert was winter-killed to the snow line.

Potatoes will be a short crop here. Many planted them the second time, and vegetables generally will be a poor crop, but we have a very good crop of early potatoes, cabbage, onions, and we had ripe tomatoes by the first of August. The flower garden has given a good account of itself this year so far, and now the monthly roses are giving some excellent flowers. Even though the past three or four weeks have been extra dry, the Polyanthus have been continually in bloom. The following roses of the hybrid perpetuals did best with me this year, White Baroness, Merveille de Lyons, Perfection de Blanchés, Helen Paul, and White Perpetual Moss, Paul Neyron, John Hopper, Vick's Caprice, Comtesse de Serenye, Dinsmore, Zebrina, Little Gem, Henry Martin; but some others I have are not as good. Gen. Jacqueminot did not bloom nearly as well this year as formerly. I have a seedling pink Scotch rose, that gave some excellent blooms early in the season, but, like most of Scotch roses, only bloomed early in the summer and then took a long rest. I got some French Canna seed this spring and they are commencing to bloom now. I filed small holes in the seed and then soaked them in hot water before planting, and then I tried to keep the ground from getting too dry, as that is sure death to any kind of seed after being soaked in water, and when I transplanted them to the open ground I puddled the soil in around them and then put some dry clay on top and shaded them for a few days, and they never stopped growing when the dry weather came.

Your proposed changes in the HORTICULTURIST meet with my approval, the size of the page as at present just suits my fancy and of course no reader should grumble at an addition to the number of pages and illustrations.

JAS. M. WATERS, *Fernhill P.O., Ont.*

THE WILLIAMS' STRAWBERRY.

SIR,—The Williams' Strawberry has pleased me this season better than ever before. The cool moist weather seems to have favored the development of its characteristic qualities. The crop was something enormous and the berries the largest of any I ever saw; There was no trouble with the white tips. Some of the best berries measured five and a quarter inches in circumference. Its season lasted over a month and held its size longer

than any other berry grown here. It was tested alongside of such good sorts as Bubach, Jessie, Warfield, Haverland, Mrs. Cleveland, Eureka, Itasca, Daisy, Viola, Lady Rusk, and a few others considered the best sorts; but it far outstripped all competitors and commanded one or two more cents a basket in the Brantford markets than any other variety. I consider it the best all-round berry I have ever seen during an experience extending over forty-three years in strawberry growing.

WM. GREIG, *Cainsville, Ont.*

SIR,—The five Williams' strawberries received of you in 1891 wintered well; far better than the Sharpless. They are a very thrifty growing plant. The apple tree Gypsy Girl, received from you this spring was in good condition and is doing finely.

A. S. CROSBY, *Complin, Que.*

CANADIAN APPLES FOR FIRST-CLASS FAMILY TRADE IN ENGLAND.

SIR,—Kindly allow me to call the attention of your leading apple shippers to the importance of putting up a really choice line of Baldwins, or other specially sound keeping fruit. Until recently the green fruit business in the United Kingdom has almost exclusively been done by fruiterers, but last season, my principals, Messrs. Marples, Jones & Co., Liverpool, sold a considerable quantity of apples, particularly Baldwins, at good prices to provincial grocers with whom they do a very large trade. These were consigned through the Imperial Produce Company, of Toronto, and paid the shippers a good profit. In moving around amongst the provincial grocers I find an inclination to go into this business more extensively, especially if our Canadian friends can send forward really choice, selected keeping fruit, packed in cases containing about a bushel of apples, looking quite as large as they are and neatly branded on the end. What is needed is a package that can be sold whole to the consumer, containing such goods only as will be a credit to the Dominion.

WALTER STARK, *Toronto House, Newsham Drive, Newsham Park, Liverpool.*

SEEDLING STRAWBERRIES.

SIR,—I send you to-day a sample of seedling strawberry. Would you kindly pass judgment on it in your next number. Three years ago it was discovered growing where a large number of refuse berries were thrown out. It was transplanted, and last year we had quite a number of plants, which flowered profusely, but were all killed by a late frost. This year I have quite a bed, and they bear very abundantly. They are very hardy, and strong growers, and their roots penetrate deeply. I think they are a seedling of the Wilson, possibly fertilized by the Sharpless.

ROBERT MCINTOSH, *Newcastle.*

[Unfortunately these berries were too loosely packed, and came in bad order. The appearance of them, however, leads us to want to see more of them.—EDITOR.]

THE HONEY STRAWBERRY.

SIR,—This new strawberry belongs to the Alpine species, indigenous to the Sierra Nevada mountains. *Fragaria chilensis* is the botanical name of this variety. It is an ever bearing variety and yields its greatest crops during the months of August and September, after other varieties are gone. The berries are glowing red in color, exceedingly sweet, juicy, aromatic, delicious, melting in the mouth, without a particle of hard core. The berries are not large, but, by proper cultivation, will average three quarters of an inch in length; they are oblong in shape. This season I noticed berries that were the inch and a half in length and a half inch in diameter at the base. I have counted at one time sixty-five berries on a single plant and found numerous young shoots loaded with blossoms besides, and this plant was no exception.

The Honey strawberry is exceedingly prolific and, in favored climates, will bear abundantly all the season long; here it continues in bearing about eight months. It will also stand shipment well. The Honey strawberries raised in this country, are shipped to that great pleasure resort, Lake Tahoe, where they bring a good price. It is a perfect flowering variety and would be valuable as a fertilizer among pistillates. In a word I might sum up the good qualities of the Honey strawberry as follows: great productiveness, spicy, aromatic, flavor, delicious sweetness, sweet fragrance and splendid coloring.

S. L. WATKINS, *Grizzly Flats, Cal.*

❖ Our Book Table. ❖

MICHIGAN FLORA.—Prepared for the thirtieth annual report of the Secretary of the State Board of Agriculture, by W. J. Beall, M.S., Ph.D., and C. F. Wheeler, B.S., Agricultural College, Michigan, 1892.

This is a most interesting report. It contains, not only a complete list of the flora of the state of Michigan in natural orders, but a great deal besides, which is both interesting and valuable to students, whether of that State or not. For instance, there are interesting chapters on the trees and shrubs of Michigan, as compared with those of the rest of the world, with reasons why the Michigan flora is so rich, and why there are so few specimens in Great Britain. There are interesting lists of trees, selected for various qualities, as, for example, the native trees and shrubs which should be selected for the color of their leaves in autumn; small trees distinguishable for their flowers; shrubs and trees which are distinguishable for their beautiful fruit, and lists of those which are distinguishable for showy bark. Then follow lists of plants which climb or twine; plants suitable for winter bouquets; native ferns; trees which indicate a fertile soil, and others which indicate a barren soil; trees valuable for timber, for posts and sills, for cabinet work, etc., etc. Clippings from these parts of the volume will be made for use in future numbers of our journal.

ANNALS OF HORTICULTURE in North America, for the year 1891. A witness of passing events and a record of progress. By L. H. Bailey, Cornell University.

This book comes to us beautifully bound in cloth. It is a volume of over four hundred pages, and is quite a new departure in book making. It is an attempt at making an annual record of the horticultural progress of North America, and of Classifying our scattered knowledge of American horticultural literature. Part I of this volume is devoted to General Annals under the following heads: 1st, Fruits, vegetables and general interests; 2nd, Ornamentals; 3rd, Plant diseases and insects; 4th, National and educational interests; and Part II to Special Annals as follows: 1, New introductions of 1891; 2, Census of cultivated indigenous plants; 3, Plant portraits of 1891; 4, Directory of the national, state, provincial, and other most important horticultural societies in North America; 5, Directory of horticulturists, or those in charge of horticultural work, of experiment stations in North America; 6, The botanic gardens of the world; 7, Title index to experiment station horticultural literature in North America of 1891 (including publications of the Department of Agriculture); 8, Subject index of the experiment station horticultural literature in North America for 1891 (including publications of the Department of Agriculture); 9, Books of 1891; 10, Horticultural periodicals of the world; 11, Tools and conveniences of the year; 12, Necrology of 1891. Evidently this is a book which no student of horticulture can afford to do without.

TRANSACTIONS OF THE MAINE STATE POMOLOGICAL SOCIETY FOR 1891. Secretary D. H. Knowlton, Augusta, Me.

These reports are always interesting to us in Canada, because of the similarity of climate between that State and the northern parts of our province. The experience of fruit growers in Maine with hardy fruits is valuable to our apple growers in the colder parts of Ontario. Some of the subjects discussed are, Marketing of apples, Grape growing, Pear culture, Fruit growing compared with other agricultural industries, Fruit lists, secretary's portfolio, etc.





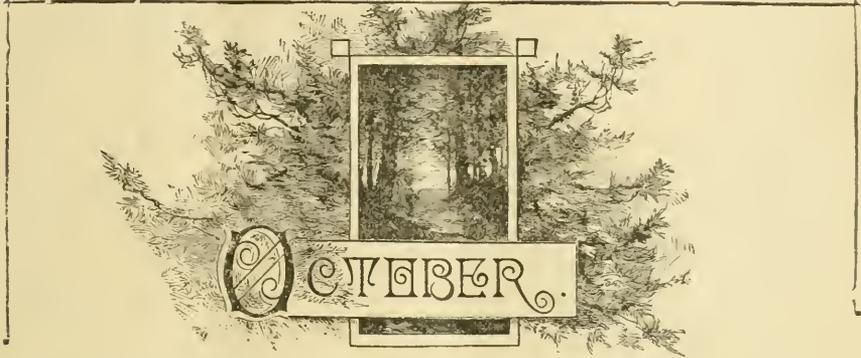
Scherzer's Peach, 1871

THE
Canadian Horticulturist.

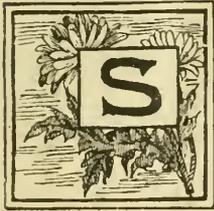
VOL XV.

1892.

No. 10.



THE CROSBY PEACH.



SO uncertain is the peach crop in Ontario that very few plant orchards with confidence. The venture compares well with gold mining; here and there one makes a fortune, while some meet only with failure. Mr. Tyehurst, with his seventy-five acres, gets a crop worth \$10,000 in a single season, while many have either a small crop or a complete failure. The disease known as the Yellows has cleared out many orchards before they have given any returns, and climatic influences are often destructive to the fruit buds, even in places where other conditions are favorable.

The Crosby comes highly commended from the Eastern States. It is an attractive looking peach, but its great merit consists in the hardiness of its fruit buds, an important consideration with us. During the last decade it has been on trial in Massachusetts and Connecticut, and has given ten consecutive crops of fruit, when the standard varieties, during the same term, gave only two or three crops.

The Crosby resembles the Wager in tree and fruit, but the Wager cannot be compared with it in hardiness of its fruit buds.

Our colored plate of this peach shows a very large sample, quite above the average, such as would only be produced under special conditions. The fruit averages only medium in size, from two to two-and-a-half inches in diameter.

This peach was first sent out in 1876 by a Mr. Crosby, a nurseryman of Massachusetts. It was distributed by the Massachusetts Agricultural College,

under the name of *Excelsior*, and has also been called *Hale's Hardy*, because Mr. Hale, a very prominent peach grower in Connecticut, first grew it extensively. The name *Excelsior*, however, was found to be confusing, because there was also a peach cultivated under the name *Prince's Excelsior*. The United States Division of Pomology decided to give it the name of its original introducer, Mr. Crosby.

Mr. VanDeman, of the United States Division of Pomology, describes it as follows: Size, medium, about two inches in diameter; shape, round or oblate, sometimes being compressed towards the apex; cavity, medium; suture, moderately deep, and extending from the base to beyond the apex, often causing the tip to be sunken; color, bright yellow with crimson splashes and stripes, very attractive; skin, moderately thick, with short pubescence; flesh, bright yellow, red at the stone, juicy; stone, small, blunt, parting readily from the flesh; flavor, mild sub-acid, rich; quality, above medium; season, the last week in September in Massachusetts, ripening just before Crawford's Late.

We wrote Mr. J. H. Hale, the famous peach grower of South Glastonbury, Conn., regarding this peach, asking his opinion with reference to the correctness of the colored plate we are using. He writes as follows: "Your plate of the Crosby peach was made from extra selected specimens grown on young trees, in a high state of cultivation, and so represents the greatest possibilities of this variety, while the plate shown by Mr. VanDeman in his report was made from average specimens, grown in sod on trees twelve or thirteen years old. Both these specimens were grown in Northern Massachusetts, just on the border of New Hampshire. The Crosby is an abundant bearer, and most of the trees I have seen fruiting for some years past have been overloaded. The fruit runs of a good even size, averaging about two to two-and-a-quarter inches in diameter. It is the most attractive yellow peach I have ever seen, with small pit, and of excellent quality; still, it is not so large as the Crawford, and I do not think that it would sell so well in the market as that variety when abundant. But, in my opinion, the Crosby, on account of the hardiness of its fruit buds, will produce full crops many years when there are no Crawfords or other peaches of that class. I have a three-year-old orchard here of Mountain Rose, Crawford, Old Mixon, Stump, not bearing this year or last, but two hundred trees of Crosby, in the same lot, are full of fruit, as they were also last year, and they are only in their second summer. We, who know the Crosby best in New England, think that in it we have a variety which can be depended upon to fruit at least four years out of five. In fact, the trees in the States of Massachusetts and New Hampshire are now loaded with their tenth successive crop. Old orchards of assorted varieties are fruiting well this season, and we expect to harvest ten or twelve thousand bushels. The prices are high, as there is little to come from the south to us."

November and December Numbers free to all persons subscribing during the month of October for the year 1893.

GRADING FRUIT.



THE importance of carefully grading our fruit for market can hardly be over-estimated. One shipper, sending his pears without grading, got low prices, and on inquiring the reason, he was told that they were all seconds, and the price returned was good for that class. The fact was, he had sent his firsts and seconds mixed together, in the same package, and the whole lot sold as second class.

The writer has for years made a practice of carefully grading nearly every kind of fruit. Pears he puts up in three classes; No. 2 are the best of the blemished, and go in barrels; No. 1 are all clean, well-formed samples, and go either in kegs or 12-quart baskets; extras are very fine large samples, and these are put up in 6-quart baskets, with pretty fancy cover, cut one-eighth of an inch thick, with a large elliptical opening cut out of the middle, over which cardinal

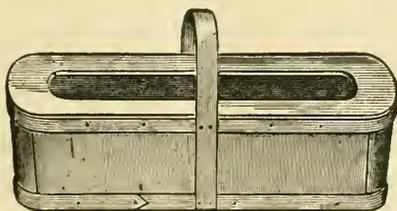


FIG. 67.

CARPENTER'S COVER FOR FRUIT BASKET.

leno is stretched, see Fig. 67. This is a handsome package, showing the fruit, and at the same time completely protecting it from injury, when packed basket upon basket in the car. The grade and the sender's name is marked on the handle, while the address is branded upon the cover, or written on a card and placed inside of the cover.

While it is a great advantage to ship No. 1 and 2 in separate packages instead of being mixed together, yet, if the latter class could be kept entirely out of the market, except as evaporated or dried fruit, it would be a great relief all around. Every one hates to handle second-class fruit; the grower won't put his name on the packages containing it; the salesmen hate to offer it for sale, and the buyer grumbles, no matter how cheap he gets it, and so nobody is satisfied.

In packing apples, equal care in grading is needed, whether for home or for foreign markets. Mr. W. White, of Ottawa, encloses us the following clipping from an English paper, advocating the use of small packages for choice apples:

"Why don't Canadians take a leaf out of the Australians' book in supplying British apple-markets?" said a well-known Canadian man of business the other day. "I know that the Canadian fruit comes in at a different season, and is of not quite the same class, but I believe that were Canadian exporters to send their choice apples here in smaller boxes or barrels, they would do a large trade. You may see the Australian apples at Covent Garden in 40 lb. boxes, and upon each box about 10s. is realized. A barrel of Canadian apples of the weight of 196 lbs. goes for about the same money. A man will often buy a small lot of 40 lbs. for his family use, and I fancy the Canadians would do well to consider the possibilities of meeting the demand for smaller lots which the Australian trade has shown to exist."

Mr. White adds,—“The suggestion is an excellent one. Purchasers, particularly in large cities, don't keep articles of domestic consumption in large quantities—they have no convenience for so doing. When fruit especially is wanted, they prefer to purchase just what is required, and are quite willing to pay a high price if they get just what they want.”

We scarcely see where the advantage would be in using the 40 lb. boxes. Surely the keg or the half barrel is much better. We have for some time practised putting up apples in three grades. No. 2 is understood to mean the second class apples, which, on account of some blemish or imperfection, is unfit for export. These are packed in ventilated barrels, as they are cheaper than the ordinary closed barrel, and any fungus spots are less apt to grow than when shut up tight. Sale can usually be found for this class of apples for cooking purposes, in our own markets, toward the end of November, and usually bring all they are worth. If the fruit-grower has an evaporator on his place, he can use them in it to still better advantage. No. 1 is understood to mean first-class fruit, that is, the samples are fairly perfect, clean and well-colored, besides being uniform in size. In favorable seasons the great bulk of the crop comes in this class, but, unfortunately, in a year like this, nearly one-half must go as No. 2; Extras, are very choice selected fruit, nearly uniform in size, and of high color; suitable for table apples, and these go in half barrels for special markets.

In packing grapes, it is well to observe similar care in the selection. No. 2 are second class, and should go for the wine vat or vinegar. They will consist of such bunches as are very straggling, or contain either unripe or imperfect berries. No. 1, which includes all first-class bunches, well ripened, and of good size, may be packed in the 10-lb. basket, see Fig. 67, with the same cover as shown in Fig. 68, only using that color of lino which best corresponds with the color of the grapes in each package. For very fancy grapes, or extra assorted, special packages are sometimes used, such as are shown in Fig. 69, made with a sliding top, and packed from the bottom in such a way that on opening an even surface of choice grapes is shown.



FIG. 68.

the stems being concealed beneath. The use of a little pinked out paper, of suitable color, under the top of the cover, to pack against, will add to the fancy appearance of the packages.

The use of small packages for fancy fruit is not to be commended in general, but only in cases where the fancy grade is carefully kept up, and an appreciative market for such goods can be found.

American Gardening has been making inquiries among various correspond

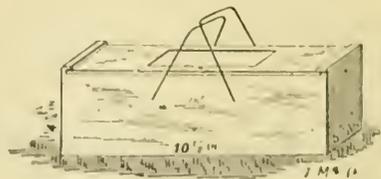


FIG. 69.

ents regarding grape growing. The general opinion of the growers seems to be that the markets are opening up quite as fast as vineyards are being planted, and that no fear need be entertained that in the very near future, our markets will be so over-stocked as to make the business unprofitable. One writer says the great need is improvement in quality, cheaper and quicker transportation, and the season of maturity such, that every northern market may be supplied with fine grapes from June until January, in abundance.

JUDGING MELONS.



IN view of the importance of establishing correct principles in judging fruit, we give place to the following remarks by E. Williams in the *Rural New Yorker*: The judging of melons as generally practised as a farce, as they are almost invariably judged by appearance, size being the ruling factor, and oftentimes by persons unacquainted with the varieties. Musk melons are often evidently wrongly named, and so mixed by crossing as to seriously impair the quality, but they are seldom tasted, and taste should be the deciding factor as to quality, as it often would be of identity. If there is anything more disappointing in the fruit business than, after cutting a large, handsome melon, to find it no better than a pumpkin inside, I do not know what it is. The absurdity of the indefiniteness governing these exhibits and awards must be apparent to all who have ever had any thing to do with them. The judges should be experts and know the tastes and characteristics of the fruits they are to judge well enough to recognize any departure from the normal condition, and the shedule of instructions should specify and define what is meant by *best*—size, appearance or quality. If the former, the Hackensack, and other pumpkin-hybrids, will invariably secure the prizes, and the delicious Jenny Linds, Christianas and Golden Gems may as well stay at home. The nomenclature of these exhibits needs correcting, and the judges should be able, and it should be their duty to do it. Our societies should secure at least one expert on each committee and pay his expenses; or, better still, reduce the duty to one person in each class; let him be an expert and pay for his services. It would be cheaper for the society, and more satisfactory to all concerned, and more expeditious in the bargain.

KEEPING GRAPES FRESH.—The following recipes were given at a fruit-growers meeting in Ohio: (1) Dip the stems of the bunches, where broken off, into melted red sealing-wax and pack them in cotton in large pasteboard boxes. They must be kept where it is dry and cool. (2) Toward the end of October cut the shoots with the cluster attached, sharpen the lower ends to a point and stick them into potatoes. Spread the bunches out on straw or dry hay, so that they shall not touch each other. The grapes must be placed where it is dry and cool.

INSPECTION OF APPLES.



WE have just received a copy of the "Act to Further Amend the General Inspection Act," to which has been added a section providing for the *inspection of apples*. This, of course, was in response to the request of our Association, made through a committee to the House of Commons at Ottawa. Unfortunately, the wording of this amendment has been done without consultation with the members of our committee, or with any apple grower; and the standards have been made so absurdly exacting that it will be absolutely impossible for our packers to come up to the requirements. In consequence, no one will be likely to attempt to comply, and the Act will become a dead letter.

The following are the sections referred to :

109. (1.) In the inspection of closed packages of apples, the inspector shall open not less than one package in every five; and, if the manner of packing is found to be fraudulent, or unfair, then he shall open all the packages put up by the shipper of such package.

(2.) Every brand found to be fairly and properly packed he shall brand as No. 1 Inspected Canadian Apples, or, No. 2 Inspected Canadian Apples, as the case may be, if fit to be so branded.

(3.) The inspector shall also examine the varieties of apples submitted for inspection, and shall correct the nomenclature if incorrectly marked, or, if the name of the variety is not marked, he shall cause it to be marked on the package.

(4.) The inspector may charge a fee of ten cents for each package inspected by him, and such charge shall cover the cost of opening and closing the package.

110. (1.) No. 1 Inspected Canadian Apples shall consist of perfect specimens of one variety, of uniform size, and, in the case of a colored variety, of fairly uniform color, and shall be free from scab, worm holes, knots and blemishes of any kind.

(2.) No. 2 Inspected Canadian Apples shall consist of specimens of one variety, free from scab, worm holes, knots and blemishes of any kind, but not of uniform size or color.

Now let us look into the matter. To open one barrel in five may be necessary in the case of shippers that are known to be somewhat careless, but we are of the opinion that, where the inspector has become acquainted with the character of a certain packer, it is not at all necessary that he should open more than one barrel in ten, taken at random. To open one barrel in five would mean at least thirty barrels in a car-load. Now this would cause too great a delay of a shipment of apples, at Montreal, or at whatever port they were inspected and transferred to the steamer. The inspector should not be obliged by the Act to open more than one barrel in ten.

It is all right to correct the nomenclature, if incorrectly marked; but to make it compulsory that every unnamed lot should be named by the inspector might frequently give him a task which no human being could satisfactorily accomplish.

The fee of ten cents a barrel is too high, at least while the benefits of inspection are as yet unproved. The Dominion Government should provide for the larger part of the work; a small fee of two or three cents would be enough for the shipper to pay, and, if found necessary, after the benefits are fully appreciated, the fee might be raised.

In section 110 we read that No. 1 shall consist of perfect specimens. Now perfection is a lofty word and is a state not easily reached either by apples or men. Had there been a modifying adverb it would have been all right, but no packer would be able to submit his apples to inspection, with any confidence, if the inspector is to apply this word in its strict sense. It provides that the apples are to be of a uniform size. "Nearly uniform" would have been a more suitable phrase. How would it be possible to put up a barrel of apples of *exactly* one size? Perhaps it is well enough, in the case of No. 1, to say that they shall be free from blemishes of any kind, but, in the case of No. 2, the same provisions are made, making scarcely enough distinction between the two grades.

That a properly arranged system of inspection, for Canadian apples which are going forward to Great Britain, would result in immense benefit to apple growers in Canada, seems well assured. We have lately received a communication from an extensive dealer in apples in Liverpool, England, who says that he is pleased with the prospect of such an Act being in operation, and that a reliable Canadian brand would much encourage our export trade. What a pity that the whole thing is inoperative, for this season, on account of such stupid legislation. It will be necessary that this whole matter be carefully discussed at our next meeting, at Brantford, and the secretary authorized to make representations to Ottawa concerning these egregious faults, in order that they may be remedied before another fruit season.

Our own views on this subject may be seen on pages 128 and 129, where the grades were thus described :

Grade No. 1 shall consist of well-grown samples of the variety named, nearly uniform in size, well shaped, of normal color, free from scab, worm holes, curculio knots, etc.

Goods No. 2 shall consist of apples free from scab, worm holes, but which for lack of uniformity in size, deficiency in color, abnormal shape, or any other reason, are considered by the inspector unfit to be graded No. 1.

POSSIBILITIES OF SMALL FRUIT CULTURE.—The figures given in the last report of the Seneca, N. Y., Experiment Station, of yield of strawberries, seems rather startling. The Burt, in matted rows, four feet wide and twenty-four long, yielded at the rate of 11,344 quarts per acre; Beder Wood, 10,890; Parker Earle, 8,168. These, says the Horticulturist, were grown precisely as they should be grown by the small fruit grower.

The Shaffer raspberry gave a grower near the Station 6,839 quarts from 2,550 bushes, occupying one-and-a-half acres. The crop was sold to a canning factory for six cents a quart, and amounted to \$340. The Gregg produced for the same grower, from 2,400 plants, three feet by six, occupying one acre, 2,440 quarts, which sold to a canning factory for six cents a quart.

We often hear of large crops of strawberries from small areas, and count what a prodigious yield per acre the same rate of yield per square foot would give; but, alas! we sadly fail when we try to get the same results in field culture. The possibility of it remains, however, and why can't we?

SCALE OF NUMBERS FOR SIZES OF APPLES.



It would be a great aid to uniformity in the descriptions of new varieties of apples if we could adopt some scale of sizes. so that when we spoke of a variety as being small, medium, or large, it would have a more definite meaning. At the present, the term medium size might convey to one person an entirely different meaning from what it would to another.

We notice in the last report of the Minnesota State Horticultural Society, an excellent suggestion by the Committee on Nomenclature. Speaking of the indefiniteness of the terms small, medium, large, and very large, they recommend

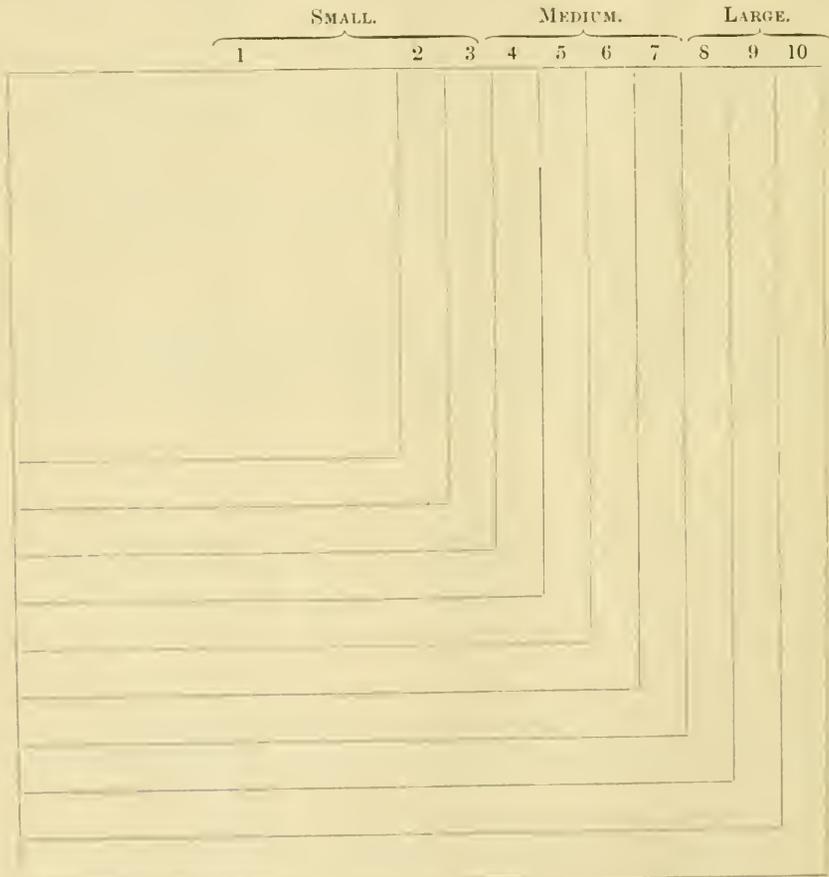


FIG. 70.—SCALE OF NUMBERS FOR SIZE OF APPLES.

a system of designating the size by a number from one to ten, starting at two inches in diameter, and adding one-quarter of an inch for each number. Numbers 1, 2 and 3 will then represent all under medium; 4, 5, 6 and 7, medium; and 8, 9 and 10, large. Any varieties exceeding the diameter represented by these numbers would be designated as very large.

We have made a copy of this scale, and would suggest its adoption by our Association, for use in Canada.

Since writing the above we have corresponded with Mr. J. S. Harris, of La Crescent, Minn., who is the author of the table. He writes :

The square No. 1 should be exactly two inches, and each succeeding one one-fourth inch larger, which will make the outside one, numbered 10, measure $4\frac{1}{4}$ inches, which is the size of the largest specimens of apples grown in this State that have come under my notice. In describing by this method, the numbers are to stand for full average size of typical specimens of the variety. In numbering by this plan, I class all fruit measuring 2 inches or $\frac{1}{4}$ inch less, as size 1; from 2 to $2\frac{1}{4}$ inch, size 2, etc.

FIVE BEST STRAWBERRIES.—A member : Name the five best varieties for market purposes?

Mr. Thayer : Well, to start with, I will tell you that you are asking a good deal. Situated as I am in Wisconsin, with no home market, my aim is to select the berry which is nice looking and firm. That is the berry that gets there in good condition, and takes the public eye. That is why I believe in the Warfield as being the best berry for shipping to a far market. I have used the Jessie as a pollenizer, but its shipping qualities are not so good, unless it is shipped before it turns red very much. For near markets there are the Bubach and Haverland. The Crescent is an old standard for near market, and I have found it a good berry. If I were to select for myself I would take the Warfield, Jessie, Bubach and Haverland, and like everybody else I am skirmishing around to find a good pollenizer. We have a fine pollenizer in Michel's Early. I have found it hard to get a staminate variety that is as prolific as the pistillate.—Minn. Hort. Soc.

CUTTING out the old canes of raspberries, as soon as the fruit is gathered, seems to be of great benefit to the new canes. Pinching the new canes as soon as they are three feet high seems to produce better results than allowing them to grow unchecked. Red raspberry plants from new plantations give better results than those from the older ones. The Houghton Seedling gooseberry seems to lead all others and is productive on a larger variety of soils and under more varied conditions than any other sort. The Red Dutch currant, kept free from weeds and grass, with old wood cut out and plenty of manure on top of the ground, seems to be good enough for the average planter.—Minn. Hort. Soc.

SOME PROMINENT CANADIAN HORTICULTURISTS.—XVIII.

MR. T. H. RACE, OF MITCHELL, ONT.

 This is a source of strength to the Ontario Fruit Growers' Association that it numbers among its directors men occupying so many different positions. We are thus able to come in touch with horticultural life in its various phases, and reach the sympathies of a very wide circle of readers. In the composition of our directorate, we have had, in addition to practical fruit growers, ministers, merchants, lawyers, judges, professors, farmers, florists, nurserymen, Civil Service employees, etc., all, of course, practically engaged in some line of horticulture, to such an extent that it amounted almost to a hobby.

With this number of our journal, we have pleasure in introducing to our readers another member of our directorate, who by vocation is an editor, but, at the same time, an ardent lover of the garden and a successful grower of hybrid remontant roses.

Mr. T. H. Race is editor of the *Mitchell Recorder*, a weekly paper, standing well with the general public in Western Ontario, because so ably conducted. A native of Northern England, he was born in 1846; and when a mere boy came to Canada with his parents, who had purchased a farm in the vicinity of Port Hope. He was educated in the excellent high school of that place; and it was while living on a farm in the neighborhood of that romantic town, in full view of Lake Ontario, that he became enamored with the beauties of nature and first

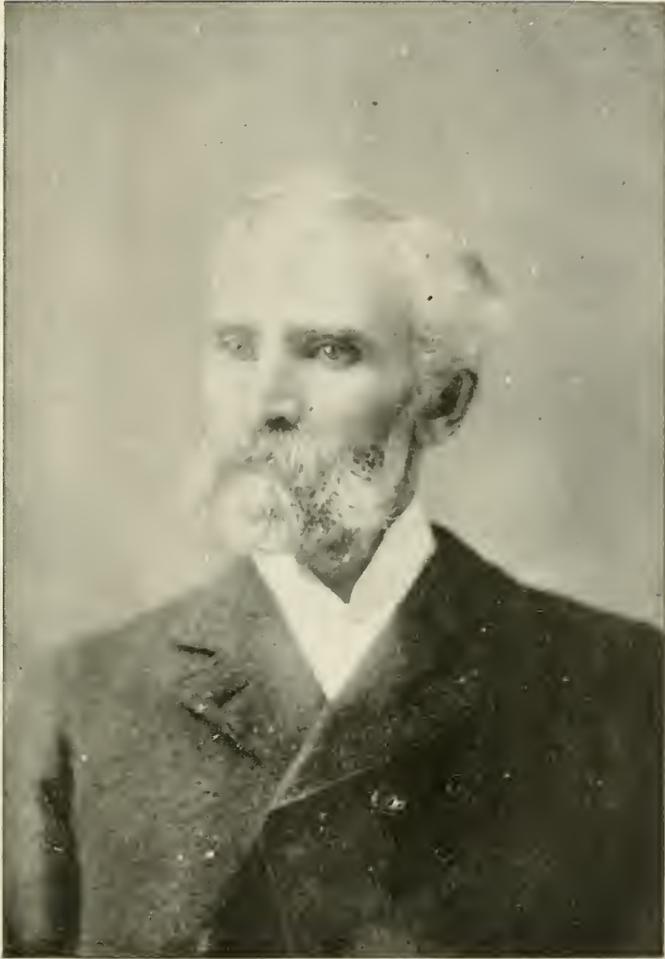
“Held communion with her visible forms.”

There, while yet a boy, he was wont to revel with those poets of nature, Byron, Bryant and Emerson, in the solitude of the beach and the adjacent ravines.

His first lessons in the propagation and cultivation of fruit trees were learned among the fruit growers and nurserymen of Rochester, about the time of the Civil War.

Mr. Race continued farming until he was twenty-six years of age, when he entered upon business life. During the years he was thus occupied, he never lost his fondness for the cultivation of fruit and flowers; but it was not until he went to Mitchell and engaged in the newspaper profession in 1880, that he became an enthusiast in fruit culture. His particular hobby is hybrid remontant roses, of which he grows some fifty or sixty varieties.

For many years he has been a reader of the *CANADIAN HORTICULTURIST* and of the reports of our Association, but he first attended one of our meetings at Hamilton in 1889, and gave a paper on “The Garden.” The following year he was elected director for the counties of Perth and Middlesex, and the City of London. In December, 1891, on the election of Mr. A. H. Pettit, as President, Mr. Race was elected Vice-President, a position of honor which his previous literary training and practical experience has well qualified him to fill.



T. H. RACE, ESQ.

EXPERIENCE WITH GOOSEBERRIES IN SOUTH SIMCOE.



THE enlargement of our journal, and the kind invitation to all members, to take hold, should certainly have the effect of bringing out a good deal of practical experience, and it may be discussion; which in their turn should furnish material for the meetings of the Association. It seems to me that some of the things I want to know about are :

- 1st. Pruning.
- 2nd. Fertilizers ; quantity, kind and results.
- 3rd. Varieties grown, and results.
- 4th. Novelties tried, and have they proved to be improvements.

Time, which is more important than the mere price, is often lost with these for the want of a little information from those who know.

With your permission, I will give a few notes out of my experience with some of the different varieties of gooseberries :

Downing stands first, all things considered, it averaged three quarts per bush, every year, for four years.

Smith's Improved, I have dug up. Fruit fine, but no yield in four years' trial. [It yields abundantly at "Maplehurst."—ED.]

Industry, ditto. I have tried boards, laid tightly underneath, for mildew, but the result was failure.

In new varieties,

Autocrat gave a large crop, of very large fruit, less mildew than any other variety.

Pearl, apparently no larger than *Downing* and nowhere in crop, but I still hope for better things in future.

All these were heavily dressed with stable manure and ashes. With me, the tips of the new growth, on even *Downing*, are affected with mildew, at this season of the year. *Autocrat* seems to be exempt from this.

Trimming, with me, consists in cleaning out underneath, and thinning out head ; not too thin, or fruit scalds. No cutting back ; any stem that is cut at all is cut clean out.

Nantye, Aug. 17, 1892.

STANLEY SPILLET.

TILE DRAINING AN ORCHARD.—To drain an orchard, the soil of which is hard pan with a foot of muck on top, the drains should be not more than 50 feet apart and, if the land is very wet and cold, two rods to 40 feet would be better. Run them parallel and lay them 3 to 3½ feet deep. Round tile are best and, if they have to run only 200 or 300 feet, 2 inch tile will do, if they are to carry nothing but rain and surface water. If the land is quite wet, an occasional line of a larger size of tile should be put in from the most springy parts of the field.—Farm and Home.

THE RASPBERRY GALL FLY—(DASTROPIUS TURGIDUS).



ASSET gives a brief description of this gall fly and its producer in the *Canadian Entomologist*, Vol. 2, p. 100. His specimens were collected in the State of Connecticut, and, although found in Ontario from Essex to Ottawa, very few notices of it have been published in Canada.

This gall has been more or less common on the stems of the wild raspberry, *Rubus Strigosus*, and on the cultivated varieties in the County of York during the last thirty years; and during this period it has occasionally increased so as to do noticeable injury to raspberry gardens. In one instance, near Toronto, the gardener took the galls to be knots, and when trimming cut them out and threw them into a fence corner. Of course, this did no good, and it was not until he was advised to burn them that he was able to rid his garden of the pest. The producers, as is the case with many gall producers, increase with astonishing rapidity, and were it not for the opportune—though gruesome—services of three species of parasites, raspberry culture in Ontario would soon come to an end.

But, as it is according to the order of nature that plant-eating insects are held in check by parasitic species, we generally find this check sufficient; unless natural relations are disarranged, usually by artificial means, such as the clearing of forests, the draining and cultivation of land, the introduction of foreign plants, and in various other ways. And so it is when conditions are unfavorable to the due increase of parasitic species, the leaf-eating species increase, and farm and garden crops are devoured, unless by some artificial means the balance of parasitic to phytophagous species is re-established.

It has been estimated that in the Province of Ontario there is an annual loss of over \$500,000 from the attacks of plant-eating insects, and many think that our mildly paternal Government might do a good deal more in preventing this controllable waste; for, indeed, to an intelligent and thinking community, as fruit growers and farmers, it is a very culpable waste.

And it should be considered an important duty by all who are engaged in garden or farm culture, to be able to recognize plant-eating and parasitic species at sight, and to keep a strict watch over them, carefully noting their respective increase or decrease. All this is very easy, especially to school boys and school girls, who should be carefully instructed not to destroy nor injure beneficial insects; for, indeed, the protection of these is of greater importance than the protection of insectivorous birds. To carry out these suggestions in the case of the raspberry gall, is especially easy. In the first place, the gall is usually large and easily seen—often over two inches long and three-quarters of an inch in diameter—covered with short prickles and of the same color as the bark of the cane. They may be readily recognized from Fig. 71.



FIG. 71.
RASPBERRY GALL.

Although the galls are full-grown towards the end of June, they should not be gathered until the following spring. When collected, the galls should be placed in a glass jar—a candy jar having a mouth about $1\frac{1}{2}$ inches wide will do very well—and the mouth should be loosely stopped with a plug of cotton batting. The producers begin to come out about the middle of May, and may be seen walking on the side of the jar next the light. They are “short and chunky.” The head and thorax are black and the abdomen is reddish-brown, flattened laterally and rounded. They may be readily recognized from Fig. 72.

They are easily transferred from the large jar to a small bottle, say, a 4 or 6 oz., wide mouth, by placing the mouths together and laying them horizontally, with the small bottle towards the light, and, as insects always move towards light, they will soon pass from the large jar to the small bottle, when, if they be all producers, a few drops of chloroform will soon finish them; but, if there be any parasites among them, they should not be chloroformed, but all allowed to escape on a window which is open above, when the producers can be killed as they crawl over the glass, and the parasites will escape at the open space above.

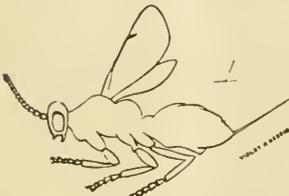


FIG. 73.
PARASITE OF THE GALL FLY.

Usually the most numerous parasite is a *Torymus*, of a coppery, brown-greenish color, with a long ovipositor—“a tail”—which is slightly turned upwards, and they walk about with a staid and majestic step. Fig. 73 is a very good outline. Of course, none of these should be killed.

The next most numerous parasite is an *Ichneumon*. The head and thorax are black, the abdomen reddish-blackish towards the end. They run about with a quick, nervous, weasel-like gait. They may be readily recognized from Fig. 74. None of these should be killed.

The next in order is an *Ormyrus*; of a uniform black color, the thorax punctured and rough, the abdomen smooth, shining and pointed. Fig. 75. Of course, they should not be killed.

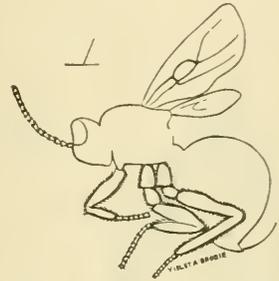


FIG. 72.—THE GALL PRODUCER
(*Diastrophus Turgidus*).



FIG. 74.—ICHNEUMON FLY.
Parasite of the Gall Fly.

Such is a brief outline of a plan which I have practised for many years, and know it to be easily worked, cheap, and very efficacious.

Simply stated, it is to destroy injurious insects only in such a way as not to destroy nor injure their natural insect parasites, and to preserve parasitic species in every possible way.

Toronto, Ont.

WM. BRODIE.

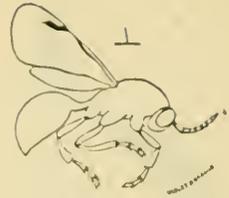


FIG. 75.

A SPECIES OF ORMYRUS

THE PITHY GALL OF THE BLACKBERRY.

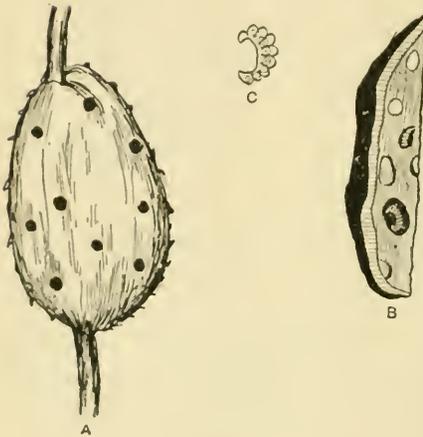


FIG. 76.

In connection with Dr. Brodie's valuable article regarding the raspberry gall-fly, it may be interesting to call attention to another species of the same genus, *Diastrophus nebulosus*, which sometimes causes a curious gall on the blackberry canes, such as is shown in Fig. 76. If cut open transversely, it will be found to contain a number of oblong cells, about one-eighth of an inch long, each containing a single larva. The latter remains in this state till toward spring, when it pupates, and the perfect insect appears. The fly is described by Prof. Saunders as about $1\frac{1}{2}$ of an inch long, black, with transparent wings, and red feet and antennæ. Parasitic insects also prey on this as well as on the raspberry gall-fly.

THE SOUVENIR DE CONGRES is a beautiful pear, and "takes" with the market, but the quality, according to a writer in the *Rural New Yorker*, is "so miserable that it ought to have some distinguishing mark, warning uninformed people against it." This pear is among the varieties recently being shipped to London, England, from California.

FOR STREET SHADE TREES, the same writer condemns the soft maple as being very brittle, and easily broken down by ice storms or heavy winds. The elm, hard maple, tulip and white ash are considered more desirable. In our opinion the elm is the finest of all.

EVERY FARMER'S NAME UPON HIS FRONT GATE.

The tree is known by the fruit it bears,
The lord or peasant by the garb he wears.



AND so the principle obtains throughout the whole economy of human life and existence. The Jews of old looked for a sign, and so has the world ever since. In trade and commerce much depends upon the sign; hence we find tradesmen vying one with another in the striking and attractive features of the trade-mark or inscription that indicates or suggests the kind of business in which they are engaged. But with the tradesman the trade-mark or sign is not enough. He always has associated with it, in very conspicuous letters, his own name. John Smith may keep a place of business, and carry on a trade in drugs, dry goods, or what not, and he lets the public know this by a trade-mark, or sign, and a display of his wares. But he wants the public to know that John Smith is the man who keeps and sells these wares, so he places his name over his front door, or somewhere conspicuously upon his premises. In what sense does John Smith, the tradesman, differ from John Smith, the farmer, in their relations to the public? Both alike have to depend respectively on the public for the consumption of the commodities they produce or deal in. Why should not John Smith, the farmer, have his name upon his front gate as well as his namesake, the tradesman, his name upon, or over his front door?

A few years ago a bank manager was moved from one to another of the many pretty towns that are to be found scattered throughout this rich and highly-favored province. What could be more natural than that this banker should desire to know something of the country immediately surrounding the commercial centre in which his bank agency was situated? On the first convenient day Mr. Walker (for such we will call him), having secured a span of horses, double carriage and a driver, started out with his family for a pleasure drive—with an eye to business as well—through the adjacent country. Just how frequently the driver was plied, during the trip with the query, "Who lives there?" we will not venture to say. But it is safe to hazard the assertion that the inquiry was never made except when the attractiveness of the home and its environments prompted or awakened an impulse complimentary to the owner of the premises inquired about. On the return journey, a course was taken along one of the leading concession lines of the township of Woodhouse, when the question came for the twentieth time, "Who lives there?" This time the query was not left for the driver to answer, for on approaching the road gate there, upon the upper frame, was the name in bold letters, J. H. Smith. Could Mr. Smith have heard the remarks that the new idea called forth from the occupants of the passing carriage he would have felt amply paid for the cost and trouble of

his new and commendable departure. But his hour of triumph was yet to come. Passing by Mr. Smith's farm, and on the opposite side of the road was the home of Mr. W. Johnston. Mr. Johnston's farm of many broad acres of waving grain and pasture lands, would have been passed by in silence, except for the marked contrast between the adjacent places, in their home surroundings.

On the following Saturday afternoon the bank manager was upon the street in company with one of the old and prominent citizens. Coming to one of the busiest thoroughfares his companion accosted a number of very respectably dressed farmers, and turning to the bank manager he said, "Mr. Walker, Mr. J. H. Smith, one of our farmers from Woodhouse township." "Pleased to meet you, Mr. Smith! By the way, I drove past your farm a few days ago and noticed your name over the gate. It struck me as a capital idea, and my wife and family remarked at the time that Mr. Smith had no reason to be ashamed to have the public know that he lived there, and owned and worked that place. You have a magnificent farm there, Mr. Smith, and my wife and daughters were delighted with the attractiveness of your surroundings and the tempting fruit that hung upon the trees. Maybe I could get a few barrels of those apples from you in the fall, and my wife thought she would like to get an occasional crock of butter, or anything that you have to dispose of from the dairy, orchard and poultry yard."

While these remarks were passing, the banker's companion was waiting an opportunity to extend the introductions. The opportunity coming he proceeded: "Mr. Walker, Mr. W. Johnston, a neighbor of Mr. Smith's." "Pleased to meet you, Mr. Johnston; I think I remember passing your place when out the other day."

"Likely you do," responded Mr. Johnston, in a somewhat subdued tone. How different the emotions that animated the two neighboring farmers! Mr. Johnston had heard all the complimentary remarks that had been applied to his neighbor's home and farm, and he never before had the contrast between the two places, equal in quality and soil, and every other natural feature, brought home to him so practically. Then in his own mind he contrasted his own tree, less surroundings and uncut grass, with his neighbor's neatly-trimmed shrubbery and closely mown lawn, he inwardly felt it to his advantage that his name was not on his front gate; and inwardly felt at the same time that it was his naked and unkept surroundings; his neglected orchard and fruit-garden, and his slovenly methods of farming generally, in contrast with his neighbor's, that provoked the inquiry in his case, "Who lives there?"

(To be continued.)

CABLE FROM WOODALL & CO.

6.10 P.M., LIVERPOOL, SEPT. 26, 1892.

At to-day's sale market continued active at following quotations: Red Varieties 14/ to 17/3; Green Varieties 10/ to 13/ Estimated shipments for this week not yet reported.

"O. & L."

NOTES FROM A STRAWBERRY EXPERIMENT STATION, WITHOUT GOVERNMENT SUPPORT.



AS I test more new varieties each year than any other strawberry grower in Canada, not excepting the Experiment Stations, I think I may claim the above credit. In noticing varieties, I shall not mention the old well-known standard varieties, but some of recent introduction, that have done well here, in matted rows, with ordinary care. My soil is clay loam.

WELL-TESTED VARIETIES :

Woolverton—This has been well-tested in the United States. It was introduced there by Mr. Crawford. The Woolverton and Saunders are better known there than in Canada, and are well spoken of by all who have tested them. I would refer all, who might doubt the praise given the Woolverton, in this notice, to the editor of the CANADIAN HORTICULTURIST, who saw them in fruit.

My object in testing so many varieties, has been to get profitable and improved varieties, to grow for market, and help those who grow and love the strawberry, to the same desirable end.

Saunders—Dark scarlet ; large ; good quality ; productive ; late ; profitable for market.

Bederwood—I cannot pass this and Bessie by ; they are not of the large class, but are so productive ; good size, good color ; early ; profitable for market.

Princess—I have fruited this once. I believe it to be a valuable kind, large plant ; large berries, and productive.

Lovett's Early—(It is not early). It is medium in season ; good in plant and fruit at any rate. Those who grow berries for market, will do well to plant it.

Parker Earle—Large, quality good ; late ; some speak well of it. It has not done well here, this season ; I will give it another trial.

Gillespie and *Auburn*—I have fruited these once ; these are from the same originator, and are up to the standard claimed for them. The seedlings from the Haverland and Sharpless are superior to it.

Barton's Eclipse—Dark scarlet ; quality good ; productive ; plant hardy and vigorous ; good for family garden, or market.

Martha—Dark red ; large ; productive ; a promising market berry.

Middlefield—Berries large ; suitable for a market that appreciate large berries. Bright glossy red ; fairly productive ; plant healthy and vigorous.

The following are of

THIS SEASON'S INTRODUCTION :

Philip Seedling No. 1—Notes taken at Geneva (N. Y.) Experiment Station. Stems unable to hold up the enormous fruits, which are produced in large quantities. Berries showy, scarlet, firm, good flavor.

Beverly—The color is dark and rich ; large size. All reports are favorable so far, and the variety is one of great promise.

Muskingum—This has succeeded well everywhere ; with an ordinary chance it bears a heavy crop of large, fine looking berries.

Dayton, Iowa Beauty, Beebe, Jefferson, Clark's No. 14, and one or two more will be reported on in due time, if spared.

JOHN LITTLE.

Granton, Aug. 15, 1892.

THE STRAWBERRY.



R. WM. SAUNDERS, Superintendent of the Gardens and Grounds of the Agricultural Department at Washington, submitted, with some other papers on horticultural subjects, the following to the Secretary of Agriculture :

The principal points involved in the successful culture of the strawberry are :

1. Prepare the ground by deep plowing and subsoiling ; apply a dressing of rotted manure, equal to twenty cords per acre ; spread it over the surface, and mix it with the soil by repeated disintegration with a harrow. The best crops are produced on strong, loamy soils ; if somewhat clayey it will be all the better, provided it is drained.
2. Allow the plants plenty of space ; the rows thirty inches apart and the plants about half that distance between each other in the rows.
3. Remove all runners as they appear, and keep the surface pulverized and clean. If young plants are wanted, keep a portion of the plantation for that purpose.
4. Cover the plants in winter in all localities where the thermometer may run down to 10 degrees Fahrenheit ; this to be done after the first frost, using straw, leaves or other similar material as a partial protection.
5. Do not disturb the roots by any process of cultivation from the month of September until after crop has been gathered the following summer.
6. Destroy the plantation after it has produced its second crop, new ones being planted to succeed those that are abandoned.

❖ New and Little Known Fruits ❖

EARLY FAVORITE.

SIR,—I send you a sample of a chance seedling of the Damson plum, which I have named the Early Favorite. It was in good condition for using on the 25th of August, which is very early for this section. This is the first year of bearing. The tree is a rapid grower; strong, straight limbs, with small leaves.

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

The samples are small, roundish, about an inch in diameter; skin, dark purple, covered with thick blue bloom; flesh, melting, juicy, not very tart; free stone. Ripens last of August, in advance of the ordinary Damson.

PLUMS FOR NAME.

SIR,—I send you by parcel post three samples of plums grown in my father's garden (Thos. Wilson, one of your subscribers). Could you give me the names in your next issue? No. 1 we consider our best plum; two trees gave us twenty pounds this week. The trees have been growing here for twelve years, and were purchased as Green Gage. No. 2 is not quite ripe. It will, I think, give us twenty pounds. No. 3 is, I think, the Yellow Egg, and three trees will have about forty pounds. No. 2 and 3 were brought from Lachine twenty years ago.

A. E. WILSON, *Clarence, Ont.*

No. 3 is, as you suppose, the Yellow egg. On consultation with our neighbor, Mr. G. W. Cline, we conclude that No. 1. is Bingham, and No. 2. Denison's Superb.

FOREIGN PEARS.

SIR,—Some time ago I wrote you I had imported some French pear, apple and plum trees. Some of them are now bearing, and I send you three varieties of pears, viz., (1) Marguerite Marillat; (2) Chaumontal; (3) Triumph de Vienne. My garden of three-quarters of an acre is half a mile from my house, so that I lose much of my fruit. A year ago I imported Laxton's Noble strawberry. It is a grand fruit; four, picked at one time, weighed one-quarter of a pound. The flower is perfect, the plant is very productive, and the fruit of good flavor.

J. D. ROBERTS, *Cobourg.*

It is certainly astonishing what interest may become centered in a small garden. Our former President, Rev. R. Burnet, became an authority on pear nomenclature, by the great number of varieties he grew on dwarf trees in his garden. Mr. Roberts once sent us a fine collection of foreign varieties of apples grown in his small garden. The results of his experiments will be interesting to our Association. No. 1 above named is a beautiful pear, not mature enough to pass judgment on its quality; No. 2 lacks in quality, and is not juicy enough. No. 3 has already been noticed in these pages.



The Garden and Lawn.

PREPARATION FOR PLANTING FALL BULBS.



WHAT more desirable ornament can be suggested for the border of a well-dressed lawn, than a few beds of spring flowering bulbs? They are so delightful to the eye in early spring, after gazing so long at the monotonous white snow and defoliated trees. The month of October is the very time for planting hardy bulbs, and, if they have not been already ordered, no time should be lost in securing them. The mere mention of tulips, hyacinths, crocuses, narcissi and snowdrops is surely enough to enthuse the flower lover with ardor in the preparation of the ground and the selection of varieties for planting.

The soil should be well drained, and before planting, spaded deeply and well enriched with old cow manure. Then plant each kind of bulb by itself, and, if contrast of color is needed, it can be secured by using different varieties of the same kind. The following cut, which has already appeared in this journal, well shows the proper depth for planting the various bulbs. Crocuses and snowdrops should be planted two or three inches apart, tulips five inches and hyacinths seven.

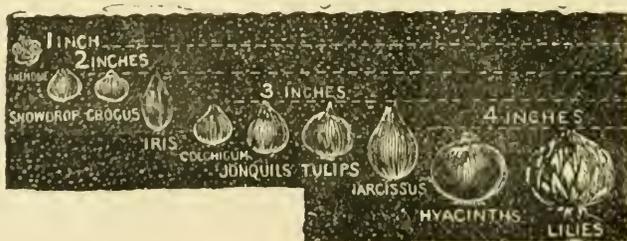


FIG. 77.—SCALE OF DEPTH FOR BULB PLANTING.

Mr. E. E. Rexford, a well-known American florist, writing about tulips in the *American Agriculturist*, says: "Among the tulips can be had scarlets and yellows, and other light colors in sufficient variety to afford charming and strong contrast. In the hyacinths; reds, whites and blues, afford ample chance for contrast. But do not plant double and single varieties promiscuously, because they happen to be of the color desired. Better keep each kind by itself. The same will apply to tulips, which show better in masses."

THE TULIP.



Of all the bulbs for spring flowering there is none more charming than the well-arranged bed of tulips of contrasting colors. There are now hundreds of varieties which can be purchased for very little money—quite a different state of affairs from that which existed some years ago, when there was a wide-spread tulip mania and the prices rose so high that none but the rich could afford to purchase bulbs. The following account of that mania is given by Lindley & Moore: “In the middle of the seventeenth century, tulips became a large trade, such as is not to be met with again in the history of commerce, and by which their prices rose above that of the most precious metals. It is a mistake, however, to suppose,

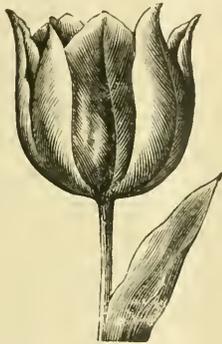


FIG. 78.
SINGLE TULIP.

that the high prices paid for bulbs, amounting in some instances, to 2500 and 4600 florins, represented the estimated value of the root, since these large sums often changed hands without any transfer of property. Bulbs were sold, often without being seen. In fact, they were the subject of a speculation not unlike that of railway scrip in this country, at no very distant date. Tulips should be planted in the month of Octo-

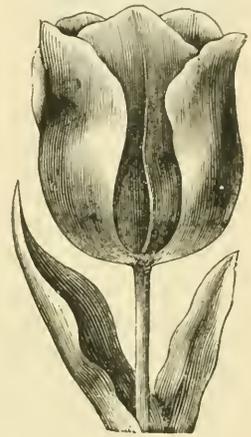


FIG. 79.
DUC VAN THOL TULIP.

ber, about three or four inches deep and about six inches apart. In buying, it would be wise to select varieties which will afford a succession of bloom and those which flower at the same time, should be planted together. Single and double tulips are both desirable, but, of the two, the single is preferred as most beautiful. Fig. 78. One of the best early, single varieties is Duc VanThol, (Fig. 79.) which may be had in a variety of colors, and has a neat dwarf



FIG. 80.—PARROT TULIP.

habit of growth. Of double varieties which succeed, VanThol, La Candeur, White and Yellow Rose are varieties highly recommended by Mr. Rexford. The Parrot tulips (Fig. 80) are very effective if planted in groups with shrubbery, or along the border of walks. The flowers are large, brilliantly colored and often they are fringed or twisted in an interesting manner.

A TWO-ACRE CEMETERY.

SIR,—A number of us here—including all the subscribers of the CANADIAN HORTICULTURIST in the village—purpose making a new burying ground of, say two acres. We wish to lay it out in an orderly and ornamental manner, before it is occupied. Please give us a rough sketch, and oblige,
 GEO. S. WASON, *Hawkesbury, Ont.*

Reply by Mr. D. Nichol, Superintendent Cataragui Cemetery, Kingston, Ont.



ACCORDING to request, I send you a design for laying out, on the garden and lawn plan, a cemetery, on a square two-acre lot, such as is required at Hawkesbury, Ontario. In regard to future management of a cemetery, be it small or large, I would here take the liberty of offering some suggestions, which from experience and observation I have been led to consider of great importance.

In the first place, an imperative rule should be established, that railings, copings, hedges, and fences of any kind, around cemetery lots be strictly prohibited. They are not only utterly useless, but they seriously detract from the natural beauty of the landscape. They render the tidy keeping of the ground almost impossible, and as they become dilapidated with age they are offensive to refined taste. It is a traditional notion which originated many hundreds of years ago, when church-yards, improperly fenced, were the only burial grounds. In the modern cemetery, the boundaries of lots should be marked by small corner posts, sunk in the ground so that the tops are level with the sod, in order that the lawn-mower may be worked without hindrance.

Any one who has been accustomed to see only old style cemeteries, with lots fenced like sheep-pens in a show yard, will take the trouble to see an improved cemetery, where all enclosures have been abolished, will readily become convinced of the folly of expending millions of dollars on useless railings.

Secondly. The height of headstones should be limited to two feet, or less. Few old style, tall, slab headstones are erected anywhere now, because of the difficulty of keeping them erect, their liability to be broken when leaning over, the certainty of their becoming moss-covered, and their altogether unpleasing appearance. In a cemetery which is to be beautified they should be strictly prohibited. A chaste monument, with space for several inscriptions, erected on a good foundation in the centre of the family lot, answers a better purpose than a number of headstones, and may be cheaper. Only one monument should be erected in a family lot. The initials should be cut on the top of all footstones, which should be level with the surface of the ground, permitting the lawn mower to pass over them.

Thirdly. Such a thing as a raised lot, or terrace, must never be permitted, because it mars the beauty of surrounding lots, which are kept even with the

natural slope of the ground. The desire on the part of some lot-owners, entirely devoid of taste for landscape gardening, to have their lots raised to a dead level without regard to surroundings, is one of the greatest difficulties which cemetery managers have to contend against. Hence it is actually necessary that a rule be established prohibiting the raising of any lots more than four inches above the standard grade of the ground.

Fourthly. There can be but few well-kept gravel walks in a cemetery. They should be made only where there is likely to be so much travel that turf would be worn out. There is nothing so pleasant to walk upon as closely mowed turf; there is no walk more beautiful than one of nature's green carpet, therefore, the gravelling of paths or aisles between or around lots should not be allowed. Badly-kept gravel walks are nearly as objectionable as rusty railings.

Fifthly. Many lot-holders make a practice of planting flowers on and about the graves of their deceased relatives. The sentiment is praiseworthy, and should be encouraged to some extent, but it is quite possible to have too much of a good thing. Some kinds of flowers are short lived, and their dying foliage gives a shabby appearance. I have often seen cemetery lots turned into flower gardens, which did not look nearly so well as other lots kept in neatly cut grass, with only a small bed of flowering plants at the foot of the graves. A monthly journal, entitled *The Modern Cemetery*, is published by R. I. Haight, 243 State Street, Chicago. Everyone interested in the management of cemeteries should read it; costs only one dollar a year. Publication commenced March, 1891. I would recommend getting it from the beginning if it can be got.

ASHES FOR ROSE INSECTS.—In *La Nature* the statement is made that if wood ashes are sifted when dry over the heads of rose bushes, after they have been syringed with water, the ashes will adhere to the leaves, and, on account of their alkaline nature, will soon make it very uncomfortable for any insect pest that may infest them. The ashes in moderate quantities will not injure the plants, but, on the other hand, will be rather beneficial as a fertilizer when washed off into the soil.

LARGE, LUSCIOUS AND HANDSOME.—Pears should be picked before they are ripe enough to eat and stored in a cool, dry place. They have better flavor and longer keeping qualities if ripened off of the tree. They will do to pick to ship as soon as the seeds are dark brown or when the stem parts easily from the twig. If they are wanted for family use only, they had better be left a few days longer. The last few days on the tree is when they grow the fastest. Always pick pears, and all fruit in fact, by hand. Place carefully in shallow baskets or ventilated boxes and store away where the air can have free circulation around them. They will keep longest in a cold, dry, dark place.

A MECHANIC'S GREENHOUSE.



BEING a mechanic with a very moderate income, but desiring more flowers than my slender means would allow me to buy, I determined to build a small greenhouse, believing that I could grow not only my own flowers but enough more to help pay for the expense of building such a house. The house is a three-quarter span, 24 feet long and 11 feet wide, extending east and west. It has a shed on the west end. The south wall is 4 feet high; the north wall 6 feet. The roof is made of sashes, the long span 7 feet, the short span $4\frac{1}{2}$ feet. I used 10-inch glass, and there are three rows of glass in the sashes, as I found that wider sash, 7 feet long, would be too heavy to handle. I am a renter, and the greenhouse must necessarily be a movable one. The house is heated with a common brick

furnace, built under the west end of the south bench, with the door opening in the shed. Five or six feet of the flue, next the furnace, is made of brick; the remainder is made of 6-inch sewer pipe. The upward turn of the flue, at the eastern end of the greenhouse, is made with a T pipe (see A in illustration). By means of a swab thrust in at B, I can soon clean the flue. The south bench is built 2 inches back from the wall to allow the warm air to strike the glass at

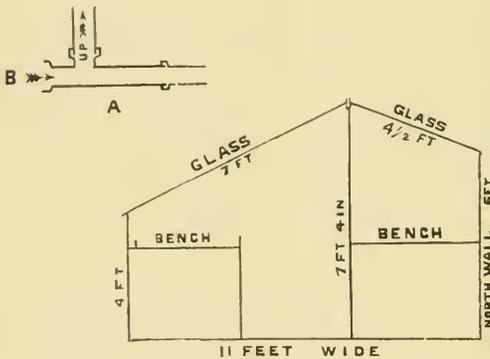


FIG. 51.—A MECHANIC'S GREENHOUSE.

the lowest point and thus keep the frost off all the way down. I built most of the house myself, and do not think it cost more than \$25 or \$30. A bushel of coal will heat this house for 24 hours.

I can grow many kinds of plants, and every year I sell more than enough to pay for all the expense of running the house. On very warm days, while I am away at work, my wife ventilates the building. I try to do all the watering before I go to work, or after I come home. The work required to keep the house in order is but a pleasant way of spending some of my leisure moments, and the little greenhouse gives much pleasure to my family and friends.—A Mechanic in American Gardening.

❖ The Kitchen Garden. ❖

THE COTTAGE GARDEN.



IT is a pleasure, but, unfortunately, a very rare one, to see your vegetables or fruits as fine and large, and of such beautiful glowing colors as many of the spring catalogues depicted. Experience has taught us, or will sooner or later, that many of these novelties are gotten up for the occasion, and to induce the unwary to spend money foolishly. Henry Ward Beecher used to say that he took as much pleasure conning the pages of a spring catalogue, as he would in those of a work of fiction ; and most enthusiasts in gardening will agree with him, for when these visitors come along during the snows of January or February, the old fever comes on us, and we find ourselves wondering again, if it is possible for anything to be so beautiful, and we invest once more in another novelty, very often to find that the catalogue is “vanity and vexation of spirit.” But it is a real solid pleasure, when you look over your garden, to call to mind the many good things you have enjoyed in the shape of peas, beans, tomatoes, etc., not forgetting that best of all small fruits, the strawberry, and other things too numerous to mention. It thus serves a double purpose, reducing the butcher’s bill, and also giving fitting nutriment to the body during the hot months of summer. You will also call to mind the surplus of good things you have in the cellar, in the way of preserved fruits and vegetables of different kinds, and last, but not least, is the pleasure you experience in knowing that (provided you are a good gardener) your garden is clean ; that there are no weeds gone to seed, to commence their work as soon as the warm days of spring come. And then there is a satisfaction in having made a deposit in the bank, in the shape of a goodly pile of well-rotted manure in the corner of your garden.

Some of the duties are included in the pleasures, for instance : It is your duty to acquire this same pile of *old* manure, because many weed seeds are killed during the process of fermentation and decomposition, thus saving labor during the following season. In any case enough weeds will spring up to keep you busy, and it is a wise provision of nature, for, if we had no weeds we should not cultivate so much, and cultivation is necessary for growth, and also for the admission of the life-giving sun and air.

There are two classes of weeds against which I would particularly warn the amateur, and they both spring up late in the summer ; I refer to purslane and

chickweed. It is almost impossible to get entirely rid of either. Purslane is very tenacious of life, for, if you pull it up and shake the earth from the roots, you shake the seed out, as it sheds its seed freely while still green, while the plant will take root again at the first shower of rain, in fact, there is no resource but carrying it out of the garden altogether. One writer has said, that if you hoe it up when but an inch high, you will get rid of it. That is not my experience, and I have tried many ways, finger and thumb weeding, and I find that putting it where it can do no more mischief is the most effective.

Chickweed is another insidious weed, for you will have a thick carpet of it almost before you know it is there, especially if the season be at all wet. Its seed also will shake out very easily; the only resource is, watch for it, hoe in time, and do not let it seed at all; if you do, you will repent when too late.

Another duty is, to clean all tools not in use, grease them, and put them away for the winter. If you wish to take time by the forelock, lay out your plans for the following season, and try if you can grow some specimens of fine and beautiful fruit for the Ontario exhibit at the World's Fair, Chicago. It will be a credit to you and to your country, and will let the world see that this is not the land of snow and ice, so many suppose it to be.

In conclusion, I will give a few rules which a cottage gardener would do well to learn off by heart, as they would be both money and pleasure to him.

1. Do not let any weeds go to seed.
2. If there are any seeded, burn them.
3. Rake up all rubbish, and what is not fit for the compost heap, burn.
4. Dig old manure as soon as the leaves fall.
5. Prune grape vines when the leaves have fallen, and cover them with soil six inches deep later on.
6. Lay down raspberry canes, especially in exposed places.
7. Mulch strawberries with meadow hay, leaves, wheat straw, or straw manure, and cover the plants lightly when the ground begins to freeze.
8. Clean all garden tools, and wipe over with an old cloth or piece of cotton-waste, well soaked with coal oil.

Having complied with the above rules you may take a rest till those delusive visitors, the spring catalogues, begin to wake you up in the new year.

Cornwall, Ont.

W. S. TURNER.

THE NATIVE HORNBEAN.—Our native carpinus, or hornbean, is one of the most ornamental of our small trees. Its clean, birch-like foliage in summer, its furrowed bark in winter, and its trim appearance at all times, bespeak for it more general use. In spring, its catkins push suddenly forward before the leaves, covering the tree with a mist of soft green that is a special feature of the landscape on the borders of swamps and streams.—Garden and Forest.

HOW TO WINTER CABBAGE

When cabbage are wanted in the spring only, they may be taken up, roots and all and laid on the ground, roots up, as close together as they will lie, the cabbage part just covered with soil. Where they are wanted for market or use

during winter, a very good way is shown in the illustration, and is described in the *Rural New Yorker*, as follows :

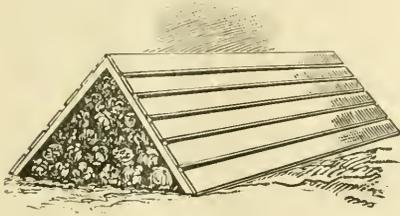


FIG. 82.—DEVICE FOR WINTERING CABBAGE

shown. Frames of 2x4-inch scantling are made and placed upright in the pit. For a pit 15 feet long, three of these are needed. Fence-boards are nailed to these frames, thus forming a complete crate. This is covered lightly with straw, and then with about four inches of dirt. The ends are stuffed with straw, which can be removed whenever cabbage-heads are desired.

CELLAR FOR STORING ROOTS.—Fourteen hundred bushels of roots will require between 2150 and 2200 cubic feet of storage-room. The main object in storing roots is to keep them at a uniform temperature as little above the freezing point as practicable. One of the best ways to do this is simply to pile them in long narrow piles on well-drained ground, convenient to the place where they are to be fed. An excavation about a foot deep should be made and a layer of clean straw placed beneath the roots. When the pile of roots has been made it should be covered thickly with straw and then with a foot of earth. At distances of six or eight feet along the apex of the pile, a drain-tile should be inserted to give ventilation. For a permanent cellar, in many cases, the most convenient arrangement is simply to partition off a corner of the barn basement by setting up 10 or 12-inch studs, boarding on both sides and stuffing the interstices with chaff or cut straw. Often a very convenient root cellar may be made in a gravelly or sandy bank adjoining the barn cellar. This arrangement is especially convenient where the root-cellar can be so built that it can be filled from the driveway in the second floor of the barn. Where a cellar is built in this way, grout walls, cemented on the inside, should be used, both as a protection from cold and against rats. The relative advantages and cost of these various ways of storing roots will, of course, depend entirely upon individual circumstances and surroundings.—Am. Gardening.

HOW TO PACK APPLES.

Messrs. Pancoast & North, commission merchants of Philadelphia, speak favorably concerning the prospect for the sale of apples this fall. As soon as the markets are clear of peaches and pears, and stock of firmer quality comes forward, high prices are expected. Even now desirable apples, carefully packed, range from \$2.50 to \$3.25 per barrel for such varieties as Duchess of Oldenburg, Alexander, Gravenstein, Maiden's Blush, 20 Oz., Black Detroit and King. They also give the following suggestions and directions for packing apples, which, just at this season, will be of especial interest to our readers :

Two barrels of apples of the first grade sell quicker and for more money than a three barrel mixture of these two barrels with another barrel of the second grade. It pays better to market only the finest fruit in the best possible shape.

Apples for marketing should be picked from the tree by hand and handled gently ; all that fall should be discarded, even if they do not show any bruise at the time. Discard everything speckled, or in any way faulty or imperfect. Pack in the best new barrels ; don't use poor barrels. Marketable apples will bring higher prices enough in neat, first-class barrels to more than pay the difference in cost. See that the barrels are made of well-seasoned wood, both heads and staves, so that they will not warp and the heads come out in transportation.

Remove one head of the barrel ; select uniform, fair average apples (not the largest) and hand pack them, stem down around the edge of the barrel ; then another row inside the first, and so on until the head is nicely covered close and tight, so they will not shift ; then put in about a half bushel more and shake the barrel carefully, so as not to disturb the facing, then add another half bushel and shake as before, and so on until the barrel is filled. It is important to shake the barrel five or six times while being filled to settle the apples into the closest space, to prevent further settling in shipment. Let the apples come up to the top of the chime, lay the head on, lean over the barrel, bear your weight on the head and shake until every apple is fixed into a shiftless place ; then use the press to gently crowd the head down to its place, and nail securely.

Turn the barrel over and mark the kind of apples, the growers name and initials, and brand Extra, Choice, Prime or Xs, to suit the grade.

GOOSEBERRIES —The great drawback to the successful raising of gooseberries in this country is mildew. It is quite possible, however, to furnish conditions under which the plant may flourish equally as well as in more favorable localities. For instance, we know that the gooseberry delights in a moist, rich and cool soil, which we are able to furnish by deep plowing, heavy manuring, and mulching the soil thoroughly. To afford protection from the sun, partial shade and a northern location may be chosen ; the northern side of a barn or other building, or even of a board fence, is a great advantage in location. The center of the bush may be kept open by careful pruning, so that light and air can be admitted freely. Whilst it is not always possible to avoid mildew, especially in seasons when the weather is so favorable to its development, there are many painstaking gardeners who are very successful in growing English varieties which, it is almost impossible to raise, under ordinary circumstances, in this trying climate. The best fertilizing material that we have yet found for the gooseberry, is well-rotted cow manure, applied liberally and well mixed with the soil.—Orchard and Garden.

❖ Forestry. ❖

PLANTING THE ROADSIDE AND ABOUT THE HOME.



AS students and admirers of nature, we are unable to name a single native tree or shrub that is not interesting, and, in some important respects, beautiful and worthy of consideration in making a list for ornamental planting, especially on a large estate. For certain places each kind of tree is "just the thing." With a more extended knowledge of these trees, one is usually much less liable to be hampered by fashion. He will not make the same selections as his neighbors, and will thereby exhibit more originality in his designs.

In most species there is considerable variation in the modes of growth of different individuals. The student of botany and horticulture is learning never to express surprise at finding or hearing of specimens of any species of our trees or shrubs which have a weeping habit. In like manner, time is almost sure to produce dwarf specimens of every plant, and those with variegated or cut leaves, as well as those with white or double flowers. Testimony regarding variations of this sort is all the time coming in from different sources.

For shade trees along the roadside, or in the front yard, in country or city, among our deciduous-leaved trees, the sugar maple (including the black maple) is a general favorite, and the one most extensively planted. It is a fashionable tree, producing a dense, clean top, much the shape of a well-built hay stack. Too many trees of this sort, however beautiful they may be, give a monotonous appearance to a yard or roadside.

The American elm, when well grown, is the queen of the deciduous-leaved trees of northern temperate regions, and is often planted. Our numerous species of oaks are too much neglected as ornamental trees, partially, perhaps, because they often hold their dead leaves during winter.

Among evergreens, for general planting, the white pine, arbor vitæ, hemlock, red cedar, and Norway pine, can scarcely be equalled by any species in temperate climates. Well-grown hemlocks have been considered by competent judges to be the finest evergreens in cultivation, while, in many respects, the white pine cannot be excelled.

It should not be forgotten that a very large proportion of foreign trees and shrubs have not proved hardy, or, after a few years, in some respects fail and become unsightly. In this regard, if we try natives of our own region there is scarcely any risk.

Doubtless, the time will come, when the officers of at least some of our

rural highways will learn that it is next to vandalism to remove the last vestige of every shrub or small tree along the roadside. They often leave a tree here and there, but these are frequently damaged by the trimming. Groups or thickets of native shrubbery, including vines, untouched by ax or bush-hook, are a great source of delight to a well-trained person, as he views them while passing along the road. As a rule, at present, all bushes and shrubs are considered by the average pathmaster as entirely out of place, and not to be tolerated in any well-regulated neighborhood. There never was a greater mistake, and the more we talk about it, the sooner we may look for much-needed reforms. Mr. C. W. Garfield writes in *Garden and Forest* as follows :

“Many of the most attractive highways in the State owe their beauty to the shiftlessness of the pioneers, who allowed a mass of bushes to grow up in the corners of the old worm fences undisturbed for a generation ; afterward to be utilized by more thrifty successors in the embellishment of the roadsides. No plantations formed by man are equal in beauty to these irregular masses of trees that are of Nature’s planting.

“Occasionally I note an example of the workings of some man’s mathematical mind, who has tried to clear out one of these rows, leaving a tree once in so many feet, and thus ruining the effect for all time.” And again, in the same journal we read : “The thorns and dogwoods and viburnums, the thickets of elder and hazel, the bitter-sweet and clematis and moonseed climbing over all—the flora of the world has no more beautiful plants than these and a hundred more which spring up of themselves and flourish until some one with a zeal for ‘trimming up’ attacks them with grubbing-hoe and brush-hook. And when the vines are stripped from the fences, and the brush all cut, gathered and burned, the roadsides are thoroughly cleared, it is true, but a desolation of rocks and ashes is all that is left in exchange for the fragrance of flowers, the beauty and coolness of green leaves, and the melody of the birds among them.

“It is a comfort to note that road borders of native shrubs are being used more and more in the best park work. Every one of these shrubs would grace a palace garden, and yet, when they modestly appear along a rural highway they are mowed down, to ‘improve the appearance’ of the country.”—Flora of Michigan.

THOSE of our readers who may have more or less celery in their gardens that is imperfectly blanched, or not blanched at all, may easily blanch it perfectly after it is taken up. Lift the plants from the ground, leaving a little soil adhering to the roots. Take common barrels, or the cases in which boots are shipped, put about two inches of sand in the bottom, and on this place your celery in an upright position. Pack the barrel, or case, full, of course putting only one layer. Sprinkle the sand before you put the celery in. Then put the barrel or case in a cool cellar, and cover with boards loosely, so that light is kept out, and in six weeks your celery will be blanched to the tips. Look at it occasionally, and if seems too dry and shows signs of wilting, sprinkle it with water. Care must be taken not to wet it too much, as it is apt to produce rust. —Floral Instructor.

❖ The Apiary ❖

THE BEE FOR THE BEGINNER, AND THE METHOD.



ABOVE other considerations the beginner in bee-keeping ought to have a bee which is amiable and docile, so as to be easily handled, without danger of much punishment from stings, else there will likely be premature discouragement, and the enthusiasm so necessary to success, will be nipped in the bud. Another consideration of much importance to the beginner, is to have bees whose queen may be readily distinguished and found among her offspring. To fulfil both essential requisites I know of no bees to surpass, if equal to, the Italians. We have the Carniolans, very amiable, but not so well tested, and the Albinos, less tried among Canadian apiarists; but the character of the Italian for docility and manageability is well established and well-known.

I would, therefore, advise the beginner to commence with the pure Italian; and, as experience and skill increase, try other desirable races, and choose the best for himself, or at any rate that bee which, to his peculiar personality and circumstances, is best for *him*. It is a fact, and not at all strange, that the very best apiarists, after ample experience in testing and handling, differ widely as to which is, for all purposes, the best bee. This is, of course, owing to the different circumstances; and the different make up, mental and physical, of the manipulators themselves; as well as the differences in the bees of the same race.

As to the best method or methods for beginners, circumstances must, to some extent, determine. Having got the best bees the next thing is the hive to put them in, and the hive which to him (the beginner) will be the easiest to manipulate and work to the best purpose (profit). With so many good hives before us, and so many "best" ones, it would be a rather dangerous, as well as presumptuous, business to attempt to name *the* very best. I shall not attempt it; but allow the novice to find out by experience (as I did myself) which is best for *him*.

I shall, however, describe the hive which I now make for myself, and which suits me better than any of the many hives I have tried. It takes eight Langstroth frames crowded closely together for spring brooding and seven for after part of season and winter. The top-bars of frames are about an inch wide and double with bee-space between. The bottoms are both fast and movable to suit taste. There is an inch and a half hole in about the centre of the back end of hive, for ventilation, winter and summer—during the hot weather of the latter, and in the cellar in winter. The hole is of course covered by a button outside and a wire gauge inside; zinc adjustable entrance.

For comb honey I use a super, holding seven brood section frames with ten separators, each frame holding four sections. For extracted honey, I use a second story, same size as brood chamber, with zinc queen excluder between it and brood chamber. Excluder also between section super and brood chamber. This hive can be used with equal facility for comb or extracted honey, or for both; and is the hive I prefer for myself.

The beginner ought to produce only comb honey at first, till experience familiarizes him with the manipulation necessary for extracting. Of course, the invention of the "bee-escape," has materially lessened the work and worry of extracting as well as of taking off the section honey. The "escapes" are in the form of honey boards and are placed between the supers of sections and the brood chambers, or between the extracting story and the brood chambers, when it is wished to remove either; the bees will then, in the course of a few hours, pass through the escape below into the brood chamber. The escape is so constructed that they can pass out but cannot return. It is certainly one of the best and most useful of recent apiarian inventions. With the valuable aid of the "escape," in extracting, the beginner may go into extracted honey, say the second year. Every apiarist worthy the name, ought to produce both comb and extracted honey, instead of either kind exclusively, except under very exceptional circumstances. If his market is local he will find a demand for both, and ought, of course, to be able to supply both. In the out market he will also find a demand for both kinds.

Selby, Ont.

ALLEN PRINGLE.

CURRENTS.—The best currant to grow for home use is the White Grape. Its fruit is sweetest and best for dessert use, its jelly has the best flavor, and it is superior to all others in quality for canning. If a late red berry is wanted, the Victoria is not excelled for northern culture. The Fay is larger but it is more sprawling and delicate in habit and the fruit is poorer in quality. If you want first-class currants in size and quality, set in rows in the open sunshine, cultivate thoroughly, and manure heavily. In pruning, permit the new wood to come on and cut out the wood that is four years old or upward. The Black Naples currant has a value not realized, except by our settlers from England. By scalding the fruit for a few moments in boiling water, and then putting into fresh water for cooking, the peculiar flavor of the skin is removed, and when canned for winter use it is much like the cranberry sauce in flavor and color. In growing the black currant, it must be kept in mind that it is borne on wood of the preceding year's growth, and to secure a succession of new wood it is necessary to cut back the points of growth each fall. The Crandall has no relative value for any use.—Orchard and Garden.

November and December Numbers free to all persons subscribing during the month of October for the year 1893.

AMATEUR BEE-KEEPING.



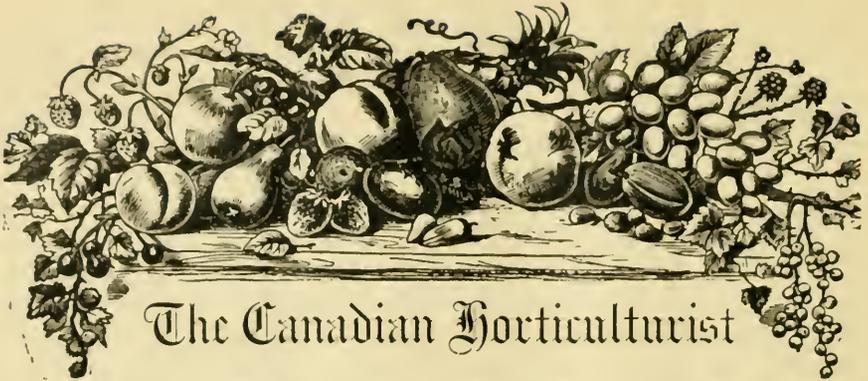
I HAVE selected the above topic as the basis of a few remarks on the honey industry of Ontario. If an amateur be one who takes up and prosecutes the study of his subject, because his tastes lead him in that direction, regardless of the substantial profits he may reap from it, then I fear there are but few true amateurs in bee-keeping. Exaggerated notions of the profits derived from bees, and the erroneous opinions entertained by many, that bees "work for nothing and board themselves," lead more men to engage in bee-keeping than does the desire to cultivate a closer acquaintance with the life and habits of the bee. Still, the interior economy of a bee-hive is so wonderful, the instinctive powers and social habits of the insect so remarkable, that ordinary people become enamoured of the calling, and, in a measure, prosecute it for the pleasure and information it affords. Most practical bee-keepers are more or less amateurs, and like their calling for the pleasure it brings with it, which goes far to compensate them for hopes occasionally deferred, or a stinging resentment of their untimely interference with the domestic concerns of their pets.

A dozen years ago bee-keeping was in its infancy here and but few understood the subject. To-day there are hundreds of people throughout the province who have little to learn of the life history of bees, or of the theory and practice of their management. A dozen years ago honey was considered a luxury and could only be bought in drug stores. To-day it finds a place in every well regulated grocery, and is with many people a daily article of food. A dozen years ago a few hundred pounds of honey was considered a large gathering. To-day there are hundreds of men throughout the country, who annually harvest tons of it. A dozen years ago its price precluded its common use. To-day it may be bought for a little more than the cost of good syrup. Such has been the increase in apicultural knowledge, and what that knowledge has produced in the last decade, that we sometimes wonder what it will result in twenty years hence, for people are constantly joining the ranks of those engaged in the honey industry, whose possibilities can only be known when the necessary force to fully develop it is employed.

R. McKNIGHT,

Owen Sound, Aug. 11th.

THE PRINCE ALBERT is reported from the Geneva Experiment Station as an excellent red currant, with distinct dark green foliage. The fruit stems are extra long, and the fruit is of fair size. The fruit ripens about three weeks later than either Fay's Prolific or Cherry, thus lengthening the season about six weeks, as the berries hang a long time on the bushes before they become unfit for use.



The Canadian Horticulturist

SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

NOTES AND COMMENTS.

SPECIAL ATTENTION is called to the proposed enlargement of this journal for the year 1893, which is set forth by this number. The editor, with the advice of the directors, is anxious to spend every available cent the treasury will permit, to increase the prosperity of Canadian fruit-growers. To accomplish this end the latest and most reliable information on horticulture will be published in this journal. The editor will unite with his own practical experience at Maplehurst, the results of the work of the horticulturists of the various Experiment Stations of Canada and the United States, and the gist of the information contained in the leading horticultural magazines of Europe and the United States. In view of this, we ask all our friends to second our efforts by sending in long lists of new subscribers, or names of persons to whom circulars, concerning our work, may be sent from this office.

Whether we continue the additional eight pages during November and December will depend upon the response in new subscriptions; but the purpose is to continue the enlargement through the year 1893, if properly supported.

FALL WORK.—There is plenty to do at all seasons in the fruit garden. Where it is the intention to enlarge the small fruit plantation, it is well to make a beginning this month, if possible, completing the work in early spring. Raspberries, blackberries and currants begin to grow very early in the spring and are checked in growth by a late removal. Fall planting should be done as early as possible after the fall of the leaf, in order that the plants may become well settled before the very cold weather. Currants are very easily propagated from cuttings, and nurserymen say that those which are set in the fall make much stronger plants than the spring-set ones. They are cut six or seven inches in length and inserted in the soil, with the exception of the top bud, at a distance

of four or five inches apart in the rows. As cold weather approaches it is well to throw up the soil towards the cuttings and when the ground freezes cover the ground with strawy manure, thus preventing heaving of the ground.

OUR APPLE CROP.—From the news received, both through the public press and private correspondence, it would appear that the prospects for the sale of our winter apples this season, are very bright. We have just received a letter from Messrs. James Lindsay & Son, Edinburgh, Scotland, in which they speak as follows:—

“Judging from the appearance all around, we think the season will be a fairly good one for the consumption of American and Canadian fruit of good quality, green fruit, free from scab, and well packed. The European crop is fairly good and large, but the fruit is of very small size, hence such will not interfere with American and Canadian shipments. We hear that the States are about an average crop, so there will not be an excessive supply from that district. These are our reasons for thinking that the outlet is very good for Canadian stock. Your fruit should go forward carefully packed in full sized barrels, all of one weight. When they come in different sizes it is a difficult matter to sell satisfactorily. The kinds that sell best here are Baldwins, Spy, Spitzenburg, Canada Red, Greening, Rox and Golden Russets and Snow.”

Messrs. Otis & Lawrence, Montreal, agents for Woodall & Co., Liverpool, England, write :

“The English market is still in good condition. We think that if the market is seriously affected, it will be because of the poor quality, but, if the quality is all right, quantity need not be feared much. There will, no doubt, be a large quantity of apples sent to England this year, and, to be on the safe side, shippers ought to send only their best and soundest fruit. Montreal will ship about 2,000 barrels to Liverpool this week, and Nova Scotia will ship about 10,000 barrels to London.”

THE COLLECTION OF BOTTLED FRUIT for the World's Fair is making excellent progress. Mr. Pettit and his assistant are giving their whole time to this work, and our directors and others are donating liberal supplies of their finest fruits. Magnificent peaches from Essex and Lincoln, plums from Wentworth and Essex, grapes and apples from every quarter come to the office of the superintendent in succession and need constant vigilance to care for them properly. He has some 1,700 glass jars of all shapes and sizes, many of them very ornamental, and in these the fruit mentioned shows to the very best advantage. They will be stored in a cellar until next spring and then conveyed to Chicago. Too much cannot be said in honor of our President for his able superintendence of the work, but, as the Ontario Fruit Growers' Association are the chief donators and are always ready to further the work in every way, it will be manifestly unfair unless their assistance in the work is duly recognized by our Government.

CURRANT GROWING.—*Orchard and Garden* gives the following as the essential elements for successful currant growing: deep, rich, moist soil; ample top dressing of manure in the fall; mulching applied to the soil about the bushes immediately after the spring rains; regular annual pruning, cutting back old wood about one quarter, trimming out the old and useless wood and keeping the bush open and airy.

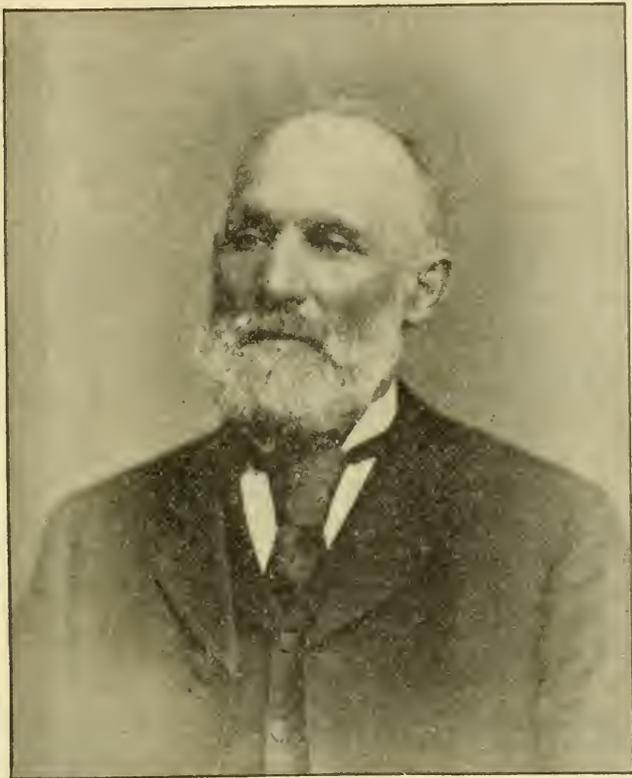
THE FRUIT AT THE INDUSTRIAL was about equal to its usual standard of excellence. There was to be seen at this fair a large number of exhibits of the very finest fruit which our fair province is able to produce ; and the quality this year in this department was exceedingly good, considering the unfavorable season. The pins for supporting the names of prize cards, which were commended in our September number, were used at our suggestion and gave great satisfaction, both to exhibitors and to visitors. Everyone was able to see at a glance the names of the various fruits, as well as the prizes conferred, which is one of the great objects in making a good exhibit.

GROWING BLACK CURRANTS would be profitable, providing we could secure varieties that would be more fruitful than those commonly cultivated. On some soils it is a waste of time to grow black currants. They seem to succeed best on rich sandy loam, not too dry, and even then they need the best of cultivation. At the Geneva Experimental Station, the Prince of Wales, a new variety, has been tested and found to be productive and healthy. The horticulturist there, also recommends the Champion Black, Lee's Prolific, and Baldwin's Black. At our own Experimental Farm at Ottawa, a large number of seedling black currants have been raised by Professor Saunders, many of which are exceedingly promising. Among them we may find some even surpassing those named above.

THE FRUIT EXHIBIT of the Western Fair was a creditable one, but the number of exhibits was not as great as was anticipated. Grapes, apples and pears were especially good, notwithstanding that the season has been unfavorable. Peaches and plums were quite limited. The greater number of prizes were carried away by Hamilton growers, the names of Marshall, Bambfylde, Wilds and Burner appearing frequently.

A SHORTAGE IN THE ONION CROP for the season of 1892, is reported by *Farm and Home*. The information has been gained by careful inquiries from many correspondents. This is contrary to the estimate made early in the season, based on the amount of seed sold by the seedsmen to growers. The extremely wet season has very much injured the quality of the crop, and, in consequence, first-class stock will be scarce, notwithstanding the extensive sowing.

WOODALL'S DIAGRAM of the weekly fluctuations of the Liverpool Market in apples, is of interest, because it enables one to see at a glance the various changes which the prices have undergone. Last year Baldwins opened in Liverpool at 19/6 on the 30th of October, was at the lowest on the 20th of November ; rose to 18/6 on the 1st January, 20/6 on the 5th of February, and to 33/ in the week ending 22nd of April. Total number of barrels imported into Great Britain last season was 1,450,000. There were nearly as many imported in 1888-9, the number reaching 1,435,222. The smallest was in 1890-91, when the total was only 451,000 barrels.



THE LATE P. C. DEMPSEY.

In the Death of our dear old friend, MR. P. C. DEMPSEY, of Albury, on the 27th of August last, the Ontario Fruit Growers' Association loses an honored director and a faithful supporter. For nearly twenty years he has kept his place on our Board, and ever shown the deepest interest in our work, a fact which was recognized by the Society in making him president for two years in succession. His work as a hybridist is well known, resulting in the production of several fruits of value, among which may be especially noticed the Trenton Apple and the Dempsey Pear. A sketch of Mr. Dempsey's life appeared in Volume XI, p. 242, therefore we need not repeat it here. Suffice it to say that the officers and members of our Association unite in expressing their sympathy with the bereaved ones, and in testifying to the worth of the departed.

❖ Question Drawer. ❖

SHOT HOLE FUNGUS.

191. SIR,—My plum trees made a rapid growth during the first part of the season and were heavily laden with fruit, but, about the latter end, 6th July, the leaves appeared as if scorched and have since dropped, leaving the trees almost bare. The fruit, however, still remains on the trees, but has grown very slowly. Can you tell me the cause and cure?

R. TROTTER, Owen Sound, Ont.

The leaves enclosed by our correspondent are riddled with small, round holes, as if made with small shot, for which reason this disease has been called the shot hole fungus. It is known to scientists as *Septoria Cerasina*. It attacks the foliage of both the plum and the cherry, and, though not usually so serious as in the case before us, inflicts considerable injury by interfering with the proper function of the leaves, or by causing them to drop prematurely. The leaves attacked first show dark purple spots, visible on both sides, from one

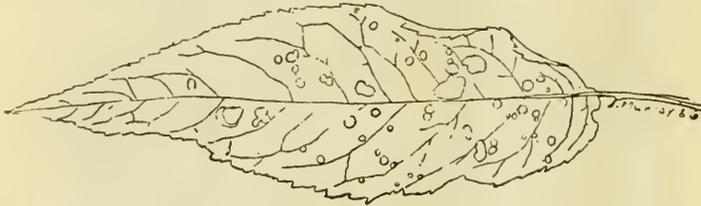


FIG. 83.—SHOT HOLE FUNGUS.

twenty-fourth to one-eighth of an inch in diameter. The tissue covering these spots soon becomes dead brown in color and finally drops off from the leaf entirely, leaving numerous clear-cut, round holes, such as are well shown in Fig. 83.

Under the microscope we may detect, upon the under surface, very minute black spots. These spots are the fruit of the fungus-like capsules in which the spores of the fungus are produced in great abundance. These are very slender, many times longer than broad, and quite transparent. Each spore is divided by cross walls into two or more cells, each of which is capable of producing a new parasite. The spores live through the winter on the old leaves, and thus serve to propagate the fungus in early spring.

In Vol. XIII, p. 316, may be seen an illustration of an highly magnified section through the leaf, including one of the spore capsules above described, and at *a* above are shown some spores still more highly magnified.

Nothing can be done at this season beyond destroying in some way, if possible, the old leaves. The best treatment, however, will be a preventive one.

Spraying in the early spring with copper sulphate compounds for the purpose of preventing the plum rot, or *Monilia*, of the fruit, may also prevent the development of the shot hole fungus.

ROOT PRUNING.

495. SIR,—Will you kindly tell me in the next issue how far from the trunk of apple trees should I prune the roots. The trees are twenty years old, Kings, and very large.
O. F. BURCHARD, *Kings Court, Ont.*

This is very little practised by horticulturists in Ontario, and the operation is one that should be attempted with considerable caution. The danger lies in too much lessening the vigor of the trees by cutting off those roots by which supplies are taken in for its growth and development. If the roots are overpruned, the life of the tree will be shortened. The benefit consists in checking the over-luxuriant wood growth, in order that the elements of nourishment, which are stored up in the tree, may be diverted to the formation of fruit buds. The same end is accomplished by grafting the trees on dwarf stock, as when a pear tree is grafted on the quince, or an apple tree on Paradise stock, and by summer pruning of the top. In England, where gardening is a higher art than here, root pruning has been much practised.

Root pruning should be done in the autumn or early winter. A trench is dug around the tree, at a distance from the trunk proportioned to the size of the tree. If begun when young, the tree may be so dwarfed that it will never become large; but, in the case of our correspondent, where the trees have grown twenty years and must be very large, the trench should be at least 10 or 15 feet from the trunk. The exact distance in each case will need to be left to the judgment of the operator. The roots should thus be laid bare, and, if found to be destitute of fibres, the leaders should be cut off in order to produce fibrous growth.

Mr. Rivers, an English nurseryman, who practises this root pruning yearly, with his apple and pear trees, sometimes makes them prolific dwarfs, growing only six feet apart, and producing abundantly. But Mr. Downing is of the opinion that, in this country, a single pruning is all that will be required to bring over-luxuriant trees into a fruitful condition.

Should our correspondent be successful in bringing his King apple trees into a state of productiveness, by giving them a thorough root pruning, the result will be worth making public through our journal. The great objection to this variety is its unproductiveness. Some say that, if top-grafted upon the Talman Sweet, the King becomes productive; but very few of the orchards of this variety have been so grafted, and, consequently, we will be glad if root pruning will accomplish the desired end.

❖ Our Book Table. ❖

NEW YORK AGRICULTURAL EXPERIMENT STATION TENTH ANNUAL REPORT, 1891, Mr. Peter Collier, director. This report of 554 pages, bound in cloth, is full of the results of experiments in agricultural lines. The report of the horticulturist at the end is interesting, and we have made a few notes from it which may be interesting to our readers.

FIRST REPORT OF THE DEPARTMENT OF AGRICULTURE OF THE PROVINCE OF BRITISH COLUMBIA, 1891 This contains sections upon diseases and pests; imports and exports; hard woods, culture and value; sugar beet; fruit trees and fruit, etc. From this report it appears that about 5000 people in the Province of British Columbia are engaged in agriculture, stock raising, fruit culture, etc., and the report is compiled from correspondence with them all.

ACCIDENTS AND EMERGENCIES; what to do till the doctor comes, by D. J. Groff, M.D. A thirty page pamphlet published by the Rural Publishing Co., New York, price 20 cents. This is an exceedingly useful hand-book to have within reach, giving information much needed in emergencies.

CANNING AND PRESERVING AND PREPARING FRUIT PASTES AND SYRUP, by Ermentine Young. A thirty-page pamphlet published by the Rural Publishing Co., price 20 cents.



B. BLOBBS BEGINS HIS GARDEN.



SOWS A CHOICE VARIETY OF SEEDS.



BUT IS TROUBLED A GOOD DEAL WITH POULTRY.



HE SETS UP A SCARE-CROW IT IS ALL RIGHT AS FAR AS CROWS ARE CONCERNED.



HE PUTS MORE FAITH IN WATCHING IT HIMSELF.



THE CROP BEGINS TO SPROUT HE MAKES AN INSPECTION.



WHEN BEGINS THE CRUSADE AGAINST BEGS, WORMS, GRASS-HOPPERS, ETC



THE PROUD MOMENT OF HIS LIFE WHEN HE DINES ON A MEAT OF HIS OWN RAISING.



MORAL—ETERNAL VIGILANCE AND LABOR IS THE PRICE OF CHOLERA MORBUS

BLOBBS AND HIS GARDEN.



PRINCE OF WALES.

THE
Canadian Horticulturist.

VOL. XV.

1892.

No. 11.



THE PRINCE OF WALES PLUM.

SINCE plum growing has become such an important industry in Ontario, our readers will be interested in a colored plate of a new variety which was commended at our last winter meeting by Mr. S. D. Willard, of Geneva, N. Y. Of course it is a novelty, not yet tested except at Geneva, yet its behavior there is sufficient to encourage growers elsewhere to give it a trial. The colored plate is one which was prepared under the direction of Mr. Willard, from fruit which he grew in his own orchard. The variety was originated by Mr. Thos. Rivers, a celebrated horticulturist of Sawbridgeshire, England, and was imported direct from him by Mr. Willard, who writes us his opinion of this plum in the following terms: "The tree is very hardy, exceedingly productive, and the fruit is of good quality. Its appearance renders it quite a favorite in the markets which we patronize. It is one of the best out of a large number of varieties of plums which we imported from Mr. Rivers. My experience, however, leads me to be careful in recommending any varieties for general planting upon all soils and in all sections."

The fruit is round, medium size; skin reddish purple, with a thick bloom; flesh greenish yellow and of good quality; very productive, and ripens early in September.

THE BROWN THRASHER.



HE Brown Thrasher, commonly known hereabout as the Brown Thrush, is not very generally known, otherwise it would not occasionally be said that we have no song birds in Canada. Although not a rare bird, he is not common throughout Ontario. Here, at the foot of Lake Ontario, seems to be a favorite locality for him. I have known him by his annual summer residence here, for over a quarter of a century. Early one morning last June, while walking through Cataraqi Cemetery, I had the pleasure of listening to three individuals, perched on tree tops, not more than 100 rods apart, and have no doubt the mate of each was engaged in domestic affairs, not far away.

I have often heard the "mavis" in the forest skirts of the British Isles, when it seemed as if he had been created for the very purpose of cheering the

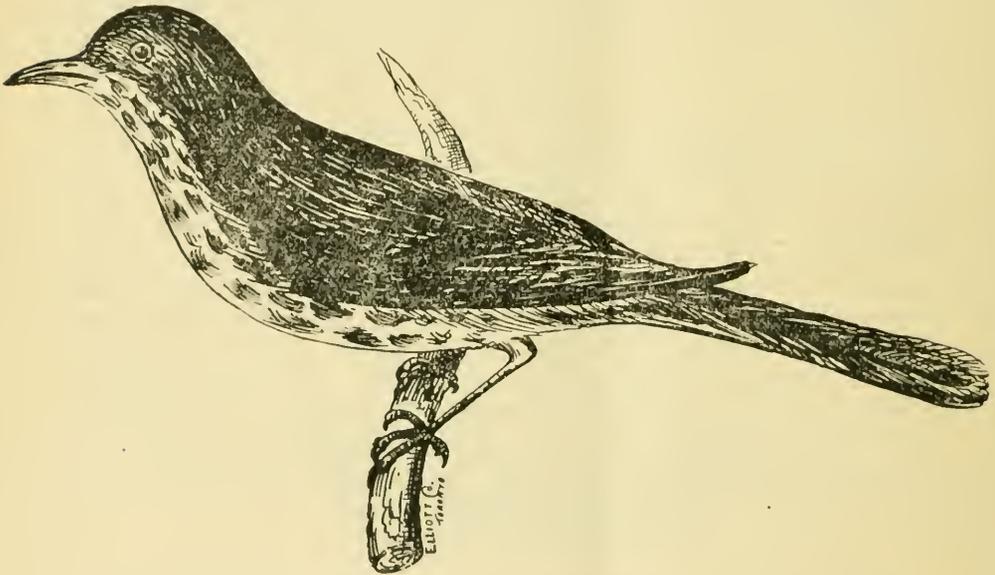


FIG. 85.—HARPORHYNCHUS RUFUS.

hearts of the human race; yet not more cheering is his music, than the melodious strains of this Canadian songster. We claim him as Canadian, because here he is born and bred, although he stays with us less than half the year, coming about the beginning of May and retiring in September.

His grandest brilliancy of expression is generally given early in the morning, and that, doubtless, is partly the reason why he is known by so few. The

dwellers in towns and cities cannot enjoy his musical charms, he loves solitude, and is too proud to sing in captivity, which shows a higher degree of intelligence than is possessed by some birds, who do not refuse to gratify the morbid curiosity of persons who cruelly confine them in cages.

The Brown Thrasher is a magnificent bird ; although his plumage is not of bright colors, his form is handsome, his actions are graceful, and his habits are admirable. His great compass and power of voice, his musical composition, his artistic execution, as well as the vigorous manner in which he pours it forth, is beyond that of any bird I know of. I wonder why brown thrashers have not multiplied nearly so fast as the robins. They are probably as long-lived, and in their nests I have generally found about the same number of eggs ; they exercise great care over their nests. I have seen the female alight on a man's arm, outstretched towards the nest when full of young ones ; and they always make surprising demonstrations of displeasure when their nest is approached. Perhaps it is partly because the robins nest near human habitations, where they are partially protected from rapacious birds and other nest robbers, whereas the thrashers make their nests in solitary places, on or near the ground, where they are easily preyed upon by snakes, weasels, skunks, owls and crows. I believe many of them are killed when they go to their winter residence in the Southern States, where there is no law against killing migratory birds.

The food of the Brown Thrasher is chiefly insects and their larvæ ; I have seen him catching the codling moth, and on that account alone he should be protected. Insects injurious to the interests of the horticulturist are alarmingly on the increase. This year I have seen hickory, butternut and walnut trees stripped of every leaf by the forest tent caterpillar, and some orchards not far from here are sadly destroyed by the orchard tent caterpillar, so I fear that unless our friendly birds are protected and encouraged, we will, in a few years, have neither fruit nor forest trees. This bird, especially, should be guarded, even although he takes some cherries and raspberries in their season, by way of dessert. The good he does, and the pleasure he affords us, far over-balance what harm he does. It is a great mistake to condemn a bird which does so much good, merely because he does a little harm. I do not know of a more lovable bird than the Brown Thrasher. In color and markings, he very much resembles the "Hermit Thrush," but is of more slender build, and nearly as long as the Black-billed Cuckoo—about eleven inches.

D. NICHOL.

SOME LARGE TOMATOES are being produced at Orillia. Mr. H. Pellatt sent the *Packet* office one sample weighing a pound and two ounces ; and Mr. C. L. Stephens, one weighing a pound, three ounces and a half. Both were Peter Henderson's new variety, the Ponderosa, an excellent show tomato, and withal of good quality.

HINTS FOR NOVEMBER.



BUSY MONTH.—With the fruit-grower the month of November is by no means a time of leisure, as with the farmer. The picking and packing, of apples so delays every other work, that Jack Frost has his icy hands upon us ere we are prepared for him. Much fall ploughing should be done in our orchards, in order to expose the soil to the disintegrating influences of the frost, and to rout the mice, who are so fond of nesting in the proximity of fruit trees.

Especial care should now be given to young trees to guard them against mice, which are almost sure to attack their young and tender bark under deep snows of winter. The simplest mode of protection is a mound of fine earth thrown up about the trunk. This any one can do with no expense, except for the labor, and, after twenty years of practical experience, the writer can commend it as perfectly reliable. Tin guards, wire netting, thin flats of veneering placed about the tree and simply fastened in place with wire, or string, are excellent. The only question is that of economy of time and money in deciding the preference.

CUTTINGS.—In enlarging our fruit plantations it is quite unnecessary to spend money purchasing vines and bushes of such fruits as may be easily grown from cuttings. Grapes, currants, gooseberries and quinces are all easily propagated in this way, even by the merest amateur. It costs little trouble to bury or preserve in sawdust the wood from the annual pruning, and, at the proper season, to plant it in nursery rows which can easily be cared for with a one-horse cultivator. Of several thousand currant cuttings made by the writer, and planted out last spring, in such rows, scarcely one failed to grow; and on other occasions we have had similar experience with grape and quince cuttings.

Mr. A. S. Fuller in his "Grape Culturist," gives the following as his method of preparing grape cuttings:— "About the last of November, or the 1st of December, I select the wood for cuttings, and with a pair of garden shears cut it up into lengths of about six inches, leaving not less than two buds upon the cutting. If the wood is very short jointed, a cutting of this length will have

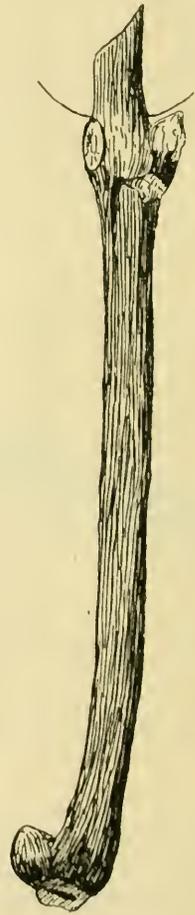


FIG. 86.

two or three buds upon it ; if so, they are all the better, as roots usually start from each bud, but are seldom emitted the first season, in cuttings grown in the open ground, from the stem between the buds.

With a sharp knife smooth off the wood close to the base of the lower bud, and cut off the top end about an inch above the bud, at an inclination as shown in Fig. 86, which gives the form of a two-bud cutting."

The cuttings, after being prepared, are buried in the ground, placing them at an inclination of 45° , in layers of about an inch or so deep, of grape wood and fine earth, alternately. In the spring, as soon as the ground is ready, they should be set upright in a trench, or, if more than six inches long, they will need to be somewhat inclined. They are usually planted three or four inches apart, leaving the upper bud about even with the surface of the soil. The earth should be pressed firmly about the cuttings. A simple way of planting is to make a trench along the side of a line by simply inserting a spade full depth in the ground and moving the handle back and forward until the soil remains sufficiently open to receive the cuttings. They are then put in place and the ground pressed back firmly about them by the treading of the foot. This same mode of planting will apply to all kinds of cuttings.

Grapes are sometimes propagated by joints of a single eye with an inch or two of wood attached. These should be prepared in the fall and packed in clean, damp, not wet, sand, in a cellar that is not too warm. Under such conditions a callus will soon be formed—a curious excrescence,



FIG. 87.

nature's mode of covering an exposed portion of wood—and from this roots will soon be sent out. The accompanying illustration, Fig. 87, from Downing's "Fruits and Fruit Trees of America," will clearly show how single eye cuttings are made.

The making of cuttings of gooseberries and currants scarcely needs any directions, even for the novice. In the pruning time we make it a rule to remove about one-third of the last year's growth, and these, averaging from three to four inches in length, are buried in the soil, as above directed, and then planted in the spring in rows about four inches apart. If the cuttings are of more account than the fruitfulness of the bush from which they are cut, it will be an advantage to remove with each cutting a small portion of the older wood along with the new, or, in the case of a side shoot, the cut may be made very close to the old wood. While this is helpful, it is by no means necessary, as these cuttings, in a favorable season, grow with the greatest ease.

Formerly writers on horticulture advised removing every bud from the cuttings with the exception of a few at the upper end, the object being to procure young plants with clean straight stems at the surface free from suckers. Were it not for the borer this plan would still be advisable, but in our experience of later years we find it important to encourage suckers from the roots, because

the older stems are so frequently destroyed by the currant borer, and need frequent renewing.

The quince also roots very easily from cuttings and it is a problem why the price of quince trees should be kept so high when they are so easily propagated. Perhaps it may be explained by considering what slow growers they are, occupying nursery rows so long before they are suitable for planting in the orchard.

The pruning of the quince tree is usually sadly neglected, and, in consequence, presents a perfect network of limbs. Such trees cannot bear fine fruit or any quantity of it. They should be thinned annually and the young wood cut back. Cuttings should be of the last season's growth. If taken off close to the old wood, at the shoulder, they will mostly grow, if planted in moderately moist soil, especially if the cuttings have first been callused. The surest method of propagation, however, is by suckers, the growth of which is easily encouraged. These may be pulled off with a portion of the root attached, and in that case can hardly fail to grow.

WINTER PROTECTION.—In Southern Ontario we pay little attention to the laying down of grapes or raspberries, but, much oftener than we think, our short crops of red and black berries and grapes are due to the severe weather of our winters when the thermometer reaches 10 or 15 below zero.

The work of protection is not so great as one might suppose. The vines are easily loosed from the wires and thrown down to the ground, where they are held in place with a shovel of earth. The snow will then cover the wood and protect it. But in some sections, as in Southern Ontario, snow falls are rare and cannot always be depended upon. In such cases a few furrows of the plow in the vineyard will bury the fruit-bearing portion of the vine with earth, and thus be a complete protection to the fruit buds.

Raspberries will easily bend if their canes have been allowed to grow long but in the case of the stiffer canes of the blackberry, a little digging may be necessary in order that they may be easily bent to the ground.

Covering strawberry plants with some light, loose material, such as leaves, evergreen boughs, straw, etc., will well repay the owner by the immensely increased yield of fruit the following season.

KEEPING THE CELLAR COOL at a temperature a little above freezing point, is the secret of preserving fruit throughout the winter. Few consider the importance of such a condition, and wonder at the early decay of fruit and vegetables which they have stored away. The temperature may easily be regulated by the opening of the windows in the night and closing them during the warm days of the autumn; and, in winter time, an occasional opening of the windows will, of course, reduce the temperature whenever it is needed.

“ See here, waiter, this pie hasn't any apples in it ! ” Waiter : “ I know it, sah ; it am made of evaporated apples. ” -- *Lampoon*.

NOTES FROM THE CENTRAL EXPERIMENTAL FARM, OTTAWA.

GRAPES.



WHILE the total summer heat in this locality was probably up to the average, yet the heated period, arriving as it did early in the season, was more favorable to a rampant growth of vine than the early ripening of the fruit. The fact that many of the Rogers' and other hybrids are dependent, in a measure, on cross fertilization was more clearly brought out this season than usual, owing, no doubt, to the moist and rainy weather which prevailed during the blossoming period. Some interesting experiments were made along this line recently by Prof. Beach, of the Geneva Experiment Station, N.Y. By enclosing in paper sacks, before blossoming, a number of clusters of each variety in the vineyard, he readily determined which sorts were perfect in blossom, and which were dependent on cross fertilization. The results showed all gradations from sterility to complete fertilization. Among the Rogers' varieties impotence was more common than among those not hybrids. These results confirm the opinion of many grape growers, and point as a practical remedy for this defect to the mixing or intermingling of these varieties in the vineyard.

Among red varieties which have done well on these grounds the past season are Vergennes and Gærtner; they have made good bunches, ripened perfectly and have been entirely free from mildew. Salem set well, but where unsprayed, mildewed considerably. Massasoit and Agawam failed to ripen thoroughly, while Lindley set poorly and was attacked by Bird's Eye Rot (*espacloma ampelinum*). Eldorado (white), which has been a vigorous grower, a good bearer, and has taken the lead of all varieties in the vineyard for the past two years in regard to quality, made a very poor showing, owing to incomplete fertilization. Scarcely a perfect bunch was obtainable. Among other white varieties Duchess, Hayes, and Kensington are to be commended. They are all of good quality, ripening with, or soon after, Delaware. Kensington was produced at London some years ago by Prof. Saunders, who pollenized Clinton with Buckland's Sweet Water. In a remarkable way it combines in fruit and vine the characteristics of both parents. Vine, fairly vigorous; wood, short jointed; leaves, deeply cut; bunch, medium to large, sometimes very large; berry, medium size, oval; skin, thin; pulp, rich and juicy; a grape of first quality, ripening a week later than Delaware. Thus far it has not been propagated to any extent, but its probable value, especially for home use, should lead to more extended trial by grape growers.

Among black varieties Eaton does not deserve such high praise as is so generally accorded; bunch and berry are very large, but on these grounds its quality is much below par. Potter is much better in quality, earlier, but the berries drop almost as readily as some of the Southern Fox grapes when grown in this locality.

Moore's Early, Worden, Merrimack, and Roger's 36 were very satisfactory.

The disease, Bird's-Eye Rot, or Anthracnose, which I have already referred to, seems to be on the increase in grape growing districts. This should be very carefully watched, as I am unaware that it has thus far been successfully treated with any of the copper compounds. The results of my own experiments this season have been entirely negative. I should be pleased to get any information relating to the spread of this disease, and especially glad to know if any journal reader has treated it successfully.

In comparing Bordeaux mixture, half strength, and ammoniacal copper carbonate as remedies against grape mildew, I find a slight difference in favor of the latter, though the use of both has been highly satisfactory.

This matter of spraying should receive more attention from fruit growers than it has heretofore.

PLUMS.

A very interesting member of the Japanese family, which had been planted under the name of Botan, fruited this year. It is interesting alike from its ability to withstand this somewhat severe climate, and its extreme earliness, being ripe here on August 8th, about two weeks ahead of any other variety. The tree is a strong, upright grower. Fruit medium size, egg shaped, no suture, skin, which is thick, is yellow in color, overlaid with red markings, and a light lilac bloom. Stem fairly long set in a small cavity. Flesh yellow, firm, with a peach-like flavor. The pit, which is very small, not much larger than a cherry stone, separates readily from the flesh. Not of high quality, but on account of its season may have some market value.

A large number of varieties selected from our native plums fruited this season. They will undoubtedly be valuable in sections where finer varieties of the *domestica* class cannot be grown. In connection I may say that one of the finest examples of a perfectly laden plum tree was to be seen last month in the garden of Mr. R. B. White, an enthusiastic fruit grower of Ottawa. This was in the shape of a well grown specimen of Glass, seven or eight years of age, literally covered with fruit, each branch a perfect rope, describing an arc of a circle. This tree has borne regularly for several years. The variety can safely be considered hardy in this vicinity, but its fruit buds, Mr. White informs me, are occasionally injured by spring frosts.

Among native varieties thoroughly tested De Soto is undoubtedly the best. It is remarkably productive and desirable, both for canning and eating in its natural state. Wolf and Hawkeye, dark red, are larger and later, but retain more of the wild astringent characteristic. Cheney and Van Buren, light red and yellow, are almost free of stone and of good quality. They lack the vigor of tree of the former, but are very desirable.

These varieties should be headed low and should be annually shortened in, as their habit of growth is naturally rambling. I may say that Weaver for the past three years has borne heavily, but is not equal to De Soto in quality of fruit.

JOHN CRAIG, *Horticulturist.*

THE CANADA BALDWIN.



URING the year 1884, our Association distributed trees of this hardy apple among its members for testing. A few days ago, Mr. T. W. Beall, of Montreal, sent us a basket of beautiful samples of this apple, for the World's Columbian Exposition, one of which we had drawn and engraved, Fig. 88, showing its form and markings, while Fig. 89 shows a section of the same. The apple,

which is of the Fameuse type, originated in the orchard of Mr. Alexis Dery, St. Hilaire, Que. It is described as handsome, of medium size, oblate in form, skin white, thickly striped with red and splashed with crimson. The flesh is white, tender, fine-grained and juicy, with a peculiar subacid flavor. Ripe for use from January to April.

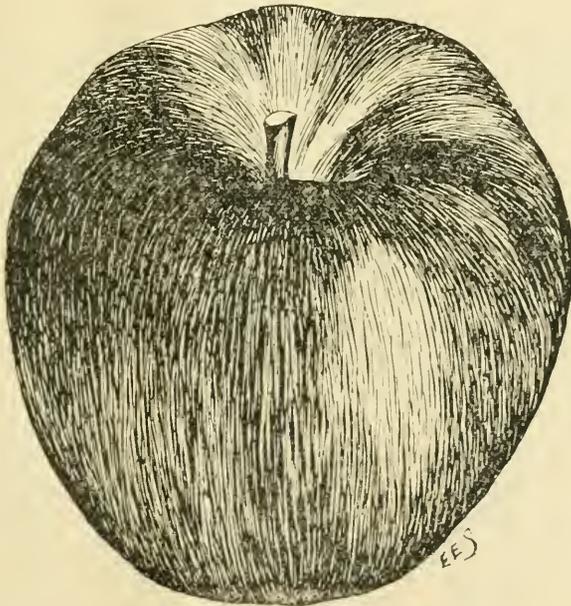


FIG. 88.—THE CANADA BALDWIN.

The particular adaptability of this apple to heavy clay soils, and its great hardiness, peculiarly adapt it for cultivation in certain sections; on light soils it is a slow grower, and the fruit less satisfactory. We shall be pleased to receive further reports concerning its merits.

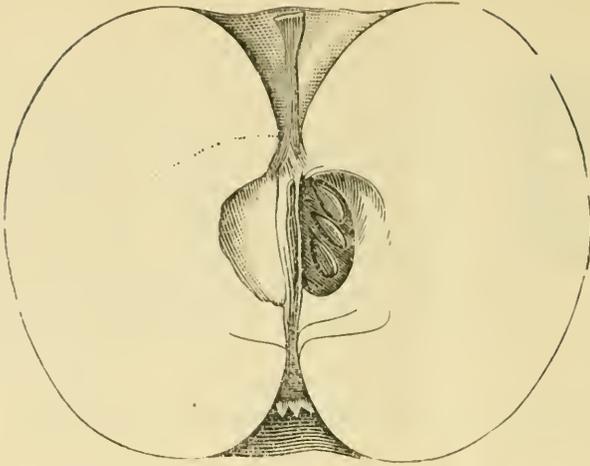


FIG. 89.—SECTION OF CANADA BALDWIN APPLE.

LABELS FOR TREES IN PLEASURE GROUNDS.

While a ground label may be the proper thing for a young and choice tree in parks, etc., because another kind could not be affixed to it in a satisfactory way, a much better device for large specimens, simple and cheap, is made of a piece of tin about four inches long by three inches wide. Bend down about half an inch of the upper edge at a right angle, which will form a little coping for the label; then make two little holes just beneath this and pass a strong copper wire through them, firmly nailing it to the tree. This should be about 5 or 6 feet from the ground, and in a position where it can be easily read. Such labels last a long time and are safer from displacement or loss, and hence more satisfactory than labels inserted in the grass at the foot of trees.

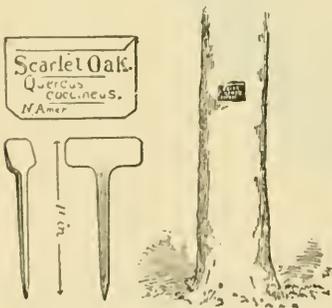


FIG. 90.

For garden plants, young trees, etc., strong but neat cast iron labels will be found serviceable. If you wish to get a stock of them for your choicer plants, make a model of wood, about 10 or 11 inches high, one inch wide at the shank, the head 4 to 5 inches across and 2 inches wide, as shown in engraving, and send it to the foundry. In writing these labels first write in the outlines of the letters, and then fill in rather thickly with finely strained paint. For ground color white is preferable to black. Write the common name first, then

the generic name, then the species, and a little to the right below, the genus. It is always desirable to put down the native country of tree or shrub, and date of planting. The writings on these labels should be occasionally renewed in winter.

—Popular Gardening.

EXPORT OF APPLES.



APPLE shippers to the British markets are not realizing such prices as they should so far this season. There are doubtless many reasons why this is so, but looking over some of the auction sale bills, I conclude without hesitation that one great source of loss is in shipping late varieties too early. Fancy Baldwin selling in Liverpool in Sept. ! No wonder the price was 8/9 per barrel for the best, and less for some that were used as samples at the sale. Greenings, Pomme Grise, Seeks, and even Kings, in market at very little advance for the best samples of the latter. Both at our own meetings and at Institutes, the matter of shipping at proper seasons has often been discussed. Russets are not wanted in British market, at their proper value, until after the new year. February and March are the best months to sell them. It is a mistake to ship fall and winter varieties at the same time, as I see many have done. Then from the fact that so many are reported as "slack and wet" it is evident that, generally speaking, there is no improvement in manner of culling and packing ; too many seconds are allowed to pass into the packages with firsts, and hence the shipper has to take the price of seconds for all. I observe one sale of winter kinds as early as September 16th ; no wonder the shipper lost money, as the fruit was unfit for use, not being properly matured. Besides this sort of thing is a decided injury to the country that produces such fruit, and the market becomes demoralised. At the sales on September 30th, and October 3rd, 5th and 7th, matters appear even worse, as many varieties that should have gone forward early, appear at that late date as "wasty," "slack and wet," and "rotten." It seems to me if we could get our shippers to cull out only the best fruit, pack tightly enough to carry without loosening, and ship specific kinds only in their own season, that it would be money in their pockets, much better satisfaction to the consumers, and build up a reputation for honest dealing, and catering strictly to the wants of Britishers, that would be a credit to Canada. There are shippers who work in this way, but they are the exception, and the prices they obtain are also an exception. I find also that those who ship to fill private orders or for private sale to retailers, obtain much better prices. Is this because their fruit is of superior sample, or is it an argument against the auction style of doing business ? Perhaps both. We will see later on.

The Wealthy, so far as I have observed it this season, holds its reputation ; and from experience up to date, would say plant more. Ontario also is clean and a good crop wherever I know it, and bids fair to supplant its parents for profit. Pewaukee requires cultivation and manure to keep it up to mark ; a little neglect and you will find many miserable specimens on the tree. It is evidently not a variety for the grower who would let the tree take care of itself.

Blenheim Pippin was always good, and will remain so if it receives any sort of decent encouragement now and then. But then they all want that. Educate growers to devote half the manure and labor on the orchard that they do on any other equal portion of the cultivated farm, and generally finer samples of fruit, more of it and better prices, with a rapidly rising demand, will be the result.

MULCH.—At this season of the year, Mr. Editor, I believe it would pay to post a card containing these five letters over the front door of every fruit grower's house. Nature is busy laying down a mulch in her domains, and if we follow her example we do well. Especially is this necessary in newly-planted trees. Yes, mulch with manure now on to the time that frost comes, and when spring opens instead of taking off this extra blanket turn it into the soil.

A. McD. ALLAN.

Toronto, Ont.

AN ENGLISH FRUIT-GROWER'S VIEWS ON MARKETING.—As most of the fruit grown is consigned to salesmen, I would try and discover some one who bears the character of honest dealing, and trust him. Do not dodge about from one to another ; this often has led to getting "out of the frying-pan into the fire." If the fruit be honestly packed, giving good measure, customers soon discover this, and inquire for the goods, with the result that full market-price is obtained with little difficulty. I find it to be a good plan, as a rule, to have a continuous supply of the same kind of fruit. In sending, say, 100 bushels of apples of one kind to market, I would not send them all at once, but begin with 15 or 20 bushels, increasing the quantity as the customers seemed to appreciate them. On the other hand, do not send a small quantity of a large number of sorts, which is very bewildering to the salesman, who finds such consignments a great nuisance. Let all fruit be in a marketable condition when sent, or it will probably be left for days or weeks before finding a purchaser, and then only at a low price, alike unsatisfactory to the salesman and the grower. The great advantage of the fruit from abroad is this, "that when placed on the market it is fit for immediate use," which seems to suit the circumstances of most buyers, who say, "we do not want fruit to keep, we want it to sell." We must, therefore, try and supply not only the article, but supply it also in the condition in which they require it.—G. HAMMOND, before the British Fruit-Growers' Association.

CROCUSES IN SOD.—Crocuses grow readily in ordinary sod. The bulbs should be 2 or 3 inches beneath the surface. The flowers are scarcely out of the way by the time the grass needs cutting, assuming that the sod is one that is kept closely mown. A favorite place for growing crocuses in grass is under the shade of deciduous trees, where the grass does not make a strong growth. Another good place for them is about the base of evergreen trees, and under the branches of flowering shrubs.—Am. Gardening.

RANDOM THOUGHTS ON VARIOUS TOPICS.



JUST in proportion as we get liberated from self and its tyrannical sway, will we be desirous that others should profit by our experience, hence we may speak and write much that others know and have practised as well as ourselves ; but then we may have found something that is new to others which may excuse an effort for the advancement of what we have profited by. The preparation of fruit exposure at the Chicago World's Fair, seems to be an interesting topic just now, and although one may not send samples to exhibit, yet would be glad to know that a fair representation had been sent by others. The usual method of exposing fruit samples in oval jars, does not afford a fair representation. The oval surface magnifies, and the fruit seems larger than it is. Square glass jars, with one side scaled off into inches, halves and quarter inches, something like the scale on a druggist's measuring glass, would be better vessels for fruit exposition than are usually seen at fairs. It is to be hoped that Canada will be fairly represented at the Chicago World's Fair, which bids fair to prove a grand success, if the cholera does not get there to dampen the ardor of the exhibitors and visitors.

There is an increasing interest in fruit growing yearly in the Ottawa Valley, and especially in the vicinity of Ottawa City. "It pays" is one reason, and as some of the climatic obstacles are overcome, success is more prevalent than formerly. Strawberry cultivation is on the increase largely, but a great deal of inferior fruit is thrown on the market owing to a want of care in cultivation, and also a lack of variety in kinds, the Crescent and Wilson being the chief varieties grown. Raspberry culture here has a large, wild pick to contend with, yet there is a fair showing of garden produce, which is increasing.

The Early Richmond cherry is coming into favor, being hardy, and brings a good price on the fruit stands. But we are forced to forego novelties in general, as Jack Frost has too strong rule through our winters to allow an indulgence in novelties to any great extent. But one strong encouragement meets the fruit grower in this section, what fruit he does turn on the market brings a fair price, and is eagerly sought for. We find in the line of fertilizing, that to throw our wood ashes into the privy vault, and in the fall take out and mix with equal parts swamp muck and stable manure, a valuable compost is formed for filling in furrows to plant vegetables on after covering the compost back with earth. (Coal ashes may be prudently mixed in this way, but wood ashes are better kept separate till time of application to soil.—ED.) I experimented some by plowing two ridges four times for planting strawberries on, raising a crop of corn this year. The growth was simply immense, and the ground is now in fine order to set on strawberries. I believe it will pay largely to plow all vegetable ground three or four times before planting, as the soil is

well pulverized, and draws from the air certain elements which adds to vegetable production largely. Plant food comes largely from the air, and a porous soil is far more congenial to plant growth than a close packed soil.

Manuring just enough is better than over-manuring. Some people crowd in more manure than the soil can assimilate profitably, and wonder why they don't get better returns. Let the land rest from manuring a year or two and better results will appear.

Nepcan, Sept. 1892.

L. FOOTE.

STRAWBERRIES TESTED AT GENEVA.—The *Bessie* and *Michel's Early* strawberries are condemned as being unproductive. The *VanDeman* is reported as the very best extra early variety ever tested, and, in the opinion of the horticulturist there, has a great future. The most productive of all the varieties tested was the *Burt* producing in matted rows at the rate of eleven thousand quarts per acre! Of course the experiment was made with small plots; still it shows us what is possible. In the station's bulletin for August, 1892, the *Beeder Wood* is reported as leading in productiveness; the *Burt*, which for three years had given the best yields, falling behind. The *VanDeman* is a little in advance of *Michel's Early*, in beginning to ripen, and matures its crop so quickly that it quite outranks the latter as a market berry. The *Warfield*, *Eureka* and *Haverland* are reported as standard varieties extensively grown by fruit-growers about Geneva. The strawberry blight has been severe, but Bordeaux mixture is recommended as a preventive, prepared with two pounds of lime and three pounds of copper sulphate to twenty-two gallons of water; two or three applications each season.

NOVEMBER.

STORM! storm! storm!
 And the snow-flakes fall amain,
 And the wintry winds moan drearily,
 How unlike last evening's rain.

Storm! storm! storm!
 And the winds incessantly roar,
 And the long dark waves of the ocean,
 Roll heavily on the shore.

Storm! storm! storm!
 And the winds of memory roar,
 But the joys of my joyous childhood,
 Roll into my heart no more.

Brantford.

W. H. PORTER, M.A.

❖ The Vineyard. ❖

ABOUT GRAPES.



LARGE amount of plant food is lost in the soil near our houses. It accumulates in the shape of ashes, bones and slops. In what way can it be utilized? We cannot grow vegetables nor flowers in all out-of-the-way places. Neither can we have trees too near the house to shut out the light. In addition to its being an improper place to raise these things, the soil is often so hard and dry that but few things will flourish; and the heat reflected from the house is too much for most crops. What is it that can send roots through hard, dry soil, down beside foundations, under buildings and walks—anywhere and everywhere, 40 or 50 feet away—and make use of all the plant food within its reach? The grape vine can do this, and its foliage is all the better for the heat and the shelter that it gets in such situations. It needs a dry, rich and hard soil, and if its foliage can be kept dry, so much the better. The sides of buildings are admirable places to train vines on. The fruit never rots when it is kept from rain and dew by the projection of the roof, or by any means. Three sides of our house have been covered with vines for ten years, and a rotten grape has never appeared, although we lost most of the crop on the trellises in the garden near by.

It makes no difference how rocky land is for grapes. I have known them to flourish where it was necessary to carry soil to cover the roots in planting. I have frequently planted vines with their roots under buildings and brought the vines out at the foundation. They never fail in such places for want of water, the natural dampness of the soil being sufficient for them. Not unfrequently such vines come through the winter uninjured, when those in the garden or vineyard are seriously damaged.

Vines trained on a building are quite ornamental, and, if judiciously managed, produce a large amount of fruit. They keep the house cool in hot weather, and do no injury in any way except to get their tendrils under the siding or occasionally overload the gutter.

I have known of vines that produced an immense amount of fruit when trained on buildings. A large vine in a city yielded nearly a hundred dollars' worth every year. A friend of mine had an Isabella vine that produced a ton of grapes in a single season. Another man of my acquaintance sold \$50 worth of fruit from a vine, and not a very large one either.

In village lots, where there seems to be no room at all, one can raise grapes if he only has a fence or building to train the vines on. I know of one person who covered the roof with a vine. If there be no soil to plant in, one can take up a little of the pavement, plant the vine and replace it. The roots seem to do better under flagging than anywhere else, especially if there be fertility to encourage root growth.

The grape is the fruit for the people. It is enjoyed by all and injures none. While there are things about it that the skilful vineyardist hardly understands, the fact remains that when a man plants a few vines, he and his family have grapes : while those who hesitate on account of possible failure, deprive their families of this fruit.—M. CRAWFORD, in Farm and Fireside.

TO KEEP GRAPES AND PEARS.—By exercising care in selecting and handling the fruit, both grapes and pears can be kept for a long time, at least until after the holidays. The most important item is to use only sound specimens. There is no advantage gained in using bruised or partially decayed fruit, for it will cause the sound to decay more quickly. Select the largest bunches of grapes and lay them out separately for a day or so, to partially cure, cutting away any berries that are in the least damaged. Use sawdust for packing, putting a layer first, then a layer of grapes, (each bunch being first wrapped with paper,) followed by another of sawdust, and so on until the box is full. Set the boxes where they will keep very cool, but not freeze. A great deal depends upon even temperature. Pears will keep in a much warmer place, but like the grapes, the temperature must be uniform. Take perfectly sound pears, not too ripe, for even quite green ones will ripen nicely in this way. Spread them out one layer deep in shallow boxes or drawers. Wrapping each separately in paper will help to preserve them. Keep dark, but above all keep the temperature even. The constant changing from warm to cold and *vice versa* is the main cause of decaying.

GRAPE JUICE.—The grapes should be of the best quality. Wash them thoroughly, after stripping from the stems and discarding any that are imperfect. Throw them into a granitized kettle with half a pint of water to every three quarts of fruit, skim when they begin to boil, and cook very slowly for ten minutes. While still boiling hot, strain through a jelly bag, squeezing the skins and seeds into a separate receptacle, as the juice from them will be apt to be discolored. Return the liquid to the preserving kettle, and after boiling half an hour, seal in heated glass cans like fruit. The juice from seeds and skins may be bottled separately. It can be safely kept till grapes are again ripe, if packed in a cool, dark place. The absence of light is as imperative as the absence of heat. Cooled on ice, it makes a delicious and wholesome beverage, and is supposed to have specially tonic qualities. If grape juice cannot be kept in a very cool place, add one cup of sugar to every quart of juice at the end of an hour, then boil ten minutes longer.

SHALL WE CONTINUE TO PLANT VINEYARDS?



AM by no means sure that the continued heavy planting of the grape will prove to be a safe commercial venture. It is, doubtless, true that the consumption of this fruit in a fresh condition is increasing at a rapid rate, and it may reasonably be anticipated that such consumption will continue to increase. On the other hand, public sentiment grows stronger and stronger against wine-making, and this seems likely to diminish the demand for grapes for such purposes.

The grape can be, and is, successfully and profitably grown much farther north than any of the tree-fruits, since by laying down and covering the vines they can be carried safely through the severest winter cold. With judicious selection of a vineyard site, many of even the late-ripening varieties mature with nearly or quite the same certainty as farther south. As a case in point, a fine collection of well-ripened grapes, grown in southern-central Minnesota, was shown at the New Orleans Exposition during the winter of 1875. Among them were perfectly ripe Catawbas which, even in southern Michigan and northern Ohio, ripen thoroughly only in exceptionally favorable seasons or in protected or sheltered localities. A subsequent visit to the vineyard in which these specimens were grown revealed the fact that their maturity was due to the training of the vines upon a low trellis with a southern slope and exposure. The vines were covered with earth in winter.—T. T. LYON.

Just so long as bananas are sold in our northern towns by the wagon and car-load we say, plant grapes. The capacity of our people to consume grapes is only just beginning to be tested. What we want is to improve their quality, to cheapen and quicken transportation and to extend the season. Every northern market should be supplied with fine grapes from June until January, and in abundance. Our people have only been eating grapes for two months; they ought to be supplied for six.

Fruit-growers need to tone up on honesty. They should put up honest goods in first-class order, stop growling at commission-men, and improve the quality of their fruit. Have a perfect understanding with your commission-house. Let the house know what you have, and just when it will be shipped. Make daily reports, use the telegraph, get acquainted with a trustworthy firm, and stick to it. It is possible to have good, faithful, conscientious producers and shippers at one end of the route, and good, prompt, honest dealers at the other end; but there must be mutual and continual understanding and co-operation.—S. S. CRISSEY, Chautauqua Co., N. Y.

Modest bearing is very commendable in a man, but it is no recommendation to a fruit tree.—*Lowell Courier*.

Father: "No appetite this evening, eh? What is the matter? Late unch?" Little Boy: "No, sir; early apples."—*Good News*.

❖ New and Little Known Fruits ❖

FOREIGN FRUITS.

SIR,—I send you by express two baskets containing six varieties of apples and nine varieties of pears. The pear named Wilmot was brought from Toronto to Newcastle about seventy years ago by the late Mr. Wilmot and was named after him. Do you know what variety it is?
J. D. ROBERTS, *Coboury, Ont.*

The interesting packages of fruit from our successful amateur fruit grower, Mr. J. D. Roberts, includes the following varieties, *Pears*:—Beurre Chaudry, Beurre Baltet Pere, Therese, Directeur Alphaud, Wilmot, Fertility, Souvenir de la Durand, Zol and Beurre de Mortillet; *Apples*:—Queen, Peasgood's Nonsuch, Cornish Gilliflower, Lord Suffield, Lane's Prince Albert and Red Bietigheimer. The pears are mostly French varieties and are large, but scarcely showy enough to attract the Ontario fruit grower. Beurre Chaudry and Directeur are large and fine, but not sufficiently mature for us to judge of their quality.

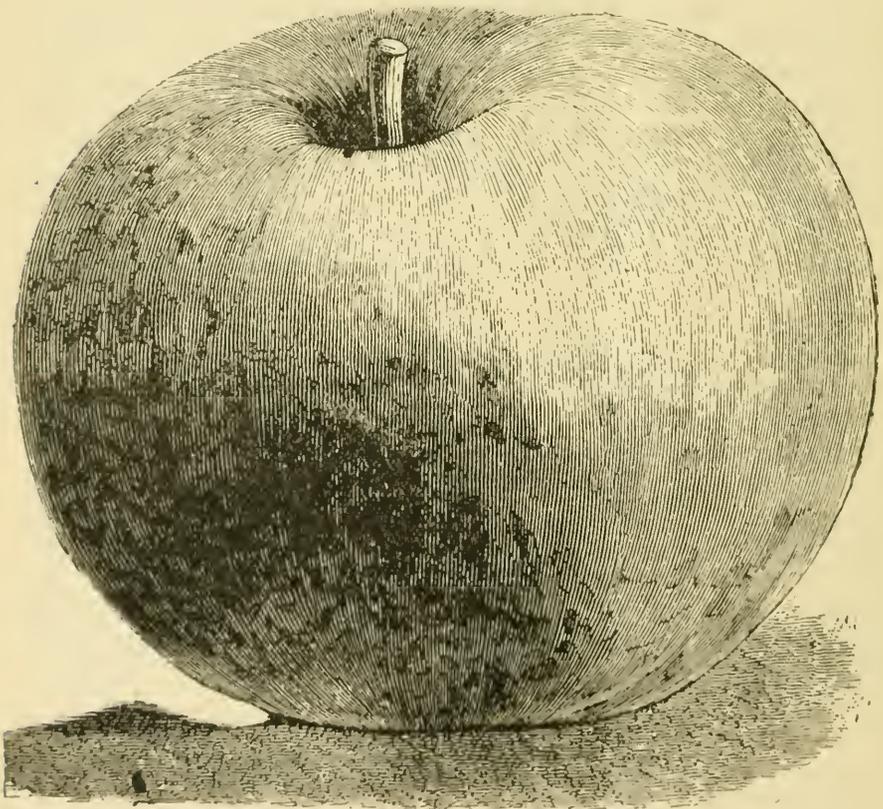


FIG. 93.—PEASGOOD'S NONSUCH APPLE.

Wilmot is a fine pear for dessert, of medium size, the skin a bright yellow, the quality good. It reminds us very much of the Ritson which was described in Vol. 14, page 387.

The apples are worthy of special notice being English varieties of high standing. Cornish Gilliflower has an ugly appearance and poor color, a true Gilliflower in shape; strange to say, it is one of the most valued of dessert apples in Great Britain. A writer in the English Garden speaks of the powerful aroma of the fruit when cut in half as being one of the characteristics of the variety, and of its rich flavor, which makes it so popular, and declares that there is no better dessert apple for the months of April and May, than this variety.

Lord Suffield is one of the leading cooking apples of Great Britain for use in the months of August and September. The fruit is large, white, soft and excellent for tarts and pies. A writer in The Garden says that it is the best of the Codling family, but the tree is a bad grower chiefly in consequence of its prolific habit.

Peasgood's Nonsuch is a very large beautiful apple. The sample before us is four and a half inches in diameter. The skin is green with a bright red cheek and streaked with the same color. The tree is a loose grower, but the fault is well made up in such beautiful specimens of enormous size. The quality of this apple is excellent for cooking. We give an engraving of this apple taken from the Garden. The Gardeners' Chronicle says that, apart from its beauty, this apple is recommended as one of the very best varieties, especially for culinary purposes.

Lane's Prince Albert is a winter cooking apple, large, clean skin, marked something like our Cayuga Red Streak. A writer in the Garden says: "Two good apples which every one should plant are the Cellini and Prince Albert. They will be useful both for home use and for market, as they are not only good, but they look good, and the latter point is as necessary as the former in anything grown for sale."

A FINE APPLE.

SIR,—I send you two or three sample apples from a tree received from the Association four years ago in place of a Yellow Transparent. These apples have been off the tree about three weeks. The tree had between three and four pecks of fine large apples like the sample. It is a very thrifty grower with an open head.

ANDREW WALKER, *Metcalf's*.

It is surprising that a tree planted four years ago should produce such a crop, and this speaks well for its productive qualities. The apple is very fine in appearance, somewhat resembling the King. Size, large; color, red on greenish-yellow ground; cavity, small, deep, ribbed; calyx, closed; basin, similar to cavity; flesh yellowish-white, tender, mellow, juicy, good flavor; season, about the first of September. The apple is surely a seedling. At least we know of none like it of its season. It has a strong competitor in the Duchess, a variety which can hardly be surpassed.



The Garden and Lawn.

CANADIAN WILD-FLOWERS.—I.



WE have many beautiful flowers growing in our woodlands and meadows that can be used to adorn our homes, both in town and country. They can be transplanted from their native localities at no other expense than a few hours of the children's time, and will thrive in cultivation as well as in their woodland haunts, many of them better. The expense of procuring flowering plants deters some from planting them about their dwellings, and hence many, especially of our rural homes, are so devoid of attractiveness in their surroundings. Now, this need not be, and, in truth, should not be. The influence of the home in which the children are reared remains through life, and oftentimes, nay, usually, shapes all their after years. If the influence of the home of our children is refining, stimulating thought and observation, thus leading on to useful reading, and intercourse with thinking minds, we may reasonably expect that when they become men and women they will be persons of intelligence, and therefore of influence. Our farmers, some of them at least, complain that they are looked down upon by those in other walks of life, that they do not enjoy the consideration and influence which their position, as producers of the wealth of the country, entitles them. In some measure this may be true; for the writer has more than once heard it remarked that the farmers of Canada, as a class, were at once the most suspicious and the most gullible of men. But in whatever measure the farmers fail of enjoying the consideration and influence which they should possess, it is wholly their own fault. As a class they have been prone to confine their attention to the mere routine of the farm, content to go on in the methods of their ancestors, never enlarging their mental vision by excursions into other fields than their own, or by indulging in studies or investigations of natural science related closely to their daily pursuits. There is nothing more true than that ignorance begets conceit. The ignorant man is the man that thinks he knows it all, and those who attend the January meetings of the Farmers' Institutes will testify that those who stand most in need of information are conspicuous by their absence. When the farmers of Canada lay aside

their conceit, and avail themselves of the means, now so abundant, of increasing their knowledge, and expanding and strengthening their mental powers, and thereby make themselves the peers of any class of their fellow-citizens, they will no longer have occasion to complain that they have not the influence and consideration that belongs to them as the great producers of national wealth.

Anything that enlarges our field of thought, that calls into play our powers of observation and comparison, especially if enjoyed in early life, helps on that mental development and strengthens those faculties which are essential to success in any calling, and especially in that of the farmer. If also that to which the mind is thus directed in youth has somewhat of a refining tendency it so much the better helps to the formation of such tastes as tend to correct the condition of our human nature, and produces in us that bearing toward each other that is the charm of social life. Therefore, we plead with our farmer friends for the planting of fruits and flowers about their dwellings. What is there that will make home so pleasant to your children as to make it bright to the eye with flowers, and rich with both the varied colors and flavors of our several fruits? Not only will you thereby make home more dear to them, but you will be giving them that which has both a refining and expanding influence, and if you encourage them in the cultivation of these you will be drawing out and strengthening faculties that will be needed much in coming years.

It is with the view of removing the objection of cost, that is urged by some against the planting of flowers, that the writer proposes to devote a few papers to the cultivation of our wild flowers, and, further, because the very matter of gathering them from their places of natural growth, and cultivating them in soil and situations best suited to their needs, will call into action those powers of observation, comparison and reflection so much to be desired by every tiller of the soil. In doing this it shall be our endeavor to avoid technical terms as much as possible, to explain fully what is meant by those that it seems necessary to use, and yet so fully and minutely to describe each plant that there need be no trouble in identifying it, and distinguishing it from any other. The name by which it is known to botanists will be given, and likewise the name by which it is commonly called by others. The treatment needed for successful cultivation, so far as known to the writer, will also be given.

(To be continued.)

450 Markham St., Toronto.

D. W. BEADLE.

CARNATIONS in the open ground should be lifted toward the end of the month, leaving a ball of earth on the roots. In potting, this ball should be reduced to fit the pot by means of a pointed stick. Try to retain all roots. Firm good soil in between the ball of earth and the pot. Water the plants well and set them in the shade for a week, sprinkling them frequently. Afterwards gradually accustom them to more light and sun.—Am. Gardening.

ANEMONE FLOWERED CHRYSANTHEMUM.



PROMINENT flower in the month of November is the chrysanthemum. So enduring of frost is it that when other flowers have hidden their glories, and even the giants of the forest have mostly shed their foliage, this cheery friend beams upon us in robes of brightest hues. Indeed, one writer claims for this flower that there is not a single brilliant hue decking the landscape in autumn, but is more than equalled by her gorgeous colors, in her numerous varieties.

If wanted for indoor blooming, they should be potted in September. Still, with care, ordinary success may be had by lifting them even now, if they have been fortunate enough to escape the frost.

The anemone-flowered chrysanthemum is quite distinct. It has three or four beautiful bright petals and a centre formed of small tubular star-like florets of a different color, which gives them a very pleasing appearance.



FIG. 93.—ANEMONE FLOWERED CHRYSANTHEMUM.

KEEPING AWAY FROST.—A writer in the *American Agriculturist* gives a good plan for preventing the freezing of plants in the cellar during the coldest nights in winter. He places a lighted central draft lamp on the cellar floor. Since he has tried this experiment he has found it unnecessary to bank up the house to keep out the cold. The heat from this lamp was very great, and could be used to protect house plants in the windows, or those stored for the winter in the cellar or cold-pit. A lamp of the same pattern may also be attached to the window box, so as to give bottom heat for starting early flowers and vegetable seeds.

RAMBLING NOTES (*Continued*).

THE Downing Everbearing mulberry has evidently come to stay; at least, it has proved to be perfectly hardy in this section, and for the last two seasons yielded a nice crop of fair-sized bluish-black, sprightly flavored berries. Besides its fruiting qualities it has a pretty ornamental appearance. Have re-considered my decision of cutting down the Russian variety, as stated in a previous article, and now purpose utilizing the stock by grafting or budding the former upon it, otherwise the latter is not worth the space it occupies. Hardy Catalpa may be all that is claimed for it in its western sphere, but with us the name *hardy* somehow seems to read like a misnomer. The original tree received from the Fruit Growers' Association, put forth an effort to sustain its reputation, but eventually succumbed to our rigorous climate. A young shoot, however, started from the base of the parent stem, and by careful nursing may in the near future become a valuable addition to our arboreal collection. Liquid Amber with its fine rounded top, glossy green leaves, and wealth of purplish crimson foliage in autumn, make it very desirable for shade and ornamentation. Salisburia (Maiden Hair tree), though for a time looked upon as quite an acquisition, apparently lacks the essential hardiness to show off its unique fern-like garb to advantage. The Double Scarlet Thorn when in bloom, brings vividly before us the oft remembered hedge, that adorns the private grounds and public highways of Great Britain. The stately elm, "Birks of Aberfeldy," red and sugar maple, horse chestnut, basswood, walnut, butternut, mountain ash, white and scarlet

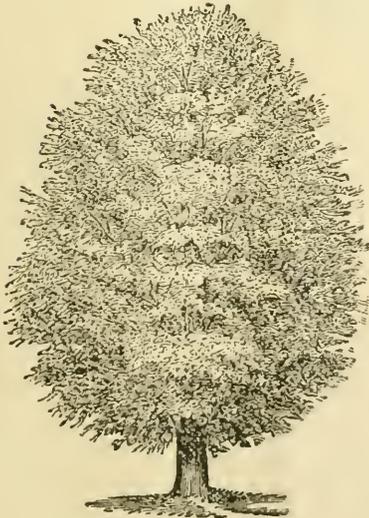


FIG. 94.—SUGAR MAPLE.

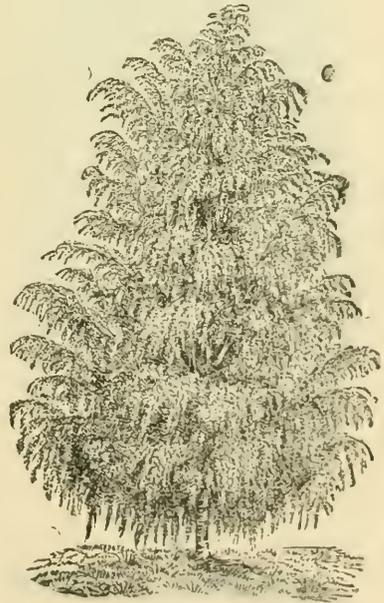


FIG. 95.—CUT-LEAVED WEEPING BIRCH.

oaks, etc., have a place in our assortment. Each have their admirers, and justly too. But above and beyond them all there is no single tree in the writer's estimation can compare with the hardy, graceful, drooping form, of the Cut Leaved Weeping Birch. As this, very general favorite, received its due mead of praise from the veteran horticulturists, Simon Roy and P. E. Bucke, in former pages

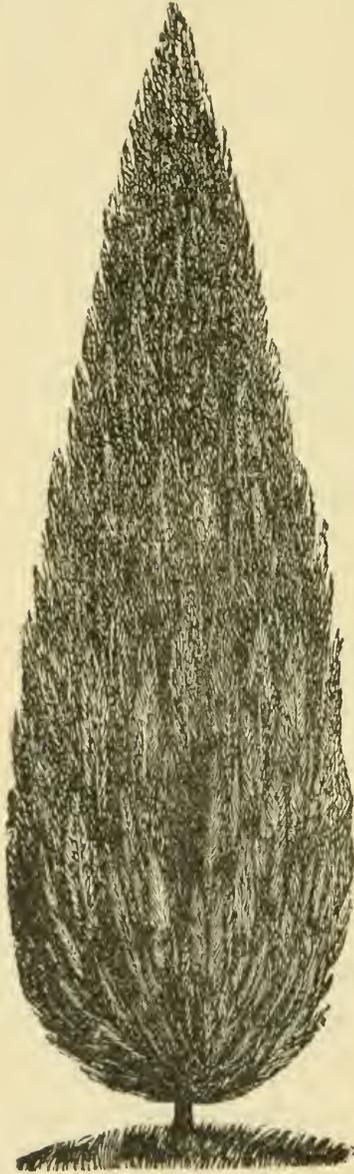


FIG. 96. — IRISH JUNIPER.

of this journal, any further comments by me upon the same would be superfluous, saving perhaps one, and that is, that there is surely good grounds for entertaining the hope that ere long this useful and elegant tree will find a place on every well kept lawn, seeing the first cost would rarely exceed the price of half a dozen imported Havanas. Amongst the "departed," which found our soil and rigid winter clime uncongenial to their longevity, may be mentioned the Purple Leaved Beech, Golden Chain (*Laburnum*), Double White Thorn, and Kilmarnock Weeping Willow. Some of these may be replaced for another trial. Nothing adds more to the comfort and beauty of our rural homes, than a select variety of evergreens. A row of Norway spruces, planted so as to form a pleasing and effective wind break along three out of the four points of a fruit enclosure, leaving the southern exposure free, to fan at will the genial health-giving rays of summer, lends enchantment to the aspect, and adds considerably to the profit side of the ledger. Balsam fir, red cedar, hemlock, Scotch and Austrian pine, dovetailed with dwarf, pyramidalis, Siberian and heath-leaved arbor vites, including mountain pine and Irish junipers, in all their varied hues, impart in an eminent degree a truly fascinating effect to the surroundings.

No doubt this amateur sketch would partly fail in its object if a few of the matchless gems amongst our deciduous shrubs were denied a setting in Nature's floral casket. Who that has once seen them in their beauty of bud and blossom would willingly be without *Prunus Triloba*, *Weigela Rosea*, *Deutzia*

Crenata, Rose of Sharon, Scarlet Quince, White Fringe, Garland Syringa, High Bush Cranberry, Golden Bell (forsythia), Hydrangea Paniculata, Florida Cornus (dogwood), Tartarian Honeysuckle, Snow Ball, Laburnum, Flowering Almond, currants, white and purple Lilac, van Houtti, callosa, and plum leaved spirea, or the equally charming variegated wrigela, Prunus Pisardii, Golden Leaved Elder, Purple Fringe and Berberry, Red Osier Dogwood, green branched globe flower, and the popular Christmas holly (mahonia), all of which are hardy here and extremely pretty during their blooming season. Carolina allspice, Daphne mezereum, and purple leaved filbert showed a feeble constitution from their first planting out, and at date of writing are numbered with some other lovely companions (all) faded and gone. Climbers are beginning to receive the attention which their grateful shade and free flowering habits deserve. Jackman's and Henry's clematis climbing on either side of a rustic archway and blending their exquisite colors of white and violet purple; clematis coccinea and Chinese blue wisteria gracefully intertwining themselves along the porch in front; Cobea Scandens and the Evening Glory (moonflower), spreading o'er a

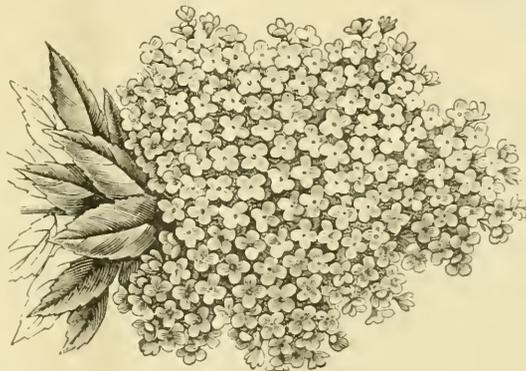


FIG. 97.—HYDRANGEA.

trellised gateway into the yard; golden leaved, scarlet trumpet and monthly fragrant honeysuckles trained around the south and west windows, are each, throughout their blooming periods, a source of delight to the household, and objects of general admiration to the passing crowd. Virgin's Bower, Southern Blue Bells, Cinnamon, and Madeira vines, not tried long enough to have their vitality thoroughly tested in this locality. Baltimore Belle and Prairie Queen climbing roses show up well and full of promise for another year. The former a little tender and requires protection. The old Virginia Creeper's rampant growth, gorgeous fall tints and rapid natural covering for either new or old unsightly buildings, is finding a formidable rival in the smaller leaved Veitchii Ampelopsis. The Trumpet Flower and Dutchman's Pipe will find a spot prepared for them next season. Thus, for a trifling expense, one can have his home looking gay from early spring until "chill November's surly blasts make fields and forests bare."

Russeldale, Ont.

(To be continued.)

J. D. STEWART.

❖ The Kitchen Garden. ❖

MARKETING VEGETABLES.



GOMPETITION in market gardening near large centres of population makes it absolutely necessary for one engaging in it to adopt the most approved methods, and to be wide awake and progressive in all of the improvements. Enormous truck farms are now established in different parts of the country, and these supply the markets with the finest vegetables grown in the world. The profits from these farms have been large in the past, and many others have entered into the

industry. The competition has thus become more intense, and the most progressive farming and intensive cultivation of the soil are demanded.

The truck farmers probably represent the forward advance of farming in this country. Their methods are based more thoroughly upon sound, enlightened business principles; their cultivation of the soil is both practical and scientific; their idea is to get the greatest amount of the best crops from each square foot of the ground, and they feed the soil liberally, expecting great profits in return. Many general farmers in other parts of the country draw their inspiration from the market gardeners. New plants are tested and improved by these, and they are always in the line of progressiveness.

But they do not stop with good cultivation. They carry their same principles into their marketing. They watch the markets to get the best results, and they know when and where to send their produce. The packing and marketing of their vegetables are just as important to them as the sowing of the seed. They realize the importance of well-packed, nicely cleaned and fresh-looking vegetables. Many farmers who send produce to the market neglect these essentials. The external appearance do not bother them, and their finest goods often find poor sale.

The marked improvement in recent years in preparing berries and vegetables for market makes it essential that one should spend time and thought on this part of the work. The farmer who still clings to the shiftless method of sending vegetables to the market unwashed and packed in any cheap thing, cannot expect to compete successfully with others. Every kind of vegetable now is washed, graded and packed carefully before leaving the truck farm. They are brought direct from the field to the packing-house, where experts handle them carefully.

Turnips, potatoes and other roots are washed and cleansed until their skins shine. The turnips are trimmed with knives and their tops cut evenly. Then they are graded and packed in their appropriate boxes or barrels. Green, crisp asparagus is evenly cut, packed, tied, and then placed in their boxes so that they will keep and always look fresh. Celery is trimmed, cut, washed and picked in nice, large bunches, so that it looks fit for the table without any further handling. Some of the vegetables are even tied in bunches with colored cord to give a better appearance to them. All of this washing, packing and care, proves profitable, and in some cases it enhances the value of the vegetables almost double. Everything sent to market from the garden must either be counted, measured, graded, sorted, trimmed, washed and polished until they have a most presentable appearance. This part of the work is generally neglected, but is a most important one.—Albany Journal.

PACKING VEGETABLES.



R. E. P. KERBY, of Massachusetts, writing in *American Garden*, advises packing tomatoes in boxes, the tops being nicely faced. His plan is knock off the bottom, set the box on a level surface, and then lay the fruit in the box, smooth side down. After placing two layers thus, the remainder are thrown in promiscuously and the bottom then nailed on. The red tomatoes he finds most salable. The Boston market is ten days earlier than any other. It is not a smooth sort, and, therefore, it is not favored when the Emery, Livingston's Perfection and Dwarf Champion come into the market.

In celery the Paris Golden is selected as the best early variety, and the Boston Market as the best late variety. This latter is less liable to blight, if allowed to perfect its growth late in the season. The celery is sold in long barrel boxes, holding three dozen bunches.

Of melons the most popular sweet variety is the Arlington Nutmeg, which has a green flesh, but of late years this variety spotted badly except on new soils. The American Gem is less liable to spot and is now grown in a limited quantity it is luscious in quality with salmon colored flesh, but is not yet widely known. The melons are sold in both bushel barrels and boxes, the former being the most popular, "eighteen to the bushel box" gives some idea of the popular size for melons in this market.

Asparagus is done up in bunches of one pound each, and exposed for sale in bushel boxes. The less white found in a bunch and the larger the individual sprouts, the better the price that can be obtained.

❖ The Apiary ❖

THE MOST IMPROVED KIND OF HIVES.

What kind of hives would you recommend for a beginner in bee-keeping?—See *Question Budget*.



THE subject of hives has received a great deal of attention since the advent of the movable frame hive. We all know how the straw skep and the box hive were used for many years, and in the fall the bees were smothered by brimstoning the comb cut from the hive, and eaten either in the comb or the comb was crushed and the honey strained from the wax, hence the term *strained honey*.

The Rev. L. L. Langstock was one of the first who thought of putting the combs in the hive and having them attached to movable frames instead of the walls of the hive. This work led to great progress in the bee-keeping world, such as the honey extractor and extracted honey, honey in sections instead of broken, leaky pieces of comb, difficult to handle and market. It also led to some disadvantages. It would almost appear to be treason to say that the invention of the movable frame hive led to disadvantages, but such is, nevertheless, the case.

It has led those too greedy and those without experience, those careless and those having not sufficient time, to make too much honey from the bees, and as a result the mortality in wintering has been much greater than it would have been if the old box hive were still used. In other words, what has proved to be a great blessing and benefit to the careful and advanced bee-keeper, has been a detriment to the careless and badly informed. To impress this matter still more upon our minds, let us put the case in this way: If we advance in the direction of using better hives we must advance in the direction of being better informed and taking more care of our bees. The two must go hand in hand.

As to what is the best hive to use, the question has not the importance that many a beginner would imagine, and not the importance that inventors and supply dealers would often lead us to believe. Nearly every bee-keeper of any extent has invented a hive. I am no exception. But the longer we stick to the bee business the more likely we are to disregard our own ideas and fall back upon some standard already in use. Locality, management, experience, and personal adaptation has much more to do with success in bee-keeping than the hive—as long as it is a hive within reason.

Perhaps the latest invention in the direction of a hive is the one in which the brood chamber can be divided in two, horizontally; that is, it consists of two stories, half the depth of the Langstock frame, and the brood chamber can, therefore, be manipulated to a greater extent than formerly. The hive, although for some years on the market, is meeting with but poor headway. True, it has its warm advocates, but they are few. The advantages to men of experience are

fewer than the disadvantages. To those not having experience, no one need hesitate to condemn such a hive; the chances for blundering are too great, and the box hive would be far better. The eight-frame Langstock hive—which is not patented—is used more generally throughout America than any other; in fact, it would be safe to estimate that eighty out of one hundred are of this design. Other hives of about the same capacity are probably just as good, as far as results in honey production go, but supplies for this hive are more easily purchased, and when the time comes that these hives are to be sold (that time, however distant, is almost sure to come) they can be sold more readily in this hive than any other.

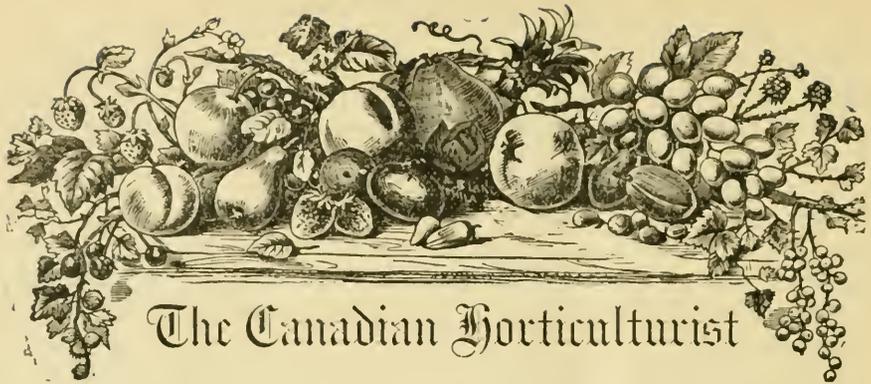
An old and successful bee-keeper, who has tried many hives, and who has a hive of his own design in the majority, stated to me, "After all my experimentation, I confess with regret that Father Langstock struck it just about right when he made the first movable frame hive." Above all, do not get up an odd sized frame of your own if you continue in the business. You will surely regret it. Take, at least, some hive that is somewhat generally used. The chaff hive may be sufficient protection for winter; but a severe winter may come when it is not. A single-walled hive is cheaper, and if outside wintering is desired they can be put in large boxes and packing placed between.

Brantford, Ont.

R. F. HOLTERMAN.

FERTILIZERS FOR ORCHARDS.—The Michigan Experiment Station strongly recommends unleached ashes for apple orchards, to be for several years the exclusive application; and in addition to this on light soils twenty loads of rotted stable manure, and in other cases fifty pounds of nitrate of soda and two hundred pounds of fine ground bone. In most instances ashes have proved highly beneficial to orchards, but discrimination should be made with varying soils, as in some cases it has greatly increased growth, while in others it has produced no sensible effect. The above authority, in recommending 50 or 100 pounds of nitrate of soda, and 100 or 200 pounds of muriate of potash and 400 pounds of ground bone, regarded 50 to 100 bushels of wood ashes as better to take their place, and would supply at least one-half the phosphoric acid. The only objection we would make to this prescription would be in strongly modifying the substances and their quantities, according to variations in the nature or composition of the soil, to be determined by careful measured trials.

PACKING APPLES FOR MARKET.—I use a table eight feet long with side boards six inches high, that will hold two barrels of apples. Sort them into two grades at least. For the first grade set two tiers of smooth, good-colored, medium-sized apples, and fill up the barrel with apples that will run as good or better. Shake them well, level off the end, press the head in so tight that there is no chance for an apple to move, and after the head is nailed turn the barrel upside down and put your name on it as guarantee of a No. 1 apple, to be sold for what the buyer is willing to give.—NELSON COX, at Farmers' Institute in Ohio.



SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

NOTES AND COMMENTS.

THE EATON GRAPE.—According to a writer in the Rural New Yorker, the Eaton grape has little to recommend it except its size. In quality it could scarcely be distinguished from the Concord.

THE CROSBY PEACH.—We are in receipt of a letter from Mr. H. E. VanDeman, Chief of the Division of Pomology of the United States, criticising the colored plate of the Crosby peach, which appeared in our October number, as being overdrawn with respect to the size of the peach. He says that Mr. Hale had a lot of the Crosby peaches at Washington at the time of the last meeting of American Pomological Society there, and that none of them were over $2\frac{1}{4}$ inches, in diameter.

We are particularly desirous of giving our readers a correct description of fruits through this journal, for our work is purely disinterested, having no connection whatever with any nursery concern, either in Canada or the United States. Our only object is to work for the benefit of fruit growers in Ontario. We are, therefore, glad to receive this criticism from Mr. VanDeman, and shall welcome similar criticisms from any of our readers, should anything appear in our pages which seems to over-estimate the value of any fruit, new or old.

THE FINER VARIETIES OF GRAPES.—The public is slow to appreciate the higher classes of grapes. The experience of a writer in the Rural New Yorker is largely verified in our own experience in Canada. Here is the clipping referred to:

“Have you any Agawan, Lindley or Wilder grapes on hand?” I said to a New York commission man a few days ago. “None to-day,” said he, “and I am heartily glad of it. The general grape-buying public and especially the dealers who buy of us, don't know anything about these fine grapes and it is very hard work to sell them. They look them over, shake their heads and then buy Concord, because they know what they are.

Once in a while I find a man who knows what these fine grapes are worth and who has a trade for them and he buys them readily, but, as a rule, they are a drag on trade and it is hard to get more for them than for the Concord.'"

Still we are confident that a trade can be worked up in these high-class grapes, and that, in the near future, these varieties will bring the grower more money per acre than such heavy bearers as the Concord. This year Concord is only bringing from 1, 1½ c. to 2 c. As soon as the general public begins to appreciate the difference between the Concord and the Rogers' grapes, there is no doubt that these will be in great demand and that the difference in their selling price will far more than counterbalance their lack in productiveness. There is a certain amount of satisfaction in catering for the trade of that class of people who appreciate first-class stock, and are willing to pay for it.

POSSIBILITIES OF APPLE CULTURE.—A writer in the Rural New Yorker has been much encouraged over apple culture by a visit to an orchard on the Hudson River, belonging to Mr. W. H. Hart. The varieties grown are Baldwin, Ben Davis, Spy, Peck's Pleasant, Jonathan, Russets, Greening, etc. The trees were loaded to the ground, many of the Baldwins, 25 years planted, are carrying eight or ten barrels apiece. In places the apples hang in ropes, and on a space of two feet, he counted 17 apples. Some beautiful Ben Davis trees, not over ten feet high, with trunk only six inches in diameter, are literally covered with bright red fruit, three barrels to a tree. This is not due to wonderfully fertile soil. The land would not grow corn enough to pay for the labor, being mostly rough broken hillside, not worth \$25 an acre for farming purposes. The secret is in a liberal feeding of the trees year after year. They are annually fed with muriate of potash, ground bone and stable manure. The owner attributes the high color and firm texture of his apples to the use of potash and bone, believing that farm manure tends to produce growth of wood and loose texture, and inferior color in the fruit.

THE STANDARD APPLE BARREL.—The standard apple barrel of Ontario is said to measure 17 inches diameter of head, and 27 inches from croe to croe of staves. In Michigan the standard is, staves 27 inches long and head 16½ inches in diameter, and this is the same as the standard flour barrel of Michigan. The Fruit and Produce Trade Association, of New York City, have held a meeting and have adopted the Michigan standard barrel, or American flour barrel size. Some Western apple buyers have been resolving not to purchase apples unless packed in barrels measuring as follows: staves 28 inches long, head 17 inches in diameter, circumference at bilge 65 inches, which is really the same as the Canadian standard. It is unfortunate that a uniform size has not been adopted by all the States, and the Provinces of Ontario. There is, however, one advantage to us in Ontario, in choosing the larger barrel. Our apples bring in the foreign markets 25 to 50 cents more, partly on this

very account, and find more ready sale than those in the smaller barrels. The importance of keeping to some standard is evident, when we try to make contracts with buyers at a distance. This is almost impossible unless there is a standard size which is known to both parties.

THE LATE P. C. DEMPSEY.—In reply to a letter of condolence, in behalf of our Association, to the family of the deceased, we have received the following letter from his son, Mr. Walter Dempsey :

“*My Dear Sir,*—In your letter of the 2nd of September, you ask for some notes concerning my father’s death. This is a hard task for me, the loss is so great, and often seems more than I can endure. He was more than a father to me, leading me on in the study of horticulture. He was always a great student of that subject himself, always spending his leisure hours in studying either books upon it, or his Bible. There are five hybrid pears and four hybrid apples fruiting for the first time this year. These he was watching very closely, as long as he was able to go to see them, and then he had me bring samples that he might examine them, often remarking that he would like to live to see them come to maturity.

“He complained a good deal all winter. Last March his feet began to fail him. In June the trouble settled in his right foot, and, in the latter part of July, gangrene set in, causing death. He bore his intense pain cheerfully, quoting favorite promises of the Master. The day before he died he seemed more cheerful than usual and he walked out, with the aid of his crutches, to admire some flowers, and went to see one of his hybrid pear trees. He had a good night’s rest, and rose between five and six the next morning ; but, a few minutes after six o’clock, he was gone. I am very grateful to the Directors, and to yourself, for the sympathy expressed to me and mine.

“Yours truly, WALTER H. DEMPSEY.”

TUBEROUS BEGONIAS.—Mary Frost, a Canadian writer in the *Rural New Yorker* talks of flowering begonias. Sandy soil, she says, is best suited to them. Although the tuberous kinds have large flowers and are very showy, the older flowering kinds are still much grown and are very useful for variety. Begonias are charming in foliage, colors and flowers, and they are as easily cultivated as geraniums. Those bedded out during the summer should be potted and brought in before the frost comes, or, if they have been in pots during the summer, they need to be re-potted in fresh soil and well cut back. They will then soon start into bloom. *Begonia rubra* is one of the most desirable. *Argentea*, *metallica*, *Saundersoni*, and others, are free flowering, and have very fine foliage. The earth in the pots should not be left to get dry, for, if the soil dries out, the plants will not look well again. With good drainage in the bottom of the pots, they cannot have too much water. Liquid manure will help their bloom.

❖ Question Drawer. ❖

CLARIFIED CIDER.

195. SIR,—Would you please tell me through the *CANADIAN HORTICULTURIST* how cider is prepared to remain sweet. It is called clarified cider and comes here from Ontario,
I. N. BURT, *Keswick Ridge, N. B.*

Had our correspondent given us the name of the manufacturer of the article referred to, we might answer him more fully. Cider is often kept sweet by the addition of salicylic acid, which substance, however, is injurious to the health. It is also sometimes bottled in the same way that fruit is canned and thus kept from fermentation. Clarified cider, as usually sold in our markets, is not perfectly sweet. It has undergone partial fermentation until about one-third or one-half of the natural sugar in the cider is converted into alcohol, as shown by the use of a hydrometer. It should then be clarified either by fermentation or by the use of isinglass. In the latter case it is carefully racked from the sediment into clean casks and isinglass added to clarify it. The solid matter in the solution adheres to the latter substance. When it is clear, it is again racked from the precipitated isinglass into clean casks and tightly bunged. Some advise bottling the cider the following spring; others say that it should be kept a couple of years before bottling. Half barrels for holding cider suit the grocery trade, and, where bottles are used, the best sizes are pints and quarts.

THE MOON SEED CLIMBER.

196. SIR,—I enclose you a portion of a climbing plant, quite common on my farm. What is its name, and is it poisonous? Two or three cases of poisoning, similar to that from poison ivy, have apparently resulted from handling and cutting it in harvest time.

W., *Grimsby.*

Reply by Prof. Fletcher.

The pretty climber enclosed in your letter is the Moon-seed (*Menispermum Canadense*). The flowers of the male plants are sometimes freely produced, and, together with the elegant foliage, render this climber well worthy of cultivation. I do not know that it is actually poisonous, but the family contains climbing shrubs which are common in the woods of tropical Asia and America, which are noted for their bitter and narcotic qualities.

Jateorhiza palmata, a plant with the habit of Bryony, supplies the well-known drug called "columba-root." *Cissampelos Pareira* gives "Pareira brava." The celebrated berries called "Cocculus Indicus" are the produce of *Anamirta paniculata*.

PLANTING APPLE TREES.

497. SIR,—Please tell me if 20 x 20 feet would be far enough apart to plant apple trees in a small orchard, in this locality, where cold winds prevail in winter.

W. C. C., *Ottawa.*

Unless for very small growing varieties the distance named is too small. Dwarf apples would do well at this distance, but for most of the vigorous growing standards, thirty-five feet each way is none too much. We have some old trees at Grimsby whose branches are interlocking at a distance of forty feet each way.

PRUNING THE BLACK WALNUT.

498. SIR,—When is the best season to prune black walnut trees, three or four years old?

O. T. B., *Kings Court.*

The best time for pruning all deciduous trees for the encouragement of wood growth is between the fall of the leaf and the beginning of the growth in the spring. Pruning during the summer season is a check to the wood growth.

NEW BLACK CURRANT.

499. SIR.—I send you sample of new seedling black currant. Do you think it worth propagation?

THOS. CONOLLY, *Lindsay.*

Could not answer without watching habit of plant. Better send a plant to Experimental Farm, Ottawa, for testing. The quality is very ordinary, and taste bitter.

Question Budget

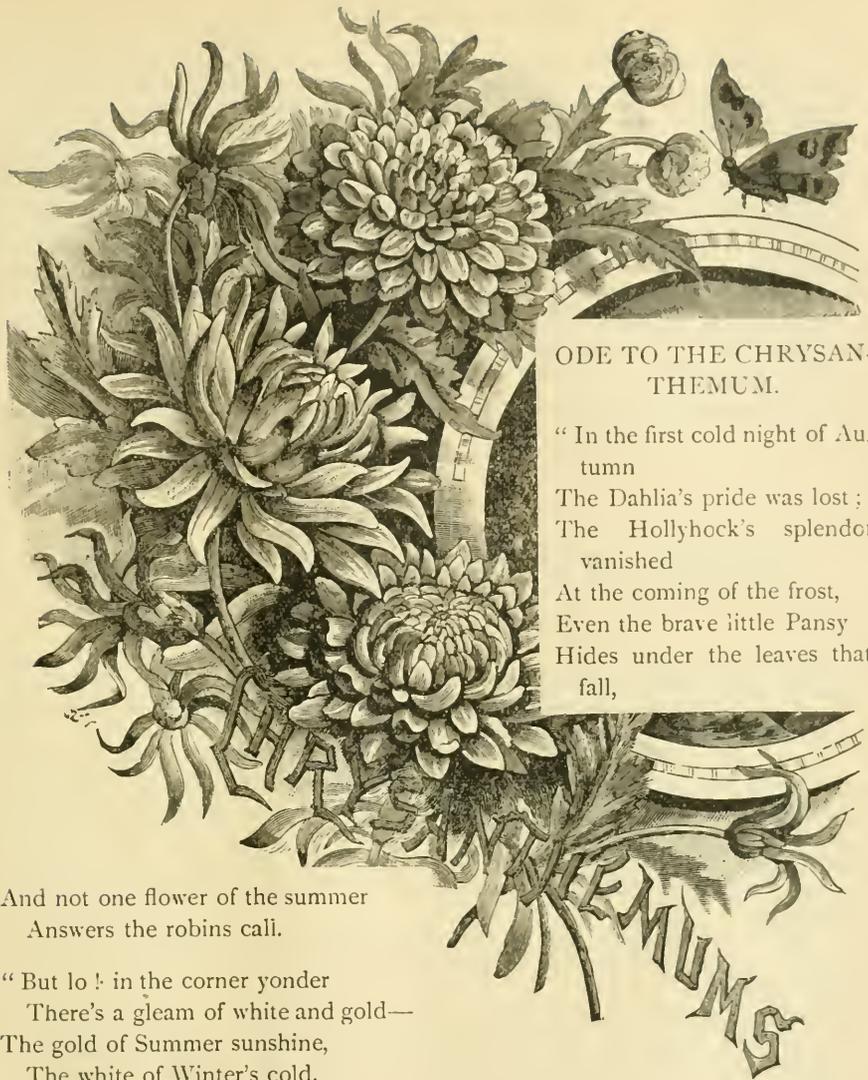
Containing questions for our readers to answer.

7. Can you suggest points, rules and regulations to be observed by the jurors in judging fruits at Chicago? The ordinary methods of judging will not be sufficient where the fruit of all climates appear, and especially where so much will be in competition of the same variety, grown under so many varying circumstances, differing climates, etc. Have you particulars for a scale of points for judging, and what point would you advise to observe specially, and how would you divide the points in the scale?

8. Is the Bangor Blackberry of any value where Snyder will not succeed?

9. Is the one judge system at fairs an advantage of three judges?

10. What package is best for shipping onions?



ODE TO THE CHRYSANTHEMUM.

“ In the first cold night of Autumn
The Dahlia's pride was lost ;
The Hollyhock's splendor
vanished
At the coming of the frost,
Even the brave little Pansy
Hides under the leaves that
fall,

And not one flower of the summer
Answers the robins call.

“ But lo ! in the corner yonder
There's a gleam of white and gold—
The gold of Summer sunshine,
The white of Winter's cold.

And, laden with spicy odors,
The Autumn breezes come
From the nooks and corners brightened
By the brave Chrysanthemum.

“ Hail to thee ! beautiful flower,
With royal and dauntless mien
Facing the frosts of Winter—
I crown thee Autumn's queen.
With your gleam of late sweet sunshine
You brighten the closing year,
And keep us thinking of Summer
Till the Winter we dread is here.”

—E. E. REXFORD.

OUR APPLE MARKET.

There has been little during the past month to encourage the export trade in apples. Such quantities of fall apples and immature, uncolored winter fruit have been flooding the English market that prices there have declined almost below precedent. In one week, ending October 15th, about 45,000 barrels arrived in Liverpool, and the total to all points, up to October 21st was over 349,000 barrels. The result has been a very acute depression in prices, some varieties bringing very little beyond the freight. Kings hold almost the first place reaching up to \$4 and \$5 per barrel, even during the greatest depression, when even Baldwins were selling away down at \$2.50 and \$3.00. Since October 21st the cables indicate an advance and a sharp demand for our best winter fruit. The quantity likely to go forward is very small, so that much better prices may be looked for. A cable received on the 24th ult. from James Adams, Son & Co., Liverpool, reads as follows, Market better; more inquiry. Greenings \$3.25 to \$3.50; Kings \$5.25 to \$6; Colverts \$1.25 to \$2.25. The prospects are favorable for good winters.

In Montreal first-class winter apples are now commanding \$2 75 per barrel, and in Toronto \$2.50. It is just possible that our own markets may so advance as to yield better returns to the shipper than foreign ones.

PUBLIC MEETING OF THE Ontario Fruit Growers at Brantford.

THE ANNUAL WINTER MEETING

OF THE ONTARIO FRUIT GROWERS' ASSOCIATION will be held in the City of Brantford, beginning on Tuesday evening, Dec. 6th, at 8 o'clock, and continuing the two following days.

The first meeting will be a public gathering of Ladies and Gentlemen in the Music Hall of the Institute for the Blind, when the Mayor of the City will give an address of welcome, the President of our Association will deliver his Annual Address, to be followed with addresses by Rev. A. H. Porter, A. McDallan, Principal Dymond and others. The evening will be enlivened by an interesting programme of music by the Students and Teachers of the Institute.

The day Meetings will be held in the Court room, beginning at 10 a.m. and 2 p.m., and will be given to papers and discussions on topics connected with fruit growing.

On Wednesday evening the 7th of Dec., the meeting will be held in the Temperance Hall, when Prof. J. H. Panton of the O.A.C. Guelph, will give a most profitable lecture on "Our Insect Foes," illustrated by the stereopticon; questions and discussion if the audience so desire.

Mr. Fred Mitchell of Inverkip, will also give a paper on the Tuberos Begonia.

The election of officers will take place at 9.30 a.m. on Thursday, the 8th, after which the discussion of Horticultural topics will be continued.

A list of papers and subjects is now being prepared by the secretary, and any one may contribute to the same.

All the meetings are free, and should bring together a large number of townspeople, as well as of farmers, interested in the garden or the orchard.

Interesting samples of fruits, or implements useful to the fruit grower will be received for exhibition at the Court room. The headquarters of the Directors will be at the Kirby House.

L. WOOLVERTON, Secretary.



WHEATLAND.

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Canadian Horticulturist

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THE WHEATLAND PEACH.

THE readers of our journal are not to suppose that every fruit pictured and described in this journal is commended as being valuable for the commercial peach orchard. The object is to make known to all Canadian growers those new or old varieties which appear desirable, and which need more general testing in order to know their adaptability to the various parts of our country.

The Wheatland is a new peach which frequently comes under notice at fairs, and ripens at a time when a good yellow flesh peach is needed, just after the Early Crawford.

The variety originated near Rochester, N.Y., with Mr. D. S. Rogers. He grows a great number of varieties, but of them all he considers the Wheatland the finest. The following is a description of the Wheatland peach: Fruit is large, roundish; skin golden yellow, shaded with crimson on the sunny side; flesh yellow, firm, juicy, sweet, and of fine quality; tree vigorous and healthy.

Our colored plate of this peach is rather too highly colored for the average samples. Its behaviour, too, does not seem to be uniform in all localities, for Mr. A. M. Smith, of St. Catharines, says he has trees six years planted that have never yielded him a half-dozen peaches, and he considers it a very poor bearer.

Mr. E. McArdle, a peach grower in St. Catharines, writes us as follows with reference to the Wheatland peach: "My own experience with the Wheatland is very limited, but others tell me that this variety is a very shy bearer. We planted very few of them, only twenty-five Wheatland in an orchard of two thousand trees. I consider the peach a very fine one in appearance, and of good quality, although not very highly colored." We shall be pleased to receive for publication the experience of other peach growers.

AMONG THE FRUIT GROWERS OF NEW YORK STATE.



CREDIT is due to Professor L. H. Bailey, of Cornell University, for his persevering industry in compiling useful books on horticulture for fruit growers. The bulletins issued by the Station under his direction are all got out in a most unique, attractive fashion. The Professor has lately been making a tour among the fruit growers of Western New York, and his "Notes of Travel," which appear in the *Garden and Forest*, are of much interest to us in Canada.

He speaks of an immense Niagara vineyard at Romulus, N.Y., of 590 acres, divided into three parts, from one of which seventy tons of grapes was expected this season, and from another 140 tons. When the vineyards are eight years planted, the yield is calculated to reach from two to three thousand tons annually. Only a small portion of this will be marketed as green fruit; the greater part of it will be made up into grape juice, for which there is a growing demand. The process of making this article is as follows: Grind the grapes coarsely, taking care not to crush the seeds. This is done in the afternoon. Place the material in tubs. Next morning filter through paper and heat nearly to the boiling point, remove the scum. Filter again, heat nearly to the boiling point, and bottle. These immense vineyards are trained on the Kniffen system, and the tying is mostly all done by women.

The great fruit region of New York State begins near Geneva and stretches away to Niagara Falls and Lake Ontario on the north-west, and to Chautauqua County on the south-west. Orcharding is the dominant industry in nearly all this portion of the country.

Professor Bailey speaks of an immense plum orchard near Geneva belonging to the Maxwell Bros. It covers 85 acres, and every tree was carrying a bountiful crop at the time of his visit. The orchard was kept scrupulously clean. The tops are started at four or five feet from the ground. There are about two dozen varieties in the orchard, of which the most profitable are, Reine Claude, Purple Egg, Fields (often called Early Bradshaw), and Bradshaw. On this same fruit farm there are 80 acres of quinces of Orange and Rea's Mammoth, but, of the two, the Orange is preferred. In another place, this same farm has a block

of quinces of 80 acres, and ten acres of sour cherries, chiefly the English Morello and the Montmorency Ordinaire ; the latter being the popular market cherry of this region of country.

One paragraph of Mr. Bailey's shows us how wide-awake the fruit growers of New York State are to their business, and the importance of spraying and cultivation, in producing the best quality of fruit. "All these orchards of one hundred and fifty acres, are carefully sprayed for insects and fungi. A hand field force pump, carried upon a tank in a wagon and Peerless nozzles, are used exclusively. Plums are sprayed two or three times for the septoria, or shot-hole fungus, which causes the premature falling of the foliage, but for curculio the sheets are still used. Plums are treated with the ammoniacal carbonate of copper. The knot is fought industriously. Twice during the summer every tree is carefully examined by two men, who walk up either side of the row. This examination, together with the search which is made in winter, has thus far kept the knot in check ; but all growers in this region are apprehensive of this disease, and the new law for its extermination is being enforced with vigor. Cherries are also sprayed with the copper carbonate to combat the leaf blight, a disease which causes the leaves to fall before the fruit matures. The best fruit-raisers recognize the fact that abundant and healthy foliage is essential to a good crop of fruit. Quinces and apples are sprayed twice with Bordeaux mixture, about a week after the blossoms fall, and again two weeks later. This treatment is aimed at the leaf blight on the quince and the scab-fungus on the apple. For both quinces and apples, Paris green is mixed with the fungicide for the purpose of killing the codling moth larvæ. This is a fair sample of the attitude of our New York fruit growers toward spraying. The practice has taken an assured place among the operations of the orchard, and I imagine that if either spraying or cultivation had to be given up for any year, most growers would discontinue the cultivation."

MARKETING UNGRADED FRUIT.—"I brought three bushels of Bartlett pears to town to-day, and I could not get more than 40 cents a bushel. That price doesn't pay, but I had to let them go." This is what a farmer said to us one day. We turned to look at the fruit. He had been paid all it was worth. The fruit was brought in large baskets holding one and one-half bushels, and was evidently just as it came from the tree—a most unattractive looking lot of fruit. Had this man picked out only two bushels of the finest fruit, rejecting every irregular-shaped and all small and worm-eaten specimens, he would have had no difficulty in getting \$1 a bushel and would thus have received 80 cents more for two bushels than he got for three, and had a bushel of inferior pears left. These again assorted would have produced a half bushel of fair pears : the remainder he should have given to the pigs, or used for drying.—Orange County Farmer.

GOOSEBERRY CULTURE.



THE most important thing connected with gooseberry culture is judicious pruning. This work, which cannot be neglected, is done from late autumn to early winter. Many of the vigorous-growing shoots and branches are annually removed, and only a moderate supply of young growing wood is left. The bush is made to assume a cup-shaped top, with slightly drooping branches. The cultivation and manuring are like that just described for the currant. As far as I have learned, the varieties of gooseberry in cultivation in Great Britain are far more numerous than the varieties of any other small fruit, and the choice of variety appears to depend to a large degree upon locality. For picking green or for preserving when ripe, the Whitesmith, Early Sulphur, and Warrington, appear to be general favorites. Crown Bob, well known in many American gardens, is also a much prized sort, and its large, finely-colored fruit sells well in the market. Other varieties largely grown are Red Rifleman, Golden Drop, Monarch and Lancashire Lad. I believe that Lancashire, one of the northern counties of England, is quite famous for its gooseberries, and usually succeeds in capturing a large number of the prizes offered for this fruit at horticultural exhibitions. Many new varieties were originated in this county, and the names with which they have been heralded to the world are not unlike those used by our own originators. Among some of the best known I find the following: Roaring Lion, Leveller, Napoleon, Red Champagne, etc. Whinham's Industry is also highly regarded, and is thought to be one of the leading sorts.

I can speak less confidently of the yield of an average crop of gooseberries than I could of that of currants. The greater number of varieties in cultivation, and the fact that more skill is required in pruning, are among the reasons why the "average" crop is variable. Good growers are not satisfied with anything less than a crop of 7,000 pounds an acre. The price received for gooseberries varies greatly. Early fruit of choice varieties, raised in sheltered localities, often brings from 15 to 18 cents a pound. But this is exceptional. Under ordinary circumstances, the price received for the first few pickings is 6 or 8 cents a pound. It soon falls, however, a fair average price for the whole crop would be three or four cents a pound.

Gooseberries are bought very largely for canning and preserving, as well as for immediate use as a dessert fruit, or for puddings, tarts, etc. I judge that the expense of raising gooseberries is about the same as that of raising currants—perhaps a little more. It can scarcely fall below \$100 an acre.

Both the currant and gooseberry bushes, especially the latter, are subject to attacks from the currant worm or saw-fly (*Nematus*). In order to check the ravages of this insect, quick lime, lime ashes, or soot, is scattered close around the bushes late in autumn, and dug into the soil. This is said by many to be

an effective remedy. Other growers syringe the bushes with soft soap and soda and water.

Sprinkling with powdered hellebore, or using it in solution, is practised by some, but not nearly so generally as in the United States. Hellebore is regarded just as dangerous a poison as London purple or Paris green, and most growers will not apply it after the fruit is set. When used, the powdered hellebore is generally applied with a soufflet or hand bellows, which useful apparatus costs about seventy-five cents.—WILLIAM R. LAZENBY, in *Country Gentleman*.

POINTS ON BLACKBERRIES.

The main point with blackberries is soil. This, if possible, should be cool, loamy and rich; but I never allow any application of barn manure. Fertilize with soil, rotted chip soil, or whatever will mulch and cool the soil. Our chief danger with blackberries is a dry spell when the berries are approaching maturity. Of the berries now in cultivation my choice for quality is Taylor and Agawam. Erie has not killed back this winter, as it sometimes does; but it is not with me a good cropper of fine berries. Snyder is always reliable, but of good quality. Wilson, Jr., I see, is still spoken of as hardy, but here it is hopelessly a failure. It kills down always, and even in the winter when peach buds escape. Kittatinny is a noble fruit, and I get a crop from a small field by bending down the canes. Wachusett's Thornless does not differ largely from Snyder's and is entirely hardy. Few berries are badly affected by dry weather. On the whole, the key to success is cool, moist soil, not wet. If planted on high land, either mulching must be resorted to or frequent use of the cultivator. The Lucretia Dewberry is tender and must be laid down for winter and covered with leaves. In the spring I lift mine and tie to trellises. It will not pay to plant large fields. The demand for the dewberry, is, however, unlimited, but few persons are willing to incur the labor of cultivating it. The fruit is enormously large, very rich, and two weeks earlier than the high blackberries. It will not ship to a distant market.—E. P. POWELL, in *Fruit Grower's Journal*.

PICKING GRAPES.—To pick and pack grapes for market, wait until the dew is off the vines and the cluster, then cut the stem with a sharp knife or shears, and deposit carefully in the basket, not crowding or heaping them therein, and let them be taken to the packing house, without much exposure to the sun, especially if well ripened, but give thorough ventilation until the next day, with as little handling as possible, and it will then be found that the stems are soft and easily bent, and the grapes still plump, but adhering to the stems more closely than when first gathered. Now they may be carefully packed in the five or ten-pound baskets without danger of crushing or heating, if properly handled. A partial covering with a green leaf not only shows well against the color of the fruit, but has a tendency to keep it brighter and firmer.

HARDY CHERRIES.



THE original home of the cherry is in Asia. The Romans are credited with bringing it to Italy, and thence to England. Our cultivated varieties have arisen from two original forms, the one tall growing, now sprouting (*Prunus avium*) Bird Cherry, the other more shrubby, and throwing up suckers or sprouts. The first of these is the parent of the black and white varieties, more or less sweet, known as Hearts and Bigarreaus. The second is the parent of the red cherries, more or less sour, now known as belonging to the Morello class. Seeds of both of these were brought from Holland and England to New England by the early colonists. The two families have become so intercrossed lately that in many cases it is now impossible to distinguish their descendants. Among other things for which Ireland is noted are its cherry trees of great size. One near Dublin is said to have a circumference of nineteen feet, and a height of eighty five feet. Mr. Gibb, speaking of cherry growing in East Europe, says: "There is a district in Russia

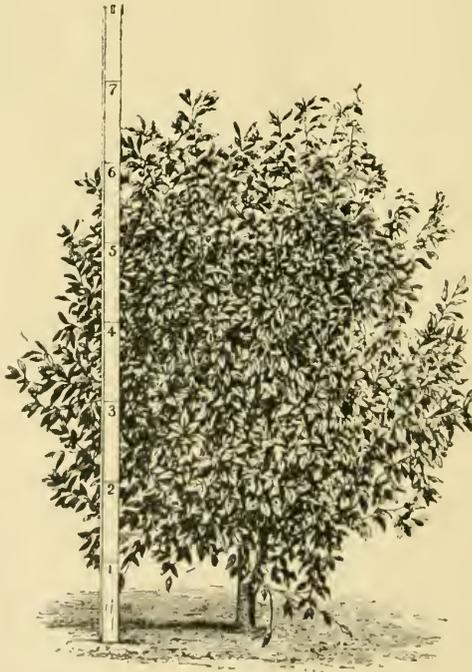


FIG. 98—HARDY CHERRY TREE.
(From a Photograph.)

where cherry growing is the industry of the population. It is in the Province of Vladimir, between Moscow and Nigni-novgorod, where the winter temperature is about three degrees colder than the City of Quebec. The little trees only grow three feet high. So extensively are the cherries cultivated that they are shipped by the carload in all directions, and I am told that entire trains have been loaded with this one product."

The natural distribution of the wild representatives of both classes, the Hearts and Morellos, seems much the same, though the cultivated representatives of the latter, have a much wider distribution in northern and eastern Europe at the present time. This class seems to have had a greater climatic adaptability than their tenderer relatives, the Hearts, and to have gradually worked northward and eastward till they have become common roadside trees in Poland and Central Russia. Before reaching this northern latitude they have become however, specialized forms, differing materially from our west European types. The west European Morellos, which in ordinary or average seasons have been fairly successful south of the forty-third parallel, in the somewhat dry western and middle States, and further north in the moister, though colder, portions of Canada, have, in late years from one cause or another as in the west, injury from winter and black knot, and bark bursting in the east and been dying so rapidly and giving such poor returns, as to compel the thoughtful planter to look for varieties more suited to the vicissitudes of our northern climates.

Within a few years several varieties, as instances, Osteheim and Wragg, have been brought into notice as having special qualifications in the way of hardiness and adaptability to climate. As far as we can learn, these varieties have been "incidental seedlings from east Europe importations, and to have inherited their hardiness from typical varieties of those regions." The result of investigation is that several importations followed, being special and personal selections made by Prof. J. L. Budd, of the Iowa Agricultural College, and Mr. Charles Gibb, of Abbotsford, Que., in 1883-4. These introductions comprise about forty varieties. From five years of personal observation, and from reports received from widely-separated sources, I am lead to believe that we shall find among them many adapted to the more trying districts of Quebec and Ontario, and the milder portions of the North-West. But should our success be only partial with the originals, we can still use them as stepping stones to something better, by means of crossing and selection, and this line of advance is taking a prominent place in the horticultural work of the farm.

JOHN CRAIG.

Experimental Farm, Ottawa.

HATTIE.—Mamma says that my canary's life just hangs by a thread.

SYMPATHETIC CALLER.—My, I do hope it is number 8, you know that is awful strong.

RAISING BLACKBERRIES.



If I were to recommend any variety it would be the Ancient Briton, as preferable in many respects to most of the others. It is a hardy plant, and being of medium growth makes it quite easy to lay it down in the fall, and the fruit, when properly ripened, is all that could be desired in a blackberry. It is an abundant fruiter, and, as it is a little later than some of the other sorts, there is a good demand for them at a good price.

Blackberries need plenty of moisture, and it will not pay to plant them on the top of some dry knoll : for the fruit will not grow to perfection in such dry places, it will be hard and sour. Chose a place where the ground is of good quality and where there is plenty of moisture. Prepare the ground thoroughly by plowing and harrowing before planting, and make the ground mellow, down quite deep, where you set the plants. You cannot be too particular in this respect—remember you are setting them out for profit and not simply to see whether they will grow or not. I think they should be set about four feet apart one way, and eight feet the other way. Keep the ground loose by constant cultivation, and the sooner you can get a good large bush, the sooner you will get fruit, and keeping the ground loose will help to keep it moist.

When the bushes get quite well started) say three years after they have been set), it will be some trouble to remove the old brush. this I do in the following manner : I take a hooked knife, with a handle attached which is about five feet long. The knife is made from a piece of old file welded to a hoe shank in such a way that the knife stands at right angles with the handle. With this kind of a tool I cut the brush out of an acre in eleven hours, and as I cut them I pull them out of the row with the knife, so I can gather them easily. I next hitch a horse to the side of one-half of a two-horse harrow, and drive over the brush with the horse and harrow, which draws them together into piles, and, if in a dry time, the harrow will break the brush so there will not seem to be more than one-half as many of them after being harrowed as before.

After the brush is piled, I hitch the horse to a sled made of wood without any shafts, and with four stakes in it to hold the brush on : with this I haul the brush out of the field. I think the old brush should be taken out as soon as practicable after they have fruited, as it keeps the new shoots from making as good a growth as they otherwise would if left in.

Blackberries, to be grown successfully in cold climates, must be covered in the fall ; if not covered, they should be put close to the ground and fastened there till spring. I commence to put them down by digging the dirt away on one side so as to let the bushes over ; then I stand on the opposite side, and with a fork, which I place in the top of the bush, I commence to push with the fork and at the same time push with my foot against the stump of the bush ;

with this method I have no trouble in getting the bushes down, when they should be covered with enough dirt to keep them on the ground. I do not think it is of much advantage to entirely cover them with dirt, especially when there is plenty of snow. I think, as a general thing, the bushes should be taken out of the ground as soon as the frost is out deep enough to allow of it, as being a late bloomer, there is not much danger from frost. It is better not to stand the bushes erect, when taken up, as those left near the ground bear the nicest berries. Mulching the ground with wild hay, straw, corn stalks, etc., adds greatly to the growth of the plant and size of the berry.—S. CUTLER, of Excelsior, Minn., before Minn. Hort. Soc., 1892.

FRUIT IN VICTORIA COUNTY.

I had the pleasure of visiting the gardens and orchards of Mr. Thos. Beall and Mr. Robson, both well-known horticulturists. Both had good crops of apples, pears and grapes. Mr. Thos. Beall grows the Niagara grape in its highest perfection. Mr. Beall thinks very highly of the Ontario apple. My fear is that bearing such overwhelming crops as I saw on Mr. Beall's trees, and elsewhere in this county, it will not grow to be a large tree. Mr. Beall also greatly prizes the Alexander apple, one of his Alexander trees only about 12 years old, produced 12½ bushels this year, and such apples! A few apples over sixty making a bushel every time. Apples are a good average crop here this year.

Mr. H. Reazin, Inspector of Public schools, has one of the best orchards in the county. He is an enthusiastic orchardist. No plums in this county this year.

The following apples are grown in high perfection in this county by the above named gentlemen :

SUMMER APPLES.—Tetofsky, Yellow Transparent, Duchess, Montreal Peach, Red Astrachan, etc.

FALL APPLES.—SNOW, St. Lawrence, Haas, Wealthy, Gipsy Girl, Alexander, etc.

WINTER APPLES.—Pewaukee, Golden Russet, Pomme Grise, Mann, Salome, Magog Redstreak, Ontario, Scotts Winter, Ben Davis, Baldwin, etc. I think the quality of the apples grown in this county superior to the same kinds grown farther south.

H.

WATERMELON TESTS.—I draw my thumb-nail over the melon, scraping off the thin green skin. If the edges of the skin on each side of the scar are left ragged or granulated, and the rind under the scar is smooth, firm and white, and has something of a glassy appearance, the melon is ripe. But if the edges of the scar are smooth and even, and the thumb nail has dug into the rind in places, and the skin does not come off clean, then the melon is green. You can easily learn on two melons, one ripe, the other green, noting the difference after they have been cut open.—Southern Stockman and Farmer.

FRUIT IN NORTH SIMCOE.



THE past season has been a favorable one for fruit in this section. Strawberries were a very fair crop and of good quality, in fact I never had finer berries than I had this year. The main crop, as regards varieties, were the old reliable Wilson and Crescent. The Haverland, though comparatively new in this section, is a decided success here : yields well and carries its size well to the end of the season. My experience with the Bubach does not lead me to think favorably of it. The fruit is large and of very good quality, but it does not bear half as well as the Haverland : it makes very few runners, so that it propagates very slowly : the fruit stems are very short, so that in seasons like the past one, with frequent heavy showers, the fruit is badly sanded. I think the Williams berry will prove a decided acquisition here. The worst enemy to the strawberry is the rust on the leaves, the Wilson being the most susceptible to it. No remedy has as yet been tried to check it, though I purpose experimenting in this line next year with the Bordeaux mixture, and other solutions of that kind.

Raspberries did well, though not very promising in the early part of the summer, being backward in leafing out, owing, I think, mainly to the severe cold weather in April after the snow was gone. Yet they recruited wonderfully and gave a very good crop, and prices were better than have been for some years. I grow the Cuthbert principally and the soil and climate here seem to suit it well, except that in very severe winter, it kills back a little of the tips.

My experience this year with grapes has not been a happy one, and shows that except with the earliest varieties they are a very uncertain crop in this locality. My vines were well loaded, the fruit (mostly Concords), large, bunches well shouldered ; the berries much larger than those grown further south. But, owing to wet backward weather and lack of sunshine, not more than half of them ripened. The severe frost in the first week of October caught them, and spoiled them. I tried smudging but it was no use.

The apple crop has been a good one and the fruit, as regards quality, probably the best of any section in Ontario. The section known as the Georgian Bay Counties, has been especially favored this year in the apple crop. The crop has been saved in good condition and buying was brisk, the bulk being bought for export and fair prices realized. Considerable fruit has been sent from this section for exhibition at the World's Fair, and when that opens next spring, the fruit from this section will speak for itself. I believe the Georgian Bay Counties produce the best apples in America, if not in the world. 'Tis a big assertion to make, but as Burns said, "Facts are chiefls that winna ding and canna be disputed."

I notice Mr. Allan's article in the November number, and that he says some very trite things concerning the fruit trade. There is more truth than poetry

in what Mr. Allan says. First, as to cultivating, fertilizing and caring for the orchard in order to produce the very best quality. Then the exercise of good judgment and care in picking, packing and shipping, culling carefully, putting up best quality, and at the proper time. I feel certain that if Mr. Allan's advice were acted upon (for he just hits the nail on the head), it would be the "open sesame" to success in the fruit business, and too much cannot be said on the subject.

I shall have something to say on this subject myself in a future number : having intruded sufficiently upon your space for this time, for which. Mr. Editor, you will please excuse me ; and I will close by expressing my gratification at the increased size, efficient conduct and spicy appearance of our reliable little journal.

Craighurst.

G. C. CASTON.

SHIPPERS OF DRIED FRUITS.—Apples should be carefully peeled and cored, then sliced or quartered, placed upon frames and dried in a gentle heat. Gnarly or wormy apples should be thrown aside, or such places carefully cut out. Peaches may be dried either peeled or unpeeled. They sell best if cut in halves. Apples and peaches, to bring best prices, must be bright and light colored ; to secure this, they must be dried in a dry air. The atmosphere is often so charged with moisture, even in sunshine, that it absorbs more moisture very slowly. Such an atmosphere is very unfavorable to the drying of fruit, the juice evaporating so slowly that it decays and darkens the color. Those who cannot construct drying houses should prepare and dry their fruit upon days when the air is very dry only, out of doors, or else indoors in a gentle fire heat and current of air. Apples on strings are objectionable. If dried on strings these should be removed before the apples are packed.—M. Kiely's Shipper's Guide.

TOP-DRESSING ORCHARDS.—The published reports of the proceedings of the Illinois Horticultural Society give the statement of H. Dunlap of his success in top-dressing bearing fruit trees. He top-dressed two rows of cherry trees, and at the same time left some that were not treated. On the top-dressed trees the shoots grew from 12 to 18 inches, while on those not top-dressed the growth was only 3 to 6 inches. The superior bearing of the top-dressed trees continued for two years. These results are similar to those we have witnessed for many years past, where young and newly transplanted and mulched cherry trees in one lot all lived and grew through a hot and dry summer, while a number of the unmulched ones either made little or no growth, or positively perished. The cherry is more sensitive to the heat of a hot and dry soil than other fruit trees, and mulching is more important.—Country Gentleman

SHEEP IN THE ORCHARD.

IF properly managed, the orchard may be pastured profitably by sheep. The only essential is not to pasture too closely and to have it so arranged as to turn in the sheep from the yards in the morning and take them out when they get restless and rambling, as this is the stage when they reach up for the limbs and hunt for a branch where the bark is tender. In Benton county we kept down the weeds and grass in a large orchard for ten years with sheep without spoiling a single tree by disbarking. If the pasturage alone was the main consideration, it would not pay to turn the sheep in and out. But experience has proven that *the orchard insects do not thrive where the sheep run*. With the sheep in the orchard our apples had less worms, and the leaf-eating insects, thrips, etc., were not as common and destructive as in orchards near by where grass and weeds grew. The common belief of nurserymen and fruit growers is that the sheep and goat are the natural enemies and eradicators of trees and shrubs. It is true of the goat, but sensibly managed "the animal with the golden hoof" is the friend of the nurseryman and orchardist. Year after year I have turned them into the nursery rows after we had quit cultivating. It was interesting to watch their quick and eager search for the tender weeds. Of course, when their appetite was satisfied they were turned out for the day. In the corn-field they proved an equally satisfactory way of gathering up the weeds in early August. In many other ways the sheep, and a boy, cleaned up the unsightly places. Where clean work of a big weed patch or hazel corner was wanted we had hurdle fence panels to throw around them, and the sheep *were kept there* until the work was done. In a hundred-acre pasture on the old homestead we had a corner of about ten acres in hazel brush, with here and there a young, bushy-topped elm, oak, wild cherry, etc. This was fenced in for the sheep when not on their foraging expeditions during the growing season. When the sheep were salted it was by brining the leaves of the taller hazel brush. In two years the brush was killed, and in four years a rich matting of grass took its place among the growing shade trees. I wish to make it emphatic that the sheep, properly managed, is the helper and friend of the horticulturist. But in late fall, winter and early spring, the place for the sheep is the feed lots and sheds. When tree bark is the only obtainable green thing, the sheep will decide that it is made for their use. —PROF. J. L. BUDD.

AN ENGLISH WAY OF KEEPING FRUIT.—Thoroughly dry a quantity of sawdust. Roll up sound, perfect fruit—bunches of ripe grapes, tomatoes, etc.—in paper, and pack it in boxes, filling spaces with the sawdust. Then wrap the box in newspapers, and keep it in a dry, cool room.

❖ New and Little Known Fruits. ❖

CANADA RED.

SIR,—I send you by mail a sample of an apple which is grown at Hudson, on the Ottawa river, and would ask you to name it. Out of an orchard planted at Mount Victoria at Hudson, Que., some thirty-three years ago, about 150 or 200 only survive. Of these thirty or forty of this variety have lived and seem to do remarkably well. They are “the survival of the fittest,” and must be well worthy of cultivation in this part of Canada. I know for a fact the Mount Victoria orchard has been much neglected since the death of the late Mr. Matthews, some twenty years ago, owing to a succession of tenants. The present tenant says he has taken six barrels of apples from one tree, nearly all first quality. I have shown specimens to several dealers in western fruit, and some say that it is the Canada Red, others that it is not. The quality of the fruit is good and its keeping quality excellent. Locally the apple has been called the Red Spitzenburg.

R. W. SHEPHERD, JR., *Montreal, Que.*

This apple is without doubt the Canada Red, an excellent apple for commercial purposes, where sufficiently productive. Larger apples are, however, more sought for.

THE SALLY BROWN APPLE.

SIR,—The sample I send you is a seedling of the Duchess, grown by a lady here of the same name. This is its first year in bearing, nine years from seed. The tree is a close upright grower with smallish sharply serrated leaves, absolutely free from down on the under side. The tree, about one inch through, had twelve to fifteen apples this, the first year. The sample was picked on the 15th of September and has had rough usage, having fallen from my hand to the floor twice. I have not tasted it, but think it is about ripe now.

J. P. COCKBURN, *Gravenhurst.*

This apple is of the Duchess style, but later in maturing, making it valuable. It is now October 27th, little past its best but evidently is of good quality—equally attractive with the Duchess.

THE BRITISH COLUMBIAN.

SIR,—I send you a sample of an apple for identification. In my opinion it resembles the Canada Reinette, but the producer claims that he planted the seeds some thirty years ago, and could take his oath to the fact that this tree is a production from that seed. The tree is a very strong and healthy grower, with large thick, glossy leaves, and has borne extraordinarily heavy crops of fine fruit every year for the last twenty years or over, some years yielding thirty bushels of marketable fruit. At the desire of the originator, we have named it the “British Columbian.”

G. W. HENRY, *Port Hammond, B. C.*

The apple sent us by our friend in British Columbia corresponds very closely with Downing's description of the Canada Reinette. It is of an immense size, reaching No. 10 of our scale for apples, as given in the October number. It is not so flat an apple as the Canada Reinette, being considerably longer in proportion from the calyx to the basin, and this, if a constant characteristic, may be sufficient to entitle it to a separate name. In our next number we will give a drawing and description of the Canada Reinette.

THE RED RAMBO.

SIR,—I send you by the same mail some samples of apple which is said to have originated in this neighborhood in an orchard of seedlings. It has been called Red Rambo. It is only cultivated to a limited extent, and mostly by the descendants of the originator, by whom it is highly prized as a dessert apple. From my experience with it, I find that top working is best way to deal with it, being somewhat tender when worked at the bottom. Some think that it is identical with the Pennsylvania Vandevere, but, according to Warder's description, the two are different. It is an abundant bearer, and will keep until March. I find it sells on a par with Russets, Spys, Greenings, Baldwins, etc. Please give me your opinion of it.

S. ROY, *Berlin, Ont.*

This is a pretty table apple, but if it keeps till March it is questionable whether it is the Red Rambo. The latter is a sub-variety of Rambo, almost identical with it, only the fruit is more red, and its season is October to December. It is certainly not Vandevere; it much more nearly resembles the Rambo.

Description of the sample: Fruit, medium size, roundish, smooth, yellowish in shade, bright red on sunny side, streaked and blotched with deeper red, plainly marked with brown dots. Stalk slender, straight, three-quarters of an inch long, deeply planted in a smooth, funnel-shaped cavity. Calyx closed, set in a broad, slightly plaited basin. Flesh cream-colored, tender, rich, mild, agreeable flavor. Good. Sample sent ripe Nov. 14th.

A PRETTY RUSSIAN APPLE.

SIR,—I send you two Russian apples for inspection. The tree on which they were borne was sent us about five years ago for testing.

W. H. ROBSON, *Lindsay, Ont.*

About the time mentioned by our correspondent, some Russian apple trees without name were distributed among the members of our Association, in order to test their hardiness. This probably is one. The apple is strikingly pretty in appearance, and, had it excellency of quality in proportion, it would be the first of its season for a dessert apple. It is medium in size, No. 5 in our scale; oblate conical in shape; skin creamy color, waxy lustre, with a beautiful carmine cheek; stem slender, short, in a deep, even cavity; calyx closed, in a plaited basin; flesh creamy white, tender, but with a somewhat peculiar flavor not quite agreeable at first; season probably October and November.

JUNEBERRY AND OREGON GRAPES.

SIR,—The July number of the *HORTICULTURIST* contains a colored plate of a berry indigenous to this district of British Columbia. It is very common, and the work ahead of me would be very much lessened if my land were cleared of them. They thrive best on warm, sandy loam, and those which come under partial cultivation are double the size of those shown in the colored plate, and, besides, the flavor is improved. They are very little appreciated by the white population, but the Indians have gathered them for ages. They dry them for winter use.

We have another kind of fruit indigenous to this portion. It grows on small evergreen shrubs and resembles bunches of small blue grapes. They are of a sprightly acid flavor, rather astringent, and excellent for making into jelly. Although they have no relation to the grapes proper, they are locally called Oregon grapes.

ARTHUR C. GRANT, *Armstrong, B.C.*



The Garden and Lawn.

CANADIAN WILD-FLOWERS.—II.

In considering our wild flowers, we shall group them according to their families, describing each under the head of the family to which it belongs, commencing with the

BUTTERCUP FAMILY.

This is known to botanists as the *Ranunculus* family, and is also called the *Crowfoot* family. It embraces quite a variety of plants, some of which climb by their leaf stalks, some are found in marshy places, others grow in dry, sandy soil, some prefer the shade, and others the open sunshine. We will first describe some of the plants that have given the name to the family, and afterwards some of the other members which will be interesting and pretty for the flower border.

You will find in many meadows a bright yellow flower during the months of June, July and August, that is an immigrant from Europe which has taken too kindly to our soil and climate. It grows from two to three feet high, the leaves are thrice divided, and each division is again parted, not so deeply, but usually into three lobes, which are again irregularly notched and cut, and the leaf stalk (which is called the *petiole*) is furrowed on the upper side and covered with fine, short hairs; leaves are also so covered, and likewise the flower-stalk, which botanists call the *peduncle*. The flowers are borne singly upon a tall, branching stalk, which is leafless except at the base of the branches, the stalk leaves becoming smaller as the stalk grows in length until they are mere bracts, which is the name given to the leafy appendages from the axil of which the flower stalk arises. *Axil* is the angle on the upper side, formed by a branch with the stem from which it springs, or by a leaf-stalk, or, when the leaf has no stalk, by the leaf itself, or by the flower-stalk. When a leaf or flower has no stalk it is said to be *sessile*. Now let us examine the flower. We notice first of all that it is *complete*; by which we mean that it has a *calyx*, a *corolla*, *stamens*, and *pistils*. These four organs are all that any flower has, and when any one of them is wanting we say that such a flower is *incomplete*. The *calyx* is the outer covering of the flower, and is usually green, though not always. The *corolla* is the inner leaf or leaves of the flower, it is very seldom green, but is usually either white or colored of some other color than green. The calyx of this flower consists of five distinct and separate pieces, which are called *sépals*: the corolla of five

separate parts, these are called *pétals*. Within the corolla and next to the *pétals* we find the male organs of fructification, these are called *stamens*. They consist of two parts, the stalk, which is often very slender and thread-like, and is called the *filament*, and the *anther*, which is borne on the top of the filament, and is the organ which produces the fine, powdery substance called *pollen*. Within the stamens and surrounded by them are the female organs of fructification, called *pistils*. A pistil is formed of three parts, the bottom part is called the *ovary*, within which the seed is formed; the middle portion, which is usually prolonged and slender, is called the *style*, and upon the top of this style there is usually an enlargement called the *stigma*. Sometimes there is no apparent enlargement, yet the upper part of the style will have the same moist, naked, rough, stigmatic surface as when enlarged. By *naked* is meant that there is no membrane covering the surface, as exists on all the other surfaces of the plant. It is purposely naked and moist in order that the pollen grains falling upon it may stick fast, from each of which a slender tube pushes out, and thus can penetrate without obstruction the stigma and style, and enter the ovary. In this flower there are numerous stamens, each having both filament and anther: there are also many pistils, of which the ovaries are the most conspicuous part, the other portions seemingly a mere point. The petals are yellow, the interior surface looking as if varnished. *obovate* in form, that is, *inversely oval*, having the narrower end at the bottom.



FIG. 99.—*RANUNCULUS ACRIS* (Fall Buttercup).

It will be important that those readers who are not familiar with the names of the different parts of flowers should carefully familiarize themselves with them as above described, as in future it will be taken for granted that the reader knows what is meant by these terms.

To sum up then what has been said about this plant, we find that it grows to the height of from two to three feet, that it is hairy, the leaves divided into three parts, each of which is again divided into three irregularly cut and notched lobes, that the *petiole* is furrowed on the upper side, while the *peduncle* is not furrowed: the flowers are borne singly on a long, branched stalk at the end of the branches, and have five *sépals* and five *pétals*, numerous *stamens* (they are more than ten), and numerous *pistils*; that the *corolla*

is yellow. The root is fibrous, not bulbous. This is called the Fall Buttercup. Botanists call it *Ranunculus acris*. It will grow in any dry soil, and has become a troublesome weed in many meadows. The juice is so acrid that cattle do not eat it. It is, nevertheless, a pretty flower, though not desirable in the flower garden, especially where it is abundant in the meadows.

450 Markham St., Toronto.

D. W. BEADLE.

BULB-FORCING.

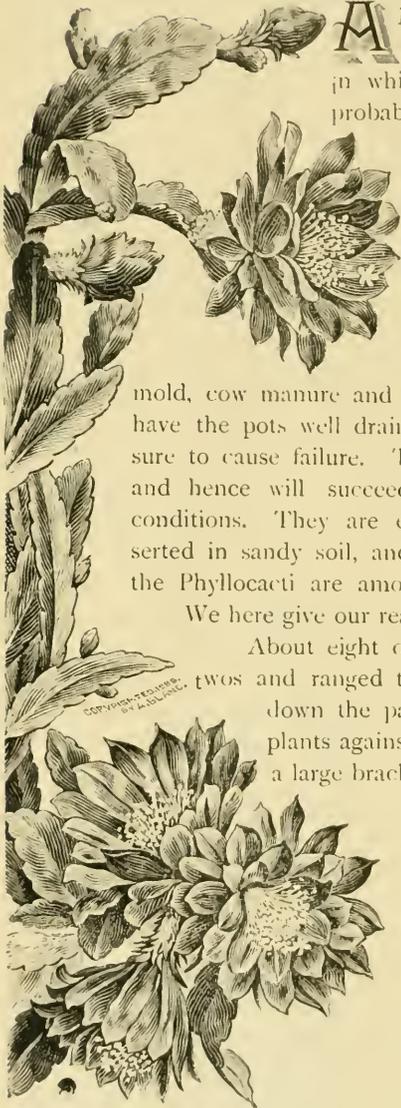


WHEN you pot your bulbs, water them well, then set the pots away in a cool, dark place to allow roots to form. Plant a bulb in spring, and roots and top make simultaneous growth, so that you have weak, unsatisfactory bloom. It is the same when you plant bulbs in pots and put them at once in a warm, light place. If you want good flowers from potted bulbs you must put them away in the dark for at least six weeks to form roots. The cooler the place, provided they do not freeze, the better.

When you bring bulbs to the light, do not put them in a very warm room, or they will make a weak, rapid growth, and very often the buds will blast. If you have a room that is proof against frost adjoining one in which fire is kept, keep your bulbs there. The cooler you can keep the air of the room in which your bulbs bloom, and have it above frost, the longer the flowers will last. If hyacinths show a tendency to develop buds in a little bunch down among the leaves, make a cap of thick brown paper, like a cone, cut off its apex and slip the cone over the pot. The flower-stalk will reach up toward the light coming in through the opening at the top, and in this manner you lengthen it.

In selecting tulips for pot-culture, get single sorts. They bloom better than the double ones, and are really more desirable in all ways. Among hyacinths, too, the single sorts are best. The Roman varieties are favorites of mine. They send up several spikes of bloom, while the ordinary varieties seldom have more than one. Their flowers are arranged more loosely on the stem, and have a less stiff and formal effect. They are delightfully sweet, and come in pink, pale yellow, blue, and white. They are single, and excellent for cutting. Tulips, hyacinths, and daffodils generally bloom in about a month after being brought out into the light. By keeping the pots in the dark the time of flowering can be retarded, so that one can have a succession of bloom. It is not easy to say when the *Harrisii* lily should be brought up in order to have it in bloom at Easter, because the conditions under which it is grown vary so much that advice seldom hits the mark. In a warm room the flowers come on rapidly; in a cool room, slowly. From this you can get an idea that may help you in governing the blooming period somewhat. If the plant seems developing too rapidly, put it in a cooler place; if too slowly, give it more warmth.—ELEN E. REXFORD, in *American Gardening* for September.

NIGHT-BLOOMING CEREUS.



AN interesting account of a social of this kind appears in the *Country Gentleman*, in which, however, the name of the plant is probably a misnomer. *Cereus grandi-florus* is not so commonly grown as a house plant, as a species of night-blooming Phyllocactus, which is also commonly known as Night Blooming Cereus. The Phyllocacti are easy culture and very profuse in flowers, which are of exquisite beauty. The best soil for them is a light sandy loam, but to which is added one-third of

mold, cow manure and sand, all well mixed. It is important to have the pots well drained; stagnation of water about the roots is sure to cause failure. They are not fastidious about temperature, and hence will succeed well in the window under ordinary conditions. They are easily propagated from fleshy cuttings inserted in sandy soil, and kept dry for about a week. Altogether the Phyllocacti are among the most satisfactory of house plants.

We here give our readers the clipping referred to:

About eight o'clock the guests dropped in by ones and twos and ranged themselves in a semi-circle of chairs up and down the parlor, at the end of which stood two cereus plants against a black draped background. At the left a large bracket lamp, artistically shaded, supplied them with both heat and light. The plant stems were covered with long, narrow pendant leaves, somewhat resembling in shape tobacco leaves when first hung up to dry. From very near the extremities of some of the leaves pendulous stems depended, and upon these, when the first guest arrived, were sharp, conical pointed buds which were partially unfolded before the last couple dropped in. The old saying that a plant grows

so fast that one can see it grow, was here actually verified. The guests watched, with curious eyes, the large, white petals as they gradually unfolded, revealing a pendulous star-shaped centre, so intricate, so delicate and nebulous that art must have stood appalled before it. About the middle of the evening

refreshments were served, and in the buzz of conversation which ensued, some one asked the hostess how long the flowers would last.

"Until midnight," was the reply. "If left on the plant until morning, they would be the most wretched looking objects you ever laid eyes on."

When these snowy, majestic flowers were fully opened, they were as beautiful a sight, of the kind, as one would care to look upon. Considering the great size of these flowers, the wondrous delicacy and beauty of their construction is the most startling thing about them. It is much like being brought suddenly face to face with a botanical impossibility. When the guests arose to depart, the hostess detached the flowers from their stems and sent them to friends who were unable to be present.

FLOWERING BULBS FOR THE WINDOW.—The same journal says that it is a very easy matter to prepare hyacinths, tulips, crocuses, freesia, and other bulbs for winter blooming, and that failure is hardly possible if any kind of attention is given to their wants. One hyacinth bulb should be placed in a four-inch pot, three tulips, and a half-a-dozen each of crocuses and freesias may go in the same sized pot. They should be potted with rich soil, and the hyacinths set only about one-half their depth in the earth. They should first be well watered and then set in a dark, cool place, where they may be left about six weeks in order to become well rooted. At intervals of several weeks they may be brought out and by this means a succession of flowers may be had during the whole winter. As the bulbs swell, an occasional watering with a weak manure water will result in more perfect flowers.

SALT AS A FERTILIZER.—It is not known by chemists how salt acts as a fertilizer, but the opinion is that salt has the power to liberate ammonia from the soils that have been manured with nitrogenous manures. This is the case in sandy soils, where the ammonia exists in fertile combinations. The salt acts upon the ammoniacal salts by forming soda in the soil, and chloride of ammonia, which passes into solution, and then becomes an active fertilizer. It is known that on poor land devoid of humus and ammonia it acts as a very indifferent manure, while on rich lands, where ammonia has been stored up in clay or humus, it acts well by eliminating the ammonia and placing it in combination suitable as soluble plant food. Salt is also beneficial on soils as fertilizer by aiding in rendering insoluble potash and phosphate soluble, which dissolves the bone phosphate and renders it into soluble phosphate of lime. Salt is a beneficial solvent when added to the manure heap by drawing moisture, and keeping down the fermenting heat in the nitrogenous manure, and making it more soluble and better decomposed as plant food when applied to the soil and crop.

THE CULTURE OF ROSES.



As we all wish the finest roses, it must not be forgotten that if you want roses they must be in the richest part of your rich bed. You cannot give roses too much rich feeding, and you cannot keep them too clean. They must be thoroughly watered, and the plants syringed with whale oil soap dissolved in lukewarm water once a week at first, and later once a month, if there are no bugs. Instantly when you see a single bug, those small green parasites, thoroughly syringe with whale oil soap. Water once a week with a watering-pot full of lukewarm water, in which a table-spoonful of nitrate of soda has been dissolved. This can be bought in crude form at any druggist's at ten cents a pound. This enriches the plant and improves the flowers. Let no rose remain on the plant when it is full blown. It exhausts the plant very much.

If your climate is mild you may have a wide choice of roses. If a New England climate, do not waste your time on many roses except hybrid remontants. They will winter usually with some protection and they give lavish bloom, and the robust growth of the plant, with its solid leaves, is to my mind handsomer than any other rose but a few teas. It is well to have some teas for perpetual blooming and the beauty of the flowers, but they must be taken into the house in winter.

The Sombreuil is a very floriferous tea rose of a charming subtle creamy tone. But no rose of any class seems to me so fine as a successful Souvenir de Malmaison. It is a tea rose, but its leaf and stalk have a vigor of a remontant. The great dark green leaves have no rival among all the rose plants, and the flower is large, most exquisite in form, and in color a pure silvery flesh tone, with a blush of rose in the centre. The Bon Silene is very floriferous, and the full open rose is as beautiful as the bud, though of all teas it is supposed to be most valuable for its buds.

The Duchess de Brabant is a charming tea rose, of a delicate shell pink. It grows luxuriously, and if housed in winter can be grown to a fine size, and lends itself easily to being made into a "standard rose" — a form of rose the French delight in, and which is the handsomest artificial form that a rose can be trained into. It has great style. The method is to cut away all but the strongest shoots of the tree after the tree is pretty well grown, and then all the strength goes into that one stem, and it grows very large, and straight and tall, no side branching allowed upon it. The foliage at the top of the one stem grows very thick, and it is trained into a shapely mass that bears many roses. The hardy remontants can be excellently used for this form of rose.

I will give the names of a few hard remontants which I have seen successful: The Marshall P. Wilder, which is of a superb red; the Marquise Cast-

illane, which bears a very large rose of a magnificent deep pink ; the Anna de Diesbach which is of a beautiful pink, and very large and very fragrant ; the Abel Grand, very floriferous, and of which the bud is most shapely ; the Silver Queen, which is a blush rose of great beauty ; and I might have said first of all, the Mabel Morrison, a white with a pink blush ; the General Jacqueminot, dark and fragrant ; the beautiful Baroness Rothschild, a full shell pink in color, absolutely perfect in form and the most decorative rose. It has one fault—it has no perfume. But do not let this deter you. Place a Jacqueminot next to it and you will miss nothing. The Marguerite de St. Armand is a lovely rose ; the Dinsmore is not so beautiful in form, but covered with bloom from end to end of the season. One delicious sweetbriar must be among your roses. Mix other flowers with your roses. They are finer so in a garden than alone.

Roses, like poppies and marigolds, need sun. Set your roses out in the autumn only if your winter is mild. If you have a severe winter climate start them in the spring. Then they will get firmly established by the autumn, and winter more safely.

They must be "laid down" as late as possible—that is, gently bent to the ground and fastened so by means of twigs put over them like little arches, the ends of the twigs firmly stuck in the ground ; then, according to the severity of the winter, cover them with straw, leaves, litter, cloths, lightly or heavily, as the winter may demand. A snowless winter is their greatest enemy.—Harper's Bazar.

HOW TO LAY OUT THE FARM GARDEN.

A correspondent of the *Practical Farmer* says : "Make your garden long and narrow. Build your fences along the sides of good material and set them solid. Make the fence at the ends movable and support it with the common A brace instead of posts. The panels should be light and strong. Lath crossed like lattice work and nailed to two pine boards four inches wide and twelve feet long will make it. When the garden is to be manured, plowed or cultivated move the end panels out of the way and drive straight through. Plow deep, harrow fine and smooth with a broad plank. Do the job thoroughly and you will have a seed-bed good enough for anything, and the soil will be easy to cultivate the whole season. Set a row of currants and gooseberries close along the inside of the south fence (we are presuming the garden lies the longest way east and west), and a row of Blackcap raspberries along the north fence. Four feet from the raspberries set a row of asparagus : four feet from this two rows of strawberries, three feet apart : then plant your radishes, lettuce, peas, beans, beets, etc.—everything except corn and potatoes—in rows far enough apart to admit your steadiest horse and narrowest cultivator. But little hoeing will be required, and in one season you will be convinced that you can garden as easily as farm. The fruit and vegetables will lessen the cost of living fully a third. Your doctor bills will decrease, your health increase, and as the years pass you will wonder how you ever got along without a good garden."

‡ Forestry ‡

THE WEYMOUTH, OR WHITE PINE, FOR POOR LANDS



IMBER of every kind is now becoming very scarce in Canada, but especially is this the case in regard to White pine. It being the most generally useful kind of timber, the demand for it abroad has been so continuously supplied, that it is now only a matter of a few years' time when our country will be almost without it, and already it has become a matter of serious consideration. Iron is now used for many purposes for which formerly only wood was used, but the coldness of iron, aside from contraction and expansion, seems to preclude the probability of its ever being well suited for the building of dwelling houses, or even farm buildings for the comfort of live stock.

There is, throughout the country, many thousands of acres of impoverished land, producing little, if any, value. If those lands were planted with White pine, they would, in course of time, become more valuable than much of the land which is now cultivated for agricultural crops. There is scarcely any land so poor that White pine will not thrive on it.

From no kind of tree has there been so much value in timber and lumber obtained in Canada, which fact evidently shows its adaptability to this climate and country. No kind of tree produces useful timber on poor land in so short a time.

The Scotch pine, Austrian pine, European larch, and Norway spruce are all fairly well adapted for producing timber rapidly on poor land, but planted side by side with the White pine they are excelled in every instance.

I can point to mixed plantations where White pine trees have grown to be fifty feet high in twenty-two years, and every tree straight as a mast. This growth has been attained on poor land without any cultivation whatever, beyond thinning out as the trees grew large, and clearing away decaying under-branches.

Ten feet apart, an acre contains about four hundred trees. No other kind of forest tree does so well growing so closely. There are but few farms on which there are not some poor spots yielding nothing but weeds. If these lands were planted with White pine, and protected for a few years, they would, in course of time, become the most valuable lands on the estate.

Cataraqui, Ont.

D. NICHOL.

The best time to sow lawn-grass seed is early in spring. Preparations can be made in fall, and if seed is sown on a frozen surface in March, such a thing as the seeds failing to germinate is almost impossible. April sowings, even, are sure of enough spring rains to almost wholly remove any risk of failure.

‡ The Apiary ‡

THE BEST TIME TO BEGIN BEE-KEEPING—SPRING OR FALL,
AND THE NUMBER OF HIVES THE BEGINNER
SHOULD UNDERTAKE AT FIRST.



THE best time for a beginner to get his first bees is in spring, say about the 25th of May, after all danger of loss from wintering and spring dwindling is past. But, if the subject is entirely new to him, the beginner will require some mental preparation, which, perhaps, he had better commence in the long evenings of the previous fall. He should read all the works on bee culture within his reach.* The study of several authors is advised, because when a student has to get up the natural history, the anatomy, and the physiology of the honey bee without the aid of such teachers as Prof. Cook, of Lansing, Mich., or Prof. Clarke, of Guelph, Ont., he will get a better knowledge of these subjects by comparing the teachings of different authors on the same points. For instance it would be difficult to find anything better on the natural history of the honey bee than the first 40 pages of Dziertzan's Rational Bee-Keeping; but when the student has read, in addition to this, the first 100 pages of Langstroth on the Honey Bee, revised by Dadant, and the first 140 pages of Cook's Manual of the Apiary, he will feel that he has a better grip of the subject than he could possibly get by confining his studies to either one of these authors. If the beginner has, by this time, become deeply interested, and desires to study the scientific part of the subject still further, Cowan's Honey Bee, and Cheshire's Bees and Bee-Keeping, Vol. I. will probably keep him busy till spring. Two chapters in the latter work, entitled Bees and Flowers Mutually Complimentary, and Bees as Fertilizers, Florists and Fruit Producers, are very instructive and exceedingly interesting to horticulturists as well as bee-keepers. While engaged in the study of those authors, the student may get a few bees for examination from some neighbor. If he has a good magnifying glass, or, better still, a good microscope, much important information may be gathered by examining the various parts of the bee.

Two or three stocks are quite sufficient to commence with. The bees should be of a quiet strain of Italians, and they should be in movable frame hives: the Langstroth is as good as any. The beginner should provide himself with a bee veil and a smoker. If his motions are slow and deliberate, as they always should be when working about his hives, gloves are unnecessary. But by all means let the beginner provide himself with an observatory hive. About the middle of June he may go to one of his hives and remove a brood comb, with the queen and adhering bees, and place it in a hive having glass sides, through which all the operations of the bees may be readily seen. This hive may be placed in a window in the living-room of the dwelling. A passage may be made for the bees by raising the sash, and placing beneath it a piece of wood through which

a tube may be carried to the observatory hive. With such a hive the unloading of honey and pollen in the cells, the egg laying of the queen, the time required for the hatching of the egg, the nursing of the larvæ, the time of sealing the brood cells, and the time at which the mature insect emerges, may all be clearly observed, as well as many other operations of the hive, which are important to be known, whether beekeeping be followed for pleasure or for profit.

The subsequent course of the beginner will depend to some extent upon whether his object is the dollars and cents to be derived from the business, or to have a hobby. Even the latter may be profitable financially. I know of a business man, in failing health, who said recently to a friend that he would give \$1,000 per year for a hobby which would divert his mind from business matters. There is nothing such a person could take up that would take him out as much into the open air and sunshine, and which would be as likely to secure the object desired, as beekeeping. Dr. Dziertzon says, "Whoever has once experienced the pleasure to be derived from the study and culture of bees will, I am convinced, spend every leisure hour in his apiary." The experience of several others confirms this opinion.

I am aware it may be said that a beginner may learn the business by getting the bees first, and making experiments and observations as he goes on. True, but life is too short to commence *de novo*, and overtake in this way all the work which has been done by others. Far better for the beginner to inform himself first of what has been accomplished, and if he then feels disposed to pursue original investigations, he will find that there are still unexplored fields sufficient to give scope enough for the exercise of all his abilities during the remainder of his lifetime.

Lindsay, Ont.

S. CORNELL.

A TIMELY HINT.—Here is one of Professor L. H. Bailey's practical stories. "I know a man by the name of Bixey, and after he went into the peach business I went to see him. Out behind the packing house he had a large dyke vat, and some men and women were dipping the tops of his baskets into this aniline dye. Everybody soon learned to recognize his fruit by the bright color of his basket tops. So he is making lots of money out of the dyeing business, but he takes care that his fruit is carefully graded and all that is put into such baskets is of the finest quality.—Farm and Vineyard.

OUTDOOR ROSES.—Plant roses in the richest bed you have. You can hardly give them too much decayed vegetable and animal fertilizer, or keep them too clean of weeds and insects. If thoroughly watered just before blooming time, with whale oil soap dissolved in lukewarm water, insects will give little trouble. Give the plants also, once a week, a pot full of warm water in which a tablespoonful of nitrate of soda has been dissolved. Keep full-blown roses picked off, as they exhaust the plants. Roses may be set in fall in climates having mild winters. Protect them during winter by pegging down and covering them with straw, leaves, evergreen boughs or soil.—S. S. STORV.

BEES AND GRAPES.



R. MURRAY: On the question of the bees puncturing and destroying grapes, I may state that I have been twenty-five years in the bee business, and that I can keep my bees as near my grapes as I am to these gentlemen here, which is about four feet, and they do not harm the grapes. I have read a great deal on the subject, and watched closely, and I would say that the gentleman

makes in his paper one statement that contradicts his own assertion. He says the bees take the grapes and suck out the juices until there is nothing left but the skin, in which there is a little round hole. It is not the bees but the yellow jackets that make those punctures and cut those little round holes. I have frequently found that to be the case. It is well-known by those who understand this question that the yellow jackets do this. The yellow jacket makes that puncture, and then the bees, after the grape is cracked or punctured, either by the yellow jackets, or in any other way, pitch in for their share of the juices. But that does not occur until after the skin is broken. That is what has given the gentleman the impression that the bees did it. But the fact that that little round hole was left there proves to me that the yellow jackets made it, not the bees.

MR. WILCOX: I believe that it has been well established that the honey bee cannot puncture the skin, or the little film or inner skin that surrounds the grape. This has been demonstrated in our Society by overwhelming evidence.

MR. CUTLER: I will state that when the material for honey was very scarce last summer, the bees came and settled in swarms upon my raspberry bushes so thickly that a lady could not go in there and pick the fruit. I know that they punctured the cuticle of the raspberry. They did not touch my grapes, although they were within two rods of my bee hives.

MR. WILCOX: I will state the experiments of Prof. McLean, in which he confined colonies of bees in a glass house and took their food away from them, so as to bring them to a starving condition, and hung bunches of grapes of different varieties around inside the house, and even hung bunches of grapes inside of the hives, and kept them so confined until the bees died of starvation. There was not a single grape injured by them. But as soon as the grape was punctured, even with a needle, so as to penetrate the epidermis, then they went in and cleaned them out entirely. That is the entire basis of these charges against the honey bees. It has been my experience that whenever any bird or insect once punctures the skin of a grape, then the bees take possession and clean out the grape. But they have no biter by which they can penetrate the

skin of a sound grape. This fallacy is one that the bee-keepers of this country have been obliged to fight for years and years, and yet it has many times been proved to be wrong.

MR. HARRIS: I do not believe that the honey bee injures the grape, that is the sound grape.—Minn. Hort. Soc., 1892.

NATIVE BEE PLANTS.



IN Michigan there is a very large number of plants which furnish a good quality of honey. If the species is abundant in any region, it usually becomes known to the apiarist as a good bee plant; if not abundant it very likely fails to attract attention. A plant may be rare or important in one region and abundant in another. In autumn, asters and golden rods are known as excellent bee plants, because some few of the many species in the State are plentiful in nearly every neighborhood, but the same sorts of asters or golden rods do not everywhere throughout the State furnish a great amount of honey. As a rule, those plants which produce odorous or showy flowers afford honey and will be visited by honey bees, unless the flower is of a shape which makes it impossible for the bee to reach the food. Probably in the State there are of native plants, introduced weeds and field crops, a thousand species which furnish excellent food for bees. This is nearly one hundred times as many as the bee-keeper has in mind, unless he has given unusual attention to the subject. Our open, low lands furnish a large proportion of the bee pasture; the forests some; the weeds and some of the field, garden, and orchard crops a fair amount. Extremely dry, or very wet weather, are both unfavorable to the yield of honey. Drainage of the swamps and the clearing of waste places are unfavorable to the interests of the bee-keeper. As the botanist now looks at the subject, colors and odors are mere advertisements to call the attention of insects to the rich supplies of food in store for them. It may be said that the honey is there for the bees, but primarily it is there for the good of the plant, secondarily for the good of the insect. Had good old Dr. Watts lived in our day, he would have, no doubt, written his familiar verse in this way:

How doth the little busy bee
Improve each shining hour?
By carrying pollen day by day
To fertilize each flower.

—*Michigan Flora.*

STAKES and similar requisites gather up carefully, and store in a safe place for another season.—*American Gardening.*



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NOTES AND COMMENTS.

CROSBY PEACH.—Mr. E. McArdle, who has a large peach orchard in the vicinity of St. Catharines, writes us as follows, concerning our plate of the Crosby peach. He says: "I notice that one of your correspondents has taken exception to the plate of the Crosby peach. I myself think it is overdrawn; but I got some of them as samples from Mr. W. D. Hines, Townsend, Mass., this season, which were larger than those mentioned by your correspondent, though not so large as Crawford. They were a very attractive peach in color, and, if they are as they are claimed to be, the variety is a valuable one."

FARMERS' INSTITUTE WORK.—We notice in the reports of the Sheep Breeders' and Swine Breeders' Association, that it is considered somewhat of a grievance that they have not a special representative speaking at Farmers' Institutes, as well as the Fruit Growers' Association. Certainly, we, as fruit growers, have no idea of standing in the way of our brethren in other occupations. If farmers can do better raising swine and sheep than fruit, we have no object in persuading them to engage in fruit growing. Indeed, it would be rather in the personal interest of the fruit growers to lessen, rather than extend, the acreage of land devoted to fruit in our province; because, in this way, there would be less competition in our markets for the sale of our fruit.

ACREAGE DEVOTED TO THE VARIOUS KINDS OF FRUIT.—The Annual Report of the Bureau of Industries does not give sufficient attention to the fruit growing industry. Very careful estimates are given of the area of produce of wheat, barley, corn, potatoes, etc., but when you come to the department of fruit growing, we find simply a list of the acres in the various counties devoted to the orchard and garden; but no specific account of the number of acres devoted

to the apple, pear, peach, plum, grape or any other of the fruits. It would help us in our work, as an Association, and make this report of value to many more of us, if careful inquiries were made under the head indicated and the results published in their annual reports. Surely the products of the orchard and garden are of just as much importance to our country as any of those of the field.

THE STANDARD APPLE BARREL.—Since our last issue we have secured, through the kindness of Wm. White, of Ottawa, the following extract from the Revised Statutes of the Dominion :

“18.—1. All apples packed in Canada for sale by the barrel, shall be packed in good and strong barrels of seasoned wood made as nearly cylindrical as may be; the staves of such barrels shall be twenty-seven inches in length from croe to croe, with heads from sixteen and one-half to seventeen inches in diameter; and such barrels shall be sufficiently hooped, with a lining hoop within the chimes, the whole well secured by nails.

“2. Every person who offers or exposes apples for sale by the barrel, otherwise than in accordance with the foregoing provisions of this section, shall be liable to a penalty of twenty-five cents for each barrel of apples so offered or exposed for sale. 48-49 V., c 16, s. 18.”

NEW YORK STATE is waking up to the importance of making a good exhibition of fruit at the Chicago Exposition. Mr. G. T. Powell has been chosen superintendent. He proposes, as an exhibition of fresh fruits in their season, 200 varieties of strawberries, 50 of raspberries, 25 of blackberries, 25 of currants, 25 of gooseberries, 75 of cherries, 150 of peaches, and 250 each of apples, pears and grapes. In addition to this, he is ordering from an expert German artist about one thousand wax models of each of the natural fruits which are supposed to be the exact copies of the originals grown in New York State. These will be very beautiful. In our opinion, however, wax models are inferior to the real thing every time, for people will constantly question whether anything in nature could equal the waxen copies. We believe when our own collection of fruit in glass jars, under Mr. Pettit's charge, is shown, it will gain us more credit than a collection of wax ones, and the expense will probably be much less.

EXPERIMENTS IN HORTICULTURE.—Mr. John Craig's evidence for 1892, as the Dominion Horticulturist, before a select committee of the House, contains a *resumé* of horticultural progress up to the present time. After speaking of the work of propagating nursery stock and protection against mice, he refers to unleached wood ashes as one of the best and cheapest fertilizers for the orchard. A bushel contains three pounds of potash, one of phosphoric acid, besides lime, magnesia, etc. He cautions against using Paris green with any combination containing ammonia undiluted, because the arsenic is thereby dissolved and

becomes injurious to the foliage. The difficulty is avoided, however, by adding Paris green after the mixture has been fully diluted with water.

Ammoniacal copper carbonate and dilute Bordeaux mixture are spoken of as the leading fungicides for apple and pear scab and grape mildew. The spores of the mildew remains over winter on the dead leaves and on the bud scales of the young twigs of the trees and on the fruit, in fact, on any resting place. They are easily distributed by the wind, and other agencies, after the growth begins in the spring. This explains why it is important to apply a strong copper mixture to the trees and vines of our orchards before the foliage appears in the spring.

McMahon's White apple is very highly spoken of as a very hardy and profitable variety. In Milwaukee it brings the highest price of any apple of its season. It is an early winter apple.

Some experiments with potassium sulphide for gooseberry mildew, in the proportion of an ounce to three gallons of water, was successful. The spraying was repeated frequently, about once a week, until the fruit was formed. Even the English gooseberries were kept free from mildew by this method. The result of this experiment is of great importance to us, for, hitherto, the only reason why Canadians have not succeeded with the fine English gooseberries has been the exceedingly destructive fungus, the gooseberry mildew, which attacks those varieties with great severity.

Mr. Craig's evidence occupies 27 pages, and contains much else that is of interest.

THE BROOK.—While the whole literary world mourns the loss of Lord Tennyson, England's poet laureate, it will not be out of place for us to note that he was an appreciative observer of country life, its flower gardens and lawns and forests. How beautifully he gives expression to his love of such scenes in this delightful poem, the rhythm of which is as musical as the rippling brook itself :

I chatter over stony ways
 In little sharps and trebles ;
 I bubble into eddying bays,
 I babble on the pebbles.

With many a curve my banks I fret
 By many a field and fallow,
 And many a fairy for land set
 With willow-weed and mallow.

I chatter, chatter, as I flow
 To join the brimming river.
 For men may come and men may go,
 But I go on forever.

I steal by lawns and grassy plots,
 I slide by hazel covers ;
 I move the sweet forget-me-nots,
 That grow for happy lovers.

I slip, I slide, I gloom, I glance.
 Among my skimming swallows ;
 I make the netted sunbeam dance
 Against my sandy shallows.

I murmur under moon and stars
 In brambly wildernesses ;
 I linger by my shingly bars ;
 I loiter round my cresses.

And out again I curve and flow
 To join the brimming river,
 For men may come and men may go
 But I go on forever.

❖ Question Drawer. ❖

THE WOOLLY APHIS AND THE SCAB.

501.—SIR,—Many of my peach trees have mildewed leaves on the ends of the branches. Can you explain? My apple trees have woolly aphid on them. What is the most simple and best remedy? I have used this year a solution of sulphate of copper and lime for spraying my Winter Nelis pear trees for scab, and found them remarkably free from it. I understand that this preparation is recommended, for not only the scab, but for the mildew in the grape and the fungus diseases of the potato. Has anyone tried it for the peach leaf curl which I understand to be a fungus growth? If not, would you advise using it for that purpose.

H. COTTLE, *Salem, Oregon.*

We could not explain the cause of the mildew leaves of the peach trees without seeing them.

The woolly aphid is easily destroyed by spraying with *kerosene emulsion*. It may be made thus—one quart of soft soap, or one-quarter of a pound of hard soap, two quarts hot soft water and one pint of kerosene. The kerosene is best added when the soap suds are boiling, for then it will easily emulsify, if stirred briskly. When needed for use, dilute with water to one-half or one-third the strength.

A *kerosene and milk emulsion* is also commended for destroying plant lice. It is made thus:—Sour milk one gallon, kerosene two gallons, warm to blood heat and mix thoroughly. Dilute with ten times the quantity of water.

Our correspondent was wise in using sulphate of copper and lime, or Bordeaux mixture, for the scab. It is very effective, and this, or some similar solution of copper, seems to be the hope of future apple and pear growing for profit.

The mildew of the grape and the rot of the potato are also effectually checked by its use. But in all cases the work needs to begin in good time, before the disease has developed, as the application is more preventive than remedial.

The *Bordeaux Mixture* is thus formed :—Dissolve six pounds of sulphate of copper in sixteen gallons of water ; in another vessel slack four pounds of fresh lime in six gallons of water. When the latter mixture is cool, it is slowly poured into the copper solution, care being taken to mix thoroughly by constant stirring. Prepare some days before using. Stir before applying. This is somewhat expensive, when a large amount is required, and it is thought by experimenters that one-half the strength will be quite effectual.

Spraying the trees and vineyard in winter or early spring with sulphate of copper, one pound to twenty-five gallons of water, is also useful, because the spores must live through the winter on the old wood, and may at this season be destroyed by such a powerful solution as could not be safely used when the foliage is out. We could not say whether the Bordeaux mixture would be useful in the case of the curl leaf of the peach. The foliage is very tender and these poisons must be applied to it very cautiously.

PARIS GREEN AND THE CODLING MOTH.

502.—SIR—Is Paris green anything like a check upon the codling moth ? Do you find that lime mixed with Paris green lessens its effect ? I have found Paris green no use, seven teaspoonfuls to forty gallons of water, lime *ad. lib.*

W. T. PAYNE, *Pokeno, New Zealand.*

In our experience we have found that a careful application of Paris green is very useful in checking the working of the codling moth. Applied in a fine spray, in the strength of one pound to two hundred gallons of water, it will result in fruit comparatively free from injury by either the codling moth, or the curculio. Possibly a weaker solution might suffice. Anyway care must be taken to keep the poison thoroughly stirred, or it will settle at the bottom and the dregs of the barrel will be destructive to the foliage of the trees.

Lime lessens the evil effects of Paris green upon the foliage, and probably also upon the moth, although we have not proved this. Certain it is that a much larger quantity of poison may be used if lime is added.

Probably our correspondent used too little Paris green considering the amount of lime used.

EXPERIMENT WITH CAUSTIC POTASH.

503.—SIR,—I have an orchard of 2,500 plum trees, 500 apple and 200 peach trees. Last May I sprayed the major part of this orchard with caustic potash, diluted to about the proportions of one pound to two gallons of water. The buds had swollen to cup-like forms, but the green edge of the leaf had not appeared. I used a brass pump. The application was sufficient to deeply darken the bark, remaining for several weeks. My object was to destroy the germinal quality of insect eggs, cleanse the bark, and possibly destroy fungous spores incidental to the trees, which may have just lodged. I know the immediate value of potash applied in a soluble form, and the annual need. The ashes of a plum showed 75 per cent. of potash. This season, by accurate observation, my plums and apples, where the potash was so used on the buds, are pronounced one-eighth larger than previous years. I am perplexed as to the cause of this larger fruit. Each cup-like bud was capable of holding one or more drops of the showered potash, and the hundreds of thousands of buds would hold an appreciable quantity, and timely developed larger leaves and stronger fruit blossoms. The absorption by the bark would be influential in the same direction. Kindly favor me with reliable data gathered at Maplehurst along this line of experiment.

W. C. ARCHIBALD, *Euruscliffe Gardens, Wolfville, N. S.*

The experiment made by Mr. Archibald is worthy of notice, and we would direct the attention of our experiment stations to the excellent results which he obtained. We have never tried caustic potash in this way. The only use we have made of it has been in a weaker solution applied to the trunks and branches of trees to destroy the oyster shell bark louse. Most experimenters have been endeavoring to destroy fungi with solutions of sulphate of copper, one pound to twenty-five gallons of water being recommended for scab and mildew, applied before the foliage appears, and the Bordeaux mixture after. Possibly a strong solution of caustic potash will be as serviceable, for we can only account for the clean, large fruit resulting, except by the destruction of minute fungi and insects which weaken the growth of the trees, and bring about the production of small sized fruit.

RASPBERRY GROWING FOR HOME USE.

504.—SIR,—I want to set out next spring two hundred raspberry bushes. What varieties, and in what proportion would you advise. The ground slopes to the west, is sheltered on the east and south by a cedar hedge and is clay. I want them for home use, not for shipping.

F. G. TREMAYNE, *Sutton West, Ont.*

Of red raspberries we would recommend Tumer and Cuthbert, and for white, the Golden Queen. If sufficiently hardy, or if winter protection can be given, we would recommend Brinckle's Orange, on account of its superior excellence of quality. A fine red raspberry, surpassing either of the above-named in flavor, was sent us by Mr. Gibbard, of Napanee, some time ago. The bushes are fairly productive and seem quite hardy. We have called it Gibbard's Seedling. Of the black caps for family use, we would recommend Souhegan and Hillborn. For canning purposes the Shaffer raspberry is the most desirable of all, and should have a place in every home garden.

PRUNING RASPBERRIES.

505.—SIR,—How high should Shaffer's Colossal raspberry be trained? Is four feet too low?

F. TREMAYNE, *Sutton West.*

If fall or spring pruning is meant, the operator must be governed by the strength of the wood growth, simply cutting off the weaker portions having the least vigorous buds, and no rule could be given. If summer pruning is meant, three feet is none too low, for if the canes grow too high before branching, they will become top-heavy and bend over to the ground, soiling the fruit, and interfering with cultivation.

HOW TO INTRODUCE NEW FRUITS.

506.—SIR,—Would you please inform me through the Journal, the best way to have a valuable winter seedling apple introduced. Had my whole orchard been of this variety, the orchard this season would have netted me \$1000 more than it has done. It is a beautiful color, always free of scab and will keep until May or June. It is an annual bearer, every alternate year it is a sight to behold. I have frequently propped up the limbs to keep them from being broken. I planted my orchard eighteen years ago, and this variety has been a thrifty grower, and began bearing as early as the Duchess of Oldenburg.

S. C. WAIT, *St. George, Ont.*

The best way to introduce new fruits is to send samples to the meeting of the Ontario Fruit Growers' Association, and also to the horticulturist at the Experimental Farm, and, in addition to this scions should be sent to the latter place to have the variety thoroughly tested. If you get a favorable report from the Fruit Growers' Association and from the Experimental Farm, you will no doubt be able to dispose of the right of propagation to some nurseryman.

GROWING PEPPERMINT.

507.—SIR,—Could you, through your valuable Journal, let me know something with reference to the planting, cultivation and marketing of peppermint? Also the varieties likely to give the best returns, in a district about thirty miles north of Toronto.

WESLEY JACKSON, *Cannington, Ont.*

We have had no experience in growing mint for market and do not know of any one in Ontario who has had. There are three species of the mint family, all hardy, which are cultivated in gardens for the use of their tops or leaves in sauces or for other culinary purposes, viz.: Pennyroyal (*M. Pulegium*); Peppermint (*M. piperita*); and Spearmint (*M. viridis*).

Pennyroyal is least used. It is easily propagated by the division of the roots and succeeds best in a moist, loamy soil. It may be planted six inches apart, in rows one foot apart.

Peppermint is grown chiefly for the use of its tops for distillation in order to obtain that valuable cordial which is so well-known. The roots are divided

and planted in shallow trenches about nine inches apart and about two inches deep. Cuttings may also be made in the summer. A moist situation is preferable for peppermint, but it will succeed in almost any soil. The tops are cut off just as they are coming into flower and distilled as soon afterwards as possible. The beds should be top-dressed with a good soil.

Spearmint is most largely in request, particularly in the spring and early summer. It is wise to have a good stock, in order that a portion may be available for forcing. Otherwise the propagation and cultivation are the same as for peppermint. A portion of the tops should be cut when coming into flower and hung up to dry. Green leaves are preferable to dry ones, and forcing is easy, the only preparation being the insertion of a quantity of roots in a box of soil placed in a temperature of sixty degrees and kept watered.

We are indebted to the "Nicholson's Dictionary of Gardening" for most of the above points.

FOWL MANURE FOR PLANTS.

508. SIR,—Will you say in your next issue, whether fowl manure leached will answer all the purposes of a fertilizer for plants in pots? And if the manure should be left to ferment before being leached, should the liquid be diluted before being applied to the plants?

STEARNE TIGHE, *Amherst Island, Ont.*

Reply by N. Robertson, Superintendent Government Grounds, Ottawa.

Fowl manure will answer as a fertilizer for plants in pots, but there are many things preferable. It can be used either after fermentation or before. The former method I should prefer for various reasons. If it is not diluted and made very weak much damage may be done by its use. I would advise its use only on what is called soft-wooded material.

WHAT PAYS BEST?

509. SIR,—I intend to begin fruit growing, and would like to know what to plant that would give me the best returns in the shortest time?

S. K. MERCER, *Burnhamthorpe.*

There is no doubt that small fruits give the quickest returns. Indeed, take it year by year, they probably yield more money, acre by acre, than the larger fruits. Of course, proportionately more time and labor is required in their cultivation. It would be difficult to advise our correspondent with regard to which fruits pay best. They are all profitable, providing a good market for each is at hand, and upon this everything must hinge.

PROFITABLE APPLES.

510. SIR, I have a few trees, such as Greening, Blenheim Orange, and Wagner, that ought to be grafted. What kinds would be the most profitable?

S. K. MERCER, *Burnhamthorpe.*

We would recommend our correspondent to try Duchess and Gravenstein for summer and fall apples, and Wealthy, LaRue and Ontario for winter apples. They are large and profitable kinds.

GRADING APPLES.

511. SIR,—I saw an article in your paper on the proper method of grading apples, which I do not understand. If I had to grade them up to that size, I would not have one barrel out of four or five from a tree, fit for shipping. Suppose an apple would measure $3\frac{1}{4}$ or 4 inches across, how much smaller would go in for first class?

S. K. MERCER, *Burnhamthorpe.*

Our correspondent does not quite understand the object in publishing the scale of sizes. It was simply for use in describing fruit. There is so much confusion in describing apples, some writers differing very much from others in what they mean by large or small.

INSECTS ON CELERY.

512. SIR,—I have a quantity of fine celery and am much troubled with "snails and elaters." Is there anything I can do to drive them away? The soil is black muck and grows celery finely.

Geo. C. BASCOM, *Galt.*

Reply by Prof. James Fletcher, Entomologist, Central Experimental Farm, Ottawa, Ont.

I wish your correspondent had sent you specimens of what he called "snails and elaters." His snails, I opine, are slugs, and with regard to elaters, is it the grubs (wire worms) or the perfect beetle, to which he refers? I imagine that by this time the celery is being dug, and what is wanted is a remedy for next year. For slugs, frequent dressings with freshly slacked lime, sown broadcast over the beds at night time, have proved the best remedy. For wire worms we have no satisfactory remedy. Prof. Comstock, of Cornell University, after careful study has only been able to prove that many of the reputed remedies were useless, such as sowing salt and the cultivation of buckwheat and other crops. Plowing as late in the fall as possible is considered useful, also the destruction of the insects by poisoned baits spread over the infested ground.

ONE JUDGE SYSTEM.

513. SIR,—In question budget (No. 9) some one asks, "Is the one-judge system at fairs an advantage over having three judges?" I do not think it is. Of course, there is an advantage in having only one judge to pay instead of three, but, as an exhibitor, I am a sufferer. At our fair I exhibited a peck of potato onions, as beautiful a sample as was ever seen. We had only one judge, and he did not give me a prize. He declared they were not potato onions. Had there been three judges, no doubt I would have had my right. Such ignorance does societies great harm.

THOS. HALLOWAY, *Clinton, Ont.*

It is quite possible for three judges to make mistakes as well as one. The great point is to secure competent men, and surely such can only be secured by liberal reward. Were the money paid to three judges given to one, an expert could be secured, in whose judgment the public would have confidence. This would surely be better than three judges, none of whom were experts. If the one judge is not an expert, it would be far better to have three.

BLACKBERRY LEAF BLIGHT.

514. SIR,—Many of my Kittatinny blackberry leaves are turning yellowish as if with rust. I enclose samples, can you tell me what to do with them?

WM. McMURRAY, *The Rectory, Niagara.*

Reply by Prof. James Fletcher, Central Experimental Farm.

I have submitted the leaves to Prof. Halstead and he has decided that the leaves are attacked by the fungus disease *Septoria rubi*, West, which is of the common leaf spots of the *Rubus* family. It resembles very much the Strawberry Leaf Blight, *Sphaerella fragariae*, which is figured in a paper on "Some Problems in Horticulture" read by our editor before the Hamilton Association. This disease will probably yield without difficulty to the treatment of the Bordeaux mixture. Your correspondent is correct in stating that the disease is injurious to the blackberry plants.

LOCATION FOR GROWING FRUIT.

515. SIR,—Do you think the sand in Pelham, or the soil about Grimsby best for grapes and small fruits? What ought fifteen acres of good soil and orchard, or small fruit, without any waste, to be worth, first, clear and under cultivation, and second, with fruit? I am offered fifteen acres of sandy soil, cleared, for \$1,500. It has no buildings.

W. A. CLAPTON, *Fenwick, Ont.*

Questions like these can only be answered approximately, there is so much to consider which cannot be put on paper. In some sections of country land is worth more without an apple orchard than with it, because good markets are so inaccessible that there is no opportunity of selling the surplus. Generally

speaking, where markets are accessible, land is increased in value two or three times by being set with good varieties of fruit and properly cared for. Such land as is described, can seldom be purchased at less than \$100 an acre, and our subscriber appears to have a good offer under consideration.

BOOK ON NURSERY WORK.

516. SIR,—Is there any work on hybridizing, budding, grafting, etc.?

A. C. CHAPMAN, *Frankford, Ont.*

The most useful books for the amateur on these subjects is Thomas' *American Fruit Culturist*. Bailey's *Nursery Book*, also give pretty full directions on nursery. Both of these books are advertised in this journal.

GOOSEBERRY LEAF SPOT.

517. SIR,—Will you kindly tell me in next month's HORTICULTURIST why the leaves of my red currants dry up and all fall off; at this time they are all bare and are now starting to put out new leaves, they are mixed alternate with black currants, five feet apart, and get same attention as black, yet the black are looking splendid and doing well, while red are not making any growth, and looking like winter, all bare. I have enclosed a leaf. Kindly give me what you think reason and remedy for same, and you will greatly oblige.

HERBERT BLYTH, *Whonnock, B. C.*

Reply by Prof. Fletcher.

The red currant leaves, from our correspondent at Whonnock, B. C., are attacked by the common disease *septoria ribis*, the gooseberry leaf spot. This disease is prevalent through Canada. An interesting observation has been made this summer by Mr. Craig, that upon some gooseberry bushes which were protected against the mildew by the carbonate of copper treatment, the *septoria* upon the leaves was about as abundant as on the untreated leaves. It is questionable whether spraying bushes for this trouble would pay for the material and the labor. The injury does not show itself here until August, and very frequently a second crop of leaves produced. I shall try some experiments next year upon this disease, with Bordeaux mixture, as this annual defoliation must have a very weakening effect upon the trees.

GOLDEN-LEAVED ELDER.

518. SIR,—I send you sample berries of the Golden Leaved Elder. I think a note of this beautiful showy golden leaved shrub would be of interest to the many readers of the CANADIAN HORTICULTURIST. I find them perfectly hardy, bearing fine large fruit, as you will see by samples sent. With its striking golden foliage, it is a shrub worthy of a trial, both for fruit and for ornament.

M. MILGAU, *Bright, Ont.*

Where golden colored foliage is desired on the lawn, this would be no doubt one of the most satisfactory shrubs. Even the common elder is counted

by some landscape gardeners as worthy of a place in the lawn. Mr. Geo. Nicholson in his "Illustrated Dictionary of Gardening," says: "The Golden Elder (*Sambucus nigra aurea*) is a fine ornamental plant for shrubberies or for use in sub-tropical gardens. If the shoots are regularly pinched off at the tips, the plants may be kept dwarfed and of a fine golden color all summer.

BUTTER AND EGGS.

519. SIR,—I enclose you a weed that I planted in my garden last year, and this year it has spread in every direction. The root goes down about a foot and breaks easily, so I do not know what to do with it.

J. M., *Sturgeon Falls, Ont.*

The plant is *Linaria Vulgaris*, commonly known as Toad Flax, or Butter and Eggs, and is difficult of eradication. Digging or plowing the ground in summer, when the plant is in full bloom, should destroy it.

A HYBRIDIZED GOURD.

520. SIR,—Last year I grew some mock oranges and saved one of them for seed which I planted this year, but, instead of bearing mock oranges it has something resembling vegetable marrow, in color, size and shape. As I cut the orange open and planted the seed at once, there was no chance for a vegetable marrow seed to get in with the others. Do you think it would be safe to eat it? Possibly the bloom of the mock orange was affected by bees last year.

HENRY BENNER, *Ayr.*

The mock orange belongs to the gourd family, and so does the vegetable marrow, pumpkin, musk melon and Hubbard squash. These, when growing near each other, very often cross, and, either on this account, or through the agency of bees, the curious instance before us has come about. Probably the mock orange from which the seeds were taken was grown near a pumpkin vine, or a vegetable marrow, and was fertilized by its flower. The seeds therefore produced what is neither the one thing nor the other.

❖ Open Letters. ❖

ERRATA.

SIR,—I beg to correct some typographical errors which appeared in my apiarian article in last issue, and which naturally alter the sense. In the last line on p. 317 read wire *gauze* instead of wire "gauge." In the next sentence (on following page) read *broad* section frames instead of "brood" section frames; and *tin* separators instead of "ten" separators.

ALLEN PRINGLE.

PRINCE OF WALES PLUM.

SIR,—We have just received a copy of the November No. of the CANADIAN HORTICULTURIST, and find the Prince of Wales plum described in it. It is not a new variety. We had a tree in bearing as long ago as 1859. We always thought well of it, but the demand for it was never great, and hence, when reducing the number of varieties, it was dropped out from our propagating list. We merely draw your attention to this to show that it is not a new variety, although not well known.

ELLWANGER & BARRY, *Rochester, N. Y.*

THE ENGLISH APPLE MARKET.

According to latest advices, Canadian winter apples are now in good demand in the British markets. Unfortunately, the immense quantity of fall apples and poor grade winters have been depressing prices terribly, but now the quantity is so much lessened that quite a re-action is setting in.

Henry Theakstone, Liverpool, under date 9th November, quotes Baldwins 11/ to 14/9; Greenings 10/ to 16/; Kings 14/ to 20/; Ribston 18/; Canada Red 12/ to 13/.

Jas. Adam, Son & Co., under date November 18, quote Baldwins 13/ to 15/; Spies and Greenings 13/ to 14/6; Russets 12/ to 14/6.

Messrs. Woodall & Co., under date 12th November, quote the following as quotations of actual sales: Baldwins 12/ to 17/; Baldwins, 2nds, 8/ to 11/; Spy 8/6 to 16/3; Russets 10/3 to 16/; 20 oz. 11/6 to 16/; Greenings 11/3 to 15/6; C. Red 12/6 to 15/6; Kings 13/ to 20/6; Ribston 14/ to 18/6; Ben Davis 13/ to 16/; Snow 8/ to 13/.

Messrs. Frank Rand & Co. Spitalfields Market, London, Eng.; John See & Sons, Hull; B. & J. Shaw, Hull, and many others, give us weekly quotations of sales, which fairly correspond with those above given.

It may be explained that figures above indicate shillings and pence, the former equalling twenty-four cents, the latter two cents each.

The *Trade Journal* of Montreal, under date 25th November, says of the apple market in Montreal: "The market remains in a very unsatisfactory condition, stocks being large both here and in the West, which are selling at prices which show little or no profit to holders. The sale of 500 barrels of choice winter varieties took place at \$2.50, and we quote fair to good sound stock in car lots \$2.25 to \$2.50 per barrel. Some are asking \$2.75.

THE CHRYSANTHEMUM SHOW in the Pavilion of the Horticultural Gardens, Toronto, from the 8th to the 11th of November, was a grand affair, and reflected great credit upon the Toronto Florists' Club.

Question Budget

11.—Has any member had any experience with the Burdeaux mixture, or any other solution for the red rust on the strawberry leaves?

12.—Could a better package be devised than the ordinary barrel for apples, for shipping long distances?



AT THE FIRESIDE.

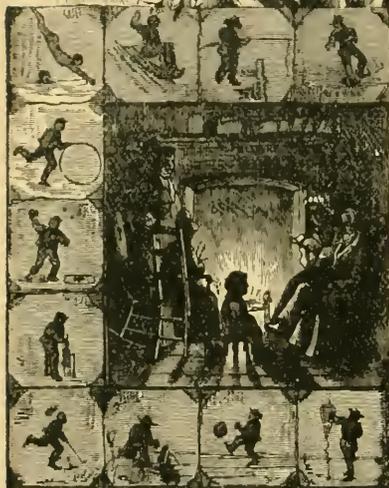
At nightfall by the firelight's cheer
My little Margaret sits me near,
And begs me tell of things that were
When I was little just like her.

Oh, little lips you touch the spring
Of sweetest sad remembering,
And hearth and heart flash all aglow
With ruddy tints of long ago.

at my father's fireside sit
Youngest of all who circle it,
And beg him tell me what did he
When he was little just like me.

JOHN D. LONG

E.H.S.





OCT 13 1965

