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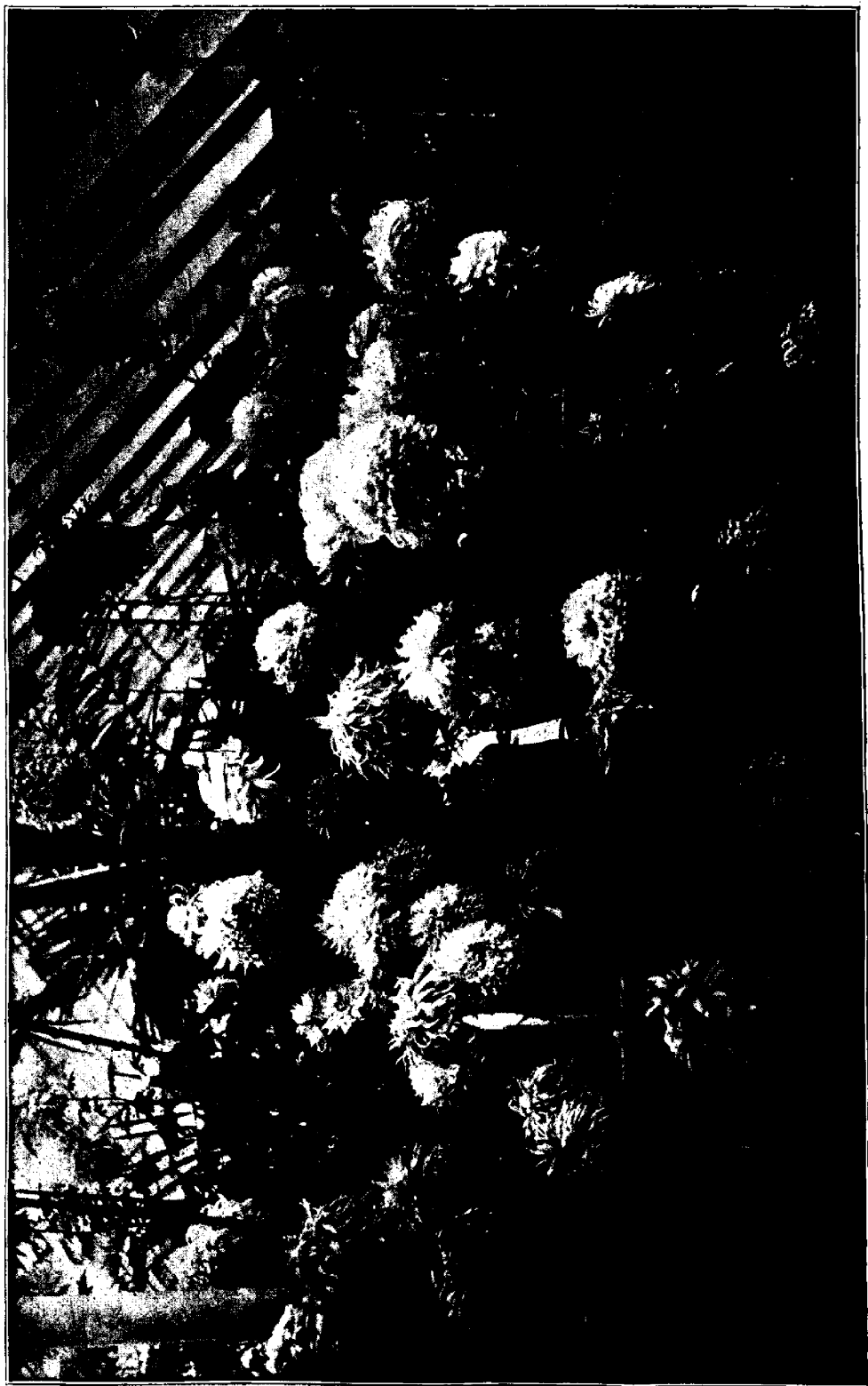
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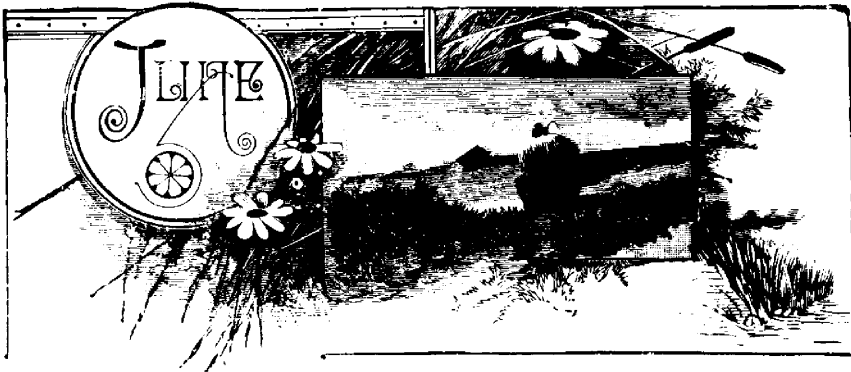
A VIEW IN THE GREENHOUSE AT "THE GORE," THE RESIDENCE OF MRS. D. GOLDIE, AYR, ONT. (From a photograph.)

THE CANADIAN HORTICULTURIST.

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1897.

No. 6.



A VIEW IN A GREENHOUSE AT AYR.



OUR readers who have taken an interest in the views of the chrysanthemums at Guelph, will also be pleased with a glimpse of what is being done in a private greenhouse at Ayr.

The wealth of huge blooms of chrysanthemums is magnificent, and is enough to inspire the most uninterested with some ambition to grow these beautiful children of Japan. The other photograph of *Brugmansia arborea* is also good, showing this plant in a cool house. This plant belongs to a class of ornamental plants, trees and shrubs, called *Datura*, which name is usually given to the annual species. The shrubby ones are known as *Brugmansias*. This one is a greenhouse shrub from seven to ten feet high, which was introduced into England from Peru in 1713.

We append a letter, which accompanied the photographs:

Sir,—I notice in Dec. '96 No. of the CANADIAN HORTICULTURIST, your query as to why more of your readers do not take more interest in your journal by writing for it. I have for some time wondered whether you cared to have any notes of experience from your readers or not, and therefore to show you my appreciation of your Journal, beg to send you a photograph of a view in the greenhouse here during chrysanthemum time; our local artist failed to get a view of the entire length of the house which contained some hundreds of these lovely flowers. Out of some thirty varieties the ones principally seen in the picture are Ivory, Nircus, Queen, V. H. Hollock, Golden Wedding, Mutual Friend, Thos. Emerson, Ada Spaulding and Louis Bonheur. Should you care to have it I would be very glad to give you some of the methods followed by me in growing these flowers to be published in some future issue.

I am sir, yours very respectfully,

THE GARDENER,

at "The Gore."



FIG. 1119.—*BRUGMANSIA ARBOREA*, IN THE GREENHOUSE AT AYR.

VIRGINIA CREEPER AS A LAWN OR BACK YARD SCREEN.

IN going over some negatives secured on a trip taken last autumn in company with Prof. Waugh, Horticulturist of the Vermont Experiment Station, through the principal apple growing region of Vermont, viz., Grand Island county, I came across one of which the accompanying illustration is a copy. It is offered to the readers of the HORTICULTURIST with a view of

with the very general use that was made—particularly about Burlington—of the Virginia Creeper, in covering stone walls, summer houses, and back yard fences. The effect late in September was pleasing in most instances. Here and there it was over done. The illustration shows how it was used with good effect as a lawn screen. The growth was luxuriant and completely hid from view the lattice

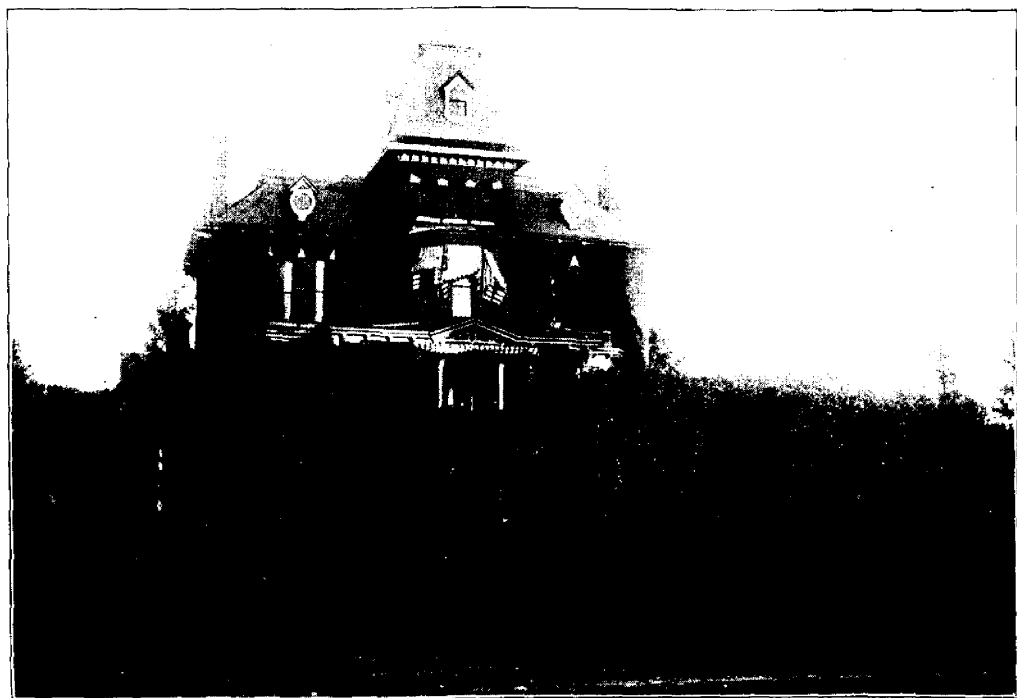


FIG. 1120.—RESIDENCE AT BURLINGTON, VT.

calling to mind one of the useful services our vigorous and sometimes unappreciated native *Virginia Creeper* may be called upon to perform.

Many people, especially those from the British Isles, like to secure to themselves a certain amount of privacy within the limits of their lawns. Hedge plants and stone walls give a stiff formal and forbidding expression to the front lawn—other causes may also prevent the use of these boundary agents. I was struck

work fence over which it clambered. The varying height of the screen from 5 to 8 feet took away the hedge like effect which it otherwise might bear. The grounds about the house had evidently been laid out and planted only a few years ago which suggested the possibility of the vine screen being used to cover the nakedness of the lawn till the shrubs and trees were sufficient of themselves. The effect at any rate was very pleasing.

J. CRAIG.

THE VIOLA.

ON the alps in central Europe, on the Andes in S. America, as well as in our British fields and hedgerows, *Violas* of many species grow and flourish—true “Wildings of nature,” and many of our modern garden varieties retain a robustness of constitution and are regardless of extremes which they must have acquired and inherited from progenitors who were wanderers by flood and field. This will almost serve to show that their culture is a very easy matter for in any good ordinary garden soil which has been enriched by manure, *Violas* will grow, and grow well. They are not particular as to situation or exposure, provided they are planted out early, and get thoroughly established

before the warm weather sets in. The ground should be deeply dug in spring, or as soon as frost disappears, and a liberal quantity of decomposed manure incorporated with the soil, and also a quantity of soot—say a spadeful spread over every ten square yards. Just before planting, the surface should be broken up with a rake and made firm and fine, a good dry day being chosen for the work. Seeds may be sown now, in a shady portion of the garden, but I would advise amateurs to procure this year's requirements from any florist or nurseryman, as seedlings I think would need protection in winter.

F. BRUNTON.

Maplehurst, Grimsby.

DAHLIAS.



FIG. 1121.—DAHLIA.

NEARLY all the various forms and varieties of Dahlias have been obtained from some single flowered varieties imported to England from Spain nearly one hundred years ago. Being so easily grown, Dah-

lias are always prominent among our garden flowers, although of late the stiff show varieties of large size seem less popular than formerly. Indeed, the single flowered varieties have been much sought after by those who admire the Daisy and the Marguerite. Cornell Bulletin 28, gives many interesting pointers about Dahlias, from which we give some extracts with illustrations. Of late those single Dahlias have been made dwarf and compact in habit, and a race of them is known as “Tom Thum Single Dahlias,” which are much appreciated.

To show what numbers of varieties of Dahlias have been originated, we note that in 1841 one English dealer had over 1,200 varieties.

“In the forties and fifties variegated flowers were in great demand. Dahlias were striped, banded, speckled, penciled, dotted, blotched, and marked in all sorts of curious ways. There was as much

DAHLIAS.

ingenuity in the invention of these unstable compounds as is now displayed in designs for wall paper and oil cloths. These things were catalogued under the "Fancy" class, for the English divide the large-flowering varieties into "Show" and "Fancy." The "Show" section contains the "selfs," that is those varie-

ties each of which has but a single color.

There was not a single new or original idea in the evolution of the dahlia until 1873 at the very earliest, and whatever freedom or grace the dahlias now have is traceable to a single plant that bloomed for the first time that year. Instead



FIG. 1122. — MRS. A. PEART. A WHITE CACTUS DAHLIA.

ties each of which has but a single color."

In the evolution of the Dahlias too much attention has been paid to color, and not enough to form. Those 1,200 varieties of 1841 were too much like 1,200 variously painted balls of two sizes. How much better would it be to have

of short, stiff, artificially formed rays, this flower had long, loose, flat rays with pointed or twisted ends and the peculiar red that is associated with cacti. This variety was named *Juarezii*, in honor of Juarez, President of Mexico, and first offered for sale in 1874, by a Dutch merchant. This was the parent of the

THE OXALIS.

so-called cactus dahlias, a name which seems far-fetched now-a-days. It was the color and not the form that gave the point to the comparison in the first place, and we now have a very great variety of colors in that form—colors that do not necessarily remind one of cacti. The white variety, *Mrs. A. Peart* (Fig. 1122), has a form very similar to that of the brilliant red cactus dahlia pictured in 1879. The cactus type has been kept quite pure, and of late years it has also been modified into some of the loose and

flowing forms of the Japanese chrysanthemums.

The place for dahlias is the garden.—They can never have a place in landscape gardening because the first frost kills them. I often think their strength is dissipated when they are strung along a walk or other border. Personally, I believe in flower beds, but not in the middle of a beautiful green lawn. The grass has a quiet story to tell, and if dahlias intrude they should be put out for disturbing the peace.

THE OXALIS.

MOST of our housekeepers who are flower lovers have taken pleasure in the thrift and daintiness of the old-fashioned *Oxalis rosea* and also *Oxalis alba*, which they generally know as pink and white Shamrock; but they have not discovered half the possibilities of this gem of plants. It embraces a number of species of pretty, neat growing plants, elegant in foliage and bloom, the latter being produced in great profusion, and embracing a wide range of color. It is one of the most satisfactory of bulbs for window culture. For potting, use a good rich soil with a sprinkle of sand in it, placing from one to three bulbs in a four inch pot; stand in a dark cool place for a few weeks to root thoroughly, then remove to a sunny situation in the window, or conservatory, in a temperature of about 60° Fahr. One of the best varieties for window culture is *Oxalis alba* illustrated by the accompanying cut. It will be seen that this is not the old *Oxalis alba*, but an improved *Oxalis alba*, having much larger blooms and of which the foliage branches out from a parent stem. Its dwarf, spreading habit and profuse bloom make it unsurpassed

as a table plant. Flowers and leaves fold at night and open in the morning as with the old variety; unless the plant is grown in a partially shaded situation, when the flowers remain open all night. *Oxalis Bermuda* buttercup, the newest of yellows, is of more luxuriant growth, and blooms in greater profusion than *Oxalis alba*; one bulb will be sufficient for a five or six inch pot. The flowers are of purest buttercup yellow, and of great substance. Well-grown plants have produced as many as seventy-five flower-stems, and over one thousand blooms in one season. The bulbs of this *Oxalis* have been grown in the congenial soil and climate of Bermuda, until the bulbs have attained great strength, hence the wonderful flower productiveness. I might here mention *Oxalis lutea*, a splendid large, canary yellow, of strong, upright growth; the leaves of a dull green color, with a deep purple tint on the reverse side. This, in a small pot, will materially brighten up a collection of plants. While growing, the plant should be frequently turned so that all sides may get the power of the sun, that the growth may be symmetrical. Water regularly, making sure the roots, as well as the upper

STEPHANOTIS.

soil, get the water, if you wish a thrifty plant, one which will, through its season remain a thing of beauty. During the resting season, which varies somewhat with different varieties, but which usually takes place about autumn, the plants

should be watered sparingly, once or twice a week according to the moisture of the atmosphere. One last word ; if you can only grow one kind, grow alba.

M. HODGES.

Commercial Greenhouses, Orillia.



FIG. 1123.—OXALIS ALBA (IMPROVED).

STEPHANOTIS.

M R. WALTER T. ROSS, Secretary of the Picton Horticultural Society, sends us the photograph from which the accompanying engraving is made, with

the following lines :—

“ Prof. Craig, asked me to send you the photo of my Stephanotis for THE HORTICULTURIST, giving you the history of it ; he said a new picture would be

STEPHANOTIS.

better, and if you would prefer it, I will try and get one printed from the negative, as I suppose the photographer still has it, and send it to you.

"I grew the plant in my office win-

The picture does not do the plant justice, as the photographer instead of having the plant and the camera on the same level, placed the plant in the street and the camera on the sidewalk, which



FIG. 1124.—STEPHANOTIS.

dow, after it was started from a slip. It was nine years old when the picture was taken, and had forty-five large bunches of fragrant flowers and buds on it, which perfumed the air for quite a distance.

was much higher, so this gives the plant a dwarfed appearance. The plant beside the Stephanotis is a small orange tree, with two oranges on it."

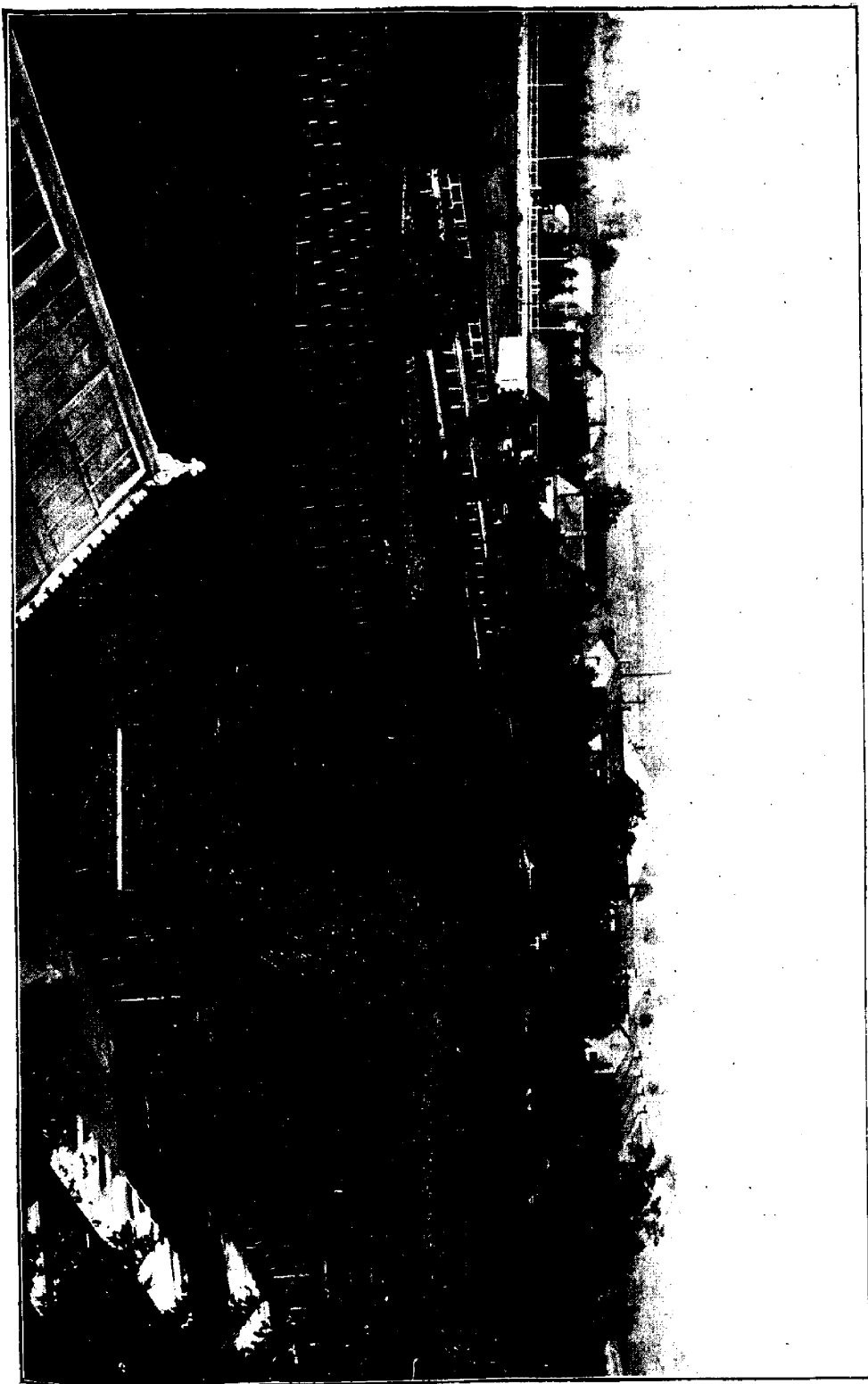


FIG. 1125.—VIEW OF VEGETABLE GARDEN AND STRAWBERRY PLOTS, O.A.C., GUELPH, ONT.

❖The Orchard and Fruit Garden.❖

STRAWBERRY EXPERIMENTS AT GUELPH.

DURING the season of 1896, Prof. Hutt carefully tested one hundred and twenty varieties of strawberries, and as a result was able to prepare an excellent paper for our meeting at Kingston. In our engraving of the Garden at the College, may be seen the strawberry plot, with the stakes indicating the varieties, twelve plants of each being planted for the experimental purposes.

We quote the portion of the paper

referring to early, late and large-sized varieties, as follows :

EARLY VARIETIES.

The first two or three pickings from a good early variety often prove more profitable than the whole crop from a later variety. In the following list the best early varieties are ranked in the order of their yield for three pickings previous to June 15

Rank.	Early Varieties	Sex.	Date of first picking	Yield before June 15th.	Total yield.	Rank for total yield.
				ounces.	ounces	
1	Van Deman	B	June 8	80.00	141.75	47
2	Rio	B	"	70.75	153.50	43
3	Michel's Early	B	"	68.25	140.50	48
4	Warfield	P	"	67.75	294.00	1
5	Afton	P	"	59.75	264.00	2
6	Kossuth	B	"	55.50	113.25	64
7	Bessie	B	"	53.25	137.00	51
8	Gertrude	B	"	51.00	179.50	23

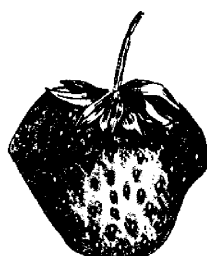


FIG. 1126.—
VAN DEMAN.
uniformly of good size and very handsome, of a rich dark crimson color and

Van Deman (B.)—
A good grower and fairly free from rust. An early, perfect bloomer, one of the best to fertilize early pistillates ; season of fruiting extra early ; ranks first for early yield. The fruit is

varnished appearance ; firm and of good quality ; should be in every collection.

Michel's Early (B) —
A rampant grower, but rusts badly. Ranks third as an early yielder. The fruit is small, of poor color, and lacks in firmness. Very generally grown but cannot equal Van Deman as an early variety.

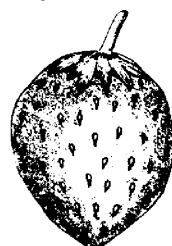


FIG. 1127.—
MICHEL'S EARLY.

STRAWBERRY EXPERIMENTS AT GUELPH

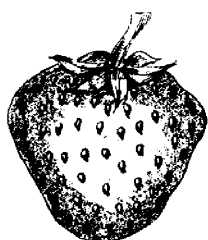


FIG. 1128.—WARFIELD.

Warfield (P).—A rampant grower, making too many plants; rusts some; heads the list this year for productiveness, and ranks fourth as an early yielder. The fruit is not large, but of medium size and very dark crimson color; firm; a good market variety and one of the best for canning. On light soils and in dry seasons, it often dries up and gives very poor yields; but for heavy moist soils, it is one of the best.

LATE VARIETIES.

The late varieties are not as a rule so profitable as the early ones; yet a few of them are very desirable in every collection, to extend the fruiting season. Some varieties gave light pickings as late as July 21st. The Alpine was still fruiting when frost came; yet these very late pickings were hardly large enough to be taken into account. In the following table are given a few of those varieties that gave the largest yields, ranked in the order of their yield after July 1st.

RANKS.	LATE VARIETIES.	SEX.	Date of last picking.	Yield after July 1st.	Total yield.	Rank for total yield.
1	Edgar Queen.....	P	July 9	54.50	244.50	3
2	Equinox.....	B	"	53.25	138.00	50
3	Mrs. Cleveland.....	P	"	46.25	206.25	9
4	Dr. Arp.....	P	"	29.75	163.75	32
5	Belle (Crawford's 51).....	B	"	28.50	180.50	22
6	Hatch Experiment Station 24.....	B	"	27.00	97.25	72

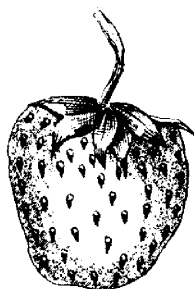


FIG. 1129.—EDGAR QUEEN.

Edgar Queen (P).—A new variety of great promise. Plant, very vigorous, but rusts considerably. Fruit large, rather light in color and moderately firm, valuable on account of its large late yield; ranked first as a late variety, and second for total yield.

Equinox (B).—Plant, a free grower, but very liable to rust. Berry, large, dull scarlet; seeds, few and deeply pitted; rather unattractive; ranked second

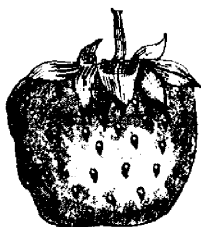


FIG. 1130.—EQUINOX.

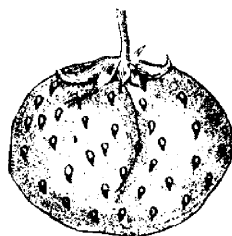


FIG. 1131.—

Mrs. Cleveland (P).—This variety has received adverse criticism elsewhere, but has done remarkably well here. Plants are very vigorous, But rust badly; ranks ninth for total yield, and third among the late yielders. Berry is of medium size, rather light in color and only moderately firm.

LARGE BERRIES.

The comparative size of the berries of the different varieties is recorded by giving the weight of 50 average sized berries. In the following table those varieties bearing the largest berries are ranked according to the size of berries.

STRAWBERRY EXPERIMENTS AT GUELPH.

Rank.	Large Varieties.	Weight of 50 average berries.	Rank for total yield.	Firmness.
		ounces.		
1	Mary.....	21.50	57	V.F.
	{ Bubach.....	20.50	18	F.
2	{ Phillips.....	20.50	27	F.
	{ Gandy.....	19.50	19	S.
	{ Belle.....	18.00	22	F.
	{ Marshall.....	18.00	67	F.
7	{ Ohio Centennial.....	17.50	54	F.
	{ Williams.....	17.50	31	V.F.
9	Aroma.....	17.00	62	F.

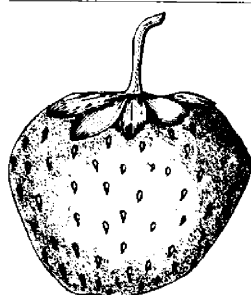


FIG. 1132.—MARSHALL.

so large a berry; only moderately productive, but worthy of further trial.

Mary (P).—A new variety of great promise. Plants are strong and vigorous. Berry larger than any other we have ever seen: well shaped: of good

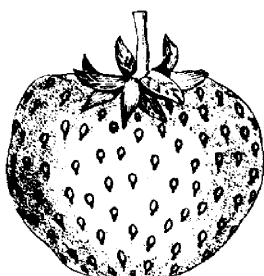


FIG. 1133 —MARY.

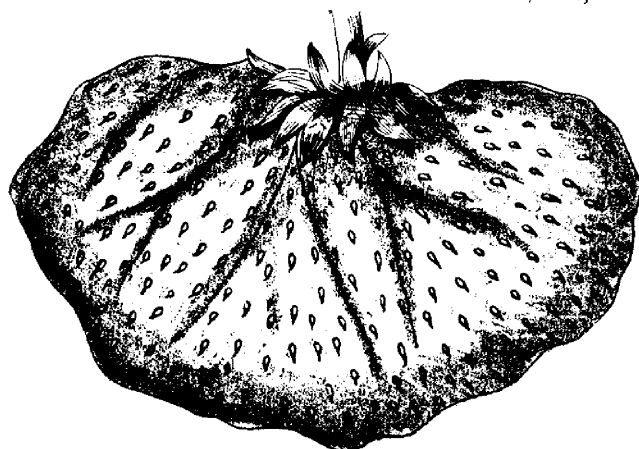


FIG. 1135.—BELLE.

dark crimson color, and quite firm. Well worthy of trial.

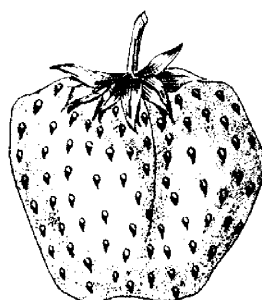
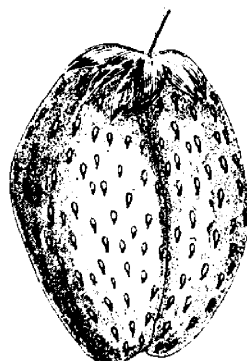


FIG. 1134.—BUBACH.

very large and of bright showy color; firm for so large a berry and of good quality; one of the best for home use or near market.

Belle or Crawford's 51 (B).—Plant vigorous and healthy; berries very large, irregular in shape, long, and many of them fan-shaped. The cuts are the exact size of specimens grown here. Color, bright crimson; flesh firm and of good quality. Late and very productive.



BELLE.

EXTENSION OF FRUIT GROWING.—II.

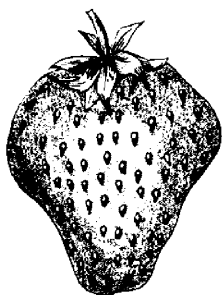


FIG. 1136.—WILLIAMS.

Williams (B).— Plants are vigorous but somewhat liable to rust: fairly productive: ripens mid season. Berry large, very seedy: and dark crimson, and firm. A good market variety.

STRAWBERRY WHIPPED CREAM.—Rub two pounds and a half of strawberries through a sieve, and add half a pound of powdered sugar and one quart of whipped cream. Place a layer of macaroons or any small sweet biscuit in a dish, add a layer of the strawberry whip, then another layer of biscuit, and continue alternately until the cream is used up. Set aside in a very cold place, or on ice, and serve in the dish in which it is prepared

EXTENSION OF FRUIT GROWING. —II.

By E. D. SMITH, WINONA.

WE can grow plums cheaper than any other place of wide area in America. We can grow them and make money at 10 cents per basket, basket included, in a year of heavy crop like the past year; if we get an occasional crop at good prices, which we are sure to do. There is no limit to the market for plum jams, when our jam factories and canneries can rely upon a steady supply of plums every year at moderate prices, they can then open up with confidence a trade with the tropical countries, that want our acid fruits and are willing to pay a fair price for them. I believe the low prices for our plum crop of 1896 was the best thing in the long run, we could have had. It will introduce our fruits into distant markets where they were hitherto unknown, and create a demand for our plums in countries that will in future become good customers, to say nothing of the home market in Quebec and the North-West, that will take enormous quantities of canned plums if cheap enough to compete with the 2,500,000 pounds of prunes imported into this country from California annually. The truth of the matter with regard to plums is, that in good plum

districts we have been making unusual and unreasonable profits, but like grapes many years ago, we have up to the present, only had small areas under cultivation.

Now when our ten acre fields are coming into bearing we must not expect the fabulous profits, per acre, of the past, but must rather compare our profits from a ten acre field of plum trees with the profits from a ten acre field of corn or oats or other farm crop. It costs little more to care for a field of plum trees than a field of corn. We should be content to make a reasonable profit in these days when the majority of farm crops are grown at a loss rather than any profit at all. Let any man figure up the net profit of ten acres of oats at 20 cts per bushel, or 10 acres of corn at current prices and if he can figure out any profit on the crop and allow wages at \$1 per day, and other actual costs of growing the crop, he is a better arithmetician than I am. Now there yet remains two most important fruit crops to discuss, viz., pears and apples, both of which can be grown over widely extended areas. I am very optimistic about both of these crops, I believe at present the outlook for the

EXTENSION OF FRUIT GROWING—II.

greatest profit in fruit growing lies in pears; we have not enough good pears planted to supply the Canadian trade. Pears can be grown as cheaply as apples, our lowest figures so far have been \$2 per barrel, net, here on the ground. At this price there is a mint of money in this fruit.

Everybody says "Oh! the blight will kill them," and this bogey scares them out of the notion entirely; but they will go planting potatoes that rot and are destroyed by bugs and that can't be sold when grown during two years now past, or wheat that is winter killed two years out of three and produces five or ten miserable bushels per acre or oats that rust, and are never afraid of these blights. A pear orchard can be grown with little appreciable loss from blight by careful attention. It is not the purpose of this paper to discuss diseases, but rather markets. I have said there are not enough pears now grown to supply our own market, some one wishes to know the proof. The proof lies in the fact that scores of car-loads of Bartletts are imported into this country every year.

Another proof is that we could not find enough Bartlett, Anjou, Sheldon or L. Bonne pears of first-class quality to supply our orders at Winona this year. Another proof is that none of these varieties sold for less than \$3 to 4 per barrel in Montreal this year with all the loads of cheap fruit of all kinds from this and foreign countries on our market. But aside from this home market which is supplied with our pears properly put up would use double what we have now to offer, there is without a doubt a grand opening in Britain for this fruit, which can easily be laid down there by cold storage. All through the autumn pears brought fabulous prices over there, at least they seem fabulous to us. Think of four cents each at wholesale. The

following is an extract from a letter written by W. N. White & Co., Ltd., prominent fruit merchants, of London, England:

"Pears — Not much doing in this article, in fact, we have never known the market so bare as it is at present. The few coming from France are realizing very high prices, in fact, were it not for their worth here they would have remained at home. We sold Catalacs, a stewing pear, yesterday, 56 in a crate, at 11s the crate, and 96's 15s. Some Californians on the market sold from 15s to 28s per box, according to quality. If any of your readers have got some good pears, no matter what country California or American, that will stand the journey to this country, they are sure to realize good prices."

This speaks for itself, no doubt these extraordinary prices were caused by a short crop in France from whence England draws her supplies, but France may have a short crop again, doubtless often has, and if such prices obtain in years of such low prices for apples, may we not suppose that at least fair prices are obtained other seasons? Unfortunately I have no record at hand, but this I do know; California growers ship their pears to England, double the distance we have to ship, and sell them at a profit. I know furthermore, we compete with France and every other country, in apples, wheat, cheese, and many other commodities, why cannot we do so with pears, a fruit we can grow to the highest state of perfection and in unlimited quantities over a wide area of Ontario and Nova Scotia. Undoubtedly the planting of pears has been badly neglected, as the packing of pears and all our domestic fruits has been. I want to ask a question now, and it is: "Why does California sell fourteen car loads of fruit in Montreal on a single day when we have fruits infinitely better in quality and appearance?" Surely

EXTENSION OF FRUIT GROWING.—II.

if they can find a profit in shipping this fruit 3000 miles over roads that charge very high freight rates and pay a duty in addition, we ought to be able to make a profit when in such close proximity to the markets, with moderate freight rates and no duty. I will answer the question. We are poor packers—California growers put up their fruit in tasty packages, they send only choice specimens, what they do with the seconds and thirds I do not know, I presume they can or evaporate them or make them into jam, but certain it is that only choice fruit comes here and it attracts the buyer and our fruit goes begging. I have heard merchants say that they ceased buying our fruit altogether, they could not depend upon getting it well and honestly packed, and they handled only California fruits.

Now is not this our own fault? There are enormous quantities of these very fruits we grow, viz.: peaches, pears, and plums, etc., displacing the growth of our own orchards, simply because we are trying to dispose of every available specimen to the city consumer whether he wants them or not. Better by far send only the choice specimens to market and feed these seconds and thirds to the hogs, if we cannot find a market for them at the factories. Let us make an effort to regain our lost trade, for I tell you, fruit growers here assembled, our home market is slipping away from our hands by reason of our gross neglect and supineness we have a market in Canada for double the fruit we can grow at present if we put it up in an attractive form, and never, never, cheat our customers by false packing. Now before I close; one word about apples the king of all fruits, for no matter how much we may praise up this or that locality for other fruits, apples are bound to be the great exportable fruit of Canada, for not only can we

grow them to a higher state of excellence than any other country in the Northern Hemisphere, but we also have a larger area capable of producing regular crops than any other country where fruit of good enough quality to compete with ours is grown. We have the fruit; Great Britain and the continent of Europe, our own great Northwest, quite frequently the populous Western States wants it. Here are surely the conditions of a profitable trade: there is but one thing lacking, that is safe and cheap transportation facilities. It is of no avail to say apples were too cheap this year, they cannot be grown at prices current this year. I well remember hearing older men tell of the very low prices of grain when this country was first settled and yet later for fifty years prices averaged much higher; as soon as transportation facilities were offered grain brought good prices—so to-day grain in Manitoba is cheaper than here because of the cost of transportation to Europe. I contend that every first class apple in Canada could have been marketed in Europe this year, and our growers have received 75 cts. per barrel net on the ground for every barrel had we safe transport to Europe, to say nothing of cheap transport. Buyers of apples never have had confidence to buy apples at their fair market value, simply because they do not know when they ship them over whether they will arrive sound or whether half the cargo will arrive cooked, and be sold at any price obtainable for rotten and nasty fruit. I have conversed with numbers of gentlemen who have gone over with their apples and they say there is no doubt about our apples arriving as stated by receivers on the other side. They would not have believed it possible for apples put up here sound as possible to become ruined in two weeks on the cars and in the hold of an ocean steamer.

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Now knowing this to be the condition of apples very frequently on arrival, not this year alone, but every year in the past, can it be wondered that buyers hesitated this year to pay over 50 cts. per barrel, for the big crop of apples in sight and their judgment has been shown to have been correct. I doubt if any man who has shipped forward regularly has made over 50 cts. per barrel out of the fruit, net on the ground, but had there been no slacks and no wasty apples on arrival 75 cts. would have easily been realized in spite of the freight rate to Britain 25 cts. per barrel higher than we frequently have had in previous years. Now see what this means to the farmers of Canada, 75 cts. per barrel for the enormous crop of this year could have been doubtless \$1,000,000 more than they have realized, and would represent clear profit. The all important question arises: can we have safe transport? I say decidedly yes! it is the easiest thing in the world, if pressure can be brought upon the Steamship Companies to put in air fans or air pumps. All it requires to carry our apples over in perfectly sound condition is that the temperature of the hold of the vessel where the apples are stored shall be the same as the ocean air in October and November. We know very well that a barrel of apples put up in September may lay in the orchard exposed to sun and rain and a hundred changes of temperature and still be sound in November as the day it was packed, barring premature ripening caused by such rough exposure. Why then should the same apples shipped, fresh packed and stowed for ten days in an equable and cool temperature of the ocean, decay? No sane person would believe for an instant that they would, how then does it come about? In this way—the excessive heat from the engines

so heats the hold that even the compartments containing the apples are so hot that the apples in some cases become cooked and in almost every instance parts at least of the cargo are damaged, and the whole lot of apples so advanced in ripening that they cannot be held in Britain for any length of time. If this were necessary we would simply have to put up with it, or send by the more costly cold storage, but it is not necessary, any one can see at a glance that passenger steamers could not be run on this happy go lucky principle, passengers would soon kick if the hold gradually got hotter and hotter as they neared the other side until at last they had to undergo the cooking process: and how do they prevent this heating of the hold in passenger steamships, why simply the air fans, that can be run by about one horse power, which conduct the cool air from the outside down to any of the decks and can be let on as required by a tap, there is no more reason for cooking our apples or injuring them in the slightest degree in going across the ocean, than there is in cooking them on the cars between here and Montreal. But the Steamship Companies will do nothing until forced to do it by the pressure of the votes of the people through the Government, and this surely will not much longer be delayed. Again, had the safe transport been provided our dealers would have long ago opened up markets in not only Great Britain, direct with the dealers and storekeepers there, but with dealers in Germany and other Continental countries where this season every apple grown in Canada could have been marketed at a good price.

The illimitable North-West can force us to the wall growing wheat, oats and beef and ultimately when milking machines become perfected also in butter and cheese, but apples they must buy

EXTENSION OF FRUIT GROWING.—II.

and there is no apple they will look at, when they can get our Northern Spys and Greenings.

Are they all going to become merchants or mechanics or the paternal acres still going to be worked? Are these acres to become barren wastes or are they still to be planted with something to produce a crop to sell? I judge they will be planted each and every year with something. Fruit planting will not be overdone until the profits are less than the profits from some other branch of farming. We cannot grow more grain here in the valley per acre than they can in other sections, so when fruit growing ceases to be more profitable than other lines of farming, land will be worth no more per acre, a fall of one half from its present value. Is there a grower in this room believes that such will ever be the case. I scarcely see on what ground any man can look for a permanent betterment of present conditions in the grain, dairy, or meat industries and I can scarcely see

how any profit lies in any of these branches now. What then are the farmers of Canada to do. It seems to me reason would teach us to plant that which our competitors cannot grow. If you live in a peach section and have land suitable, plant peaches, for there are few sections can grow these. If on the other hand you cannot grow peaches, cherries or grapes; perhaps you can grow plums, if not plums then perhaps pears, and if not pears then you certainly can grow apples, the choicest in the world; neither the North West or the Western States, nor the Southern States, neither Australia, Argentine Republic, India, Denmark or Germany, all our competitors in some one or other lines of farming can grow apples to compare with Ontario or Nova Scotia. We have the whole world for a market, with safe transport and reasonable rates. In no other branch of farming have we so much of an advantage; so I can safely say planting of fruit orchards, vineyards, etc., has not been overdone in Ontario.

FLOWERS FOR WET CORNERS.

DO not despair if a portion of your lawn is swampy or boggy; consider yourself well favored, for here you can plant moisture loving plants, the poor man's orchids as some writers call them: irises, or flags *fleur-de-lis* (the royal insignia of France), than which there is nothing so beautiful and nothing that repays so well the little labor expended on them. The different species are English, German, Siberian, Spanish, and Kaempfer's from Japan. Plant the Japanese beauties in the wettest places, and the others along the edge of your bog. Place a clump of our native typha, or cat-tail in their midst; bring some yellow spatter-docks, with their rich, shining green leaves, from the ponds or low shores of the river. In this swampy situation astilbe does

well; and by all means bring home with you from the brookside, *myosotis*, forget-me-not; some cinnamon ferns; the native brilliant cardinal and the giant blue lobelias, the swamp milkweed, *asclepias incarnata*; the native pitcher plant *sarracenia*; calopogon, a lovely bog orchid; sagittarias, or arrow heads, and pontederias, or pickerel weeds. If there is sufficient water to form a basin, you can add *nymphaea*, our native pond lilies, and the stately umbrellas of the *Nelumbium*. Your swamp will cease to be an eye sore, and you can feast your vision on the artistic beauties of its denizens all summer. We have said enough about herbaceous perennials; a volume could be written on their beauty and excellence.—Report Hort. Soc., '95.

LETTERS FROM RUSSIA.—XVI.



FIG. 1137.—JAROSLAV NIEMETZ.

WE have a great many interesting and novel plants from middle Asia, and the railroad now being built will furnish us with more. Some of these are edible and may be worthy of cultivation. At present they are under trial in the Imperial Botanic Garden at St. Petersburg. Being desirous to serve the Dominion Experimental Farms at Ottawa, the officers of which, willingly give me information concerning Canadian fruit culture, I have written to Siberia for seeds of the following plants, the further trial of which will be made at Ottawa and will show whether they are of use in Canada.

1. *Rubus Xanthocarpus*. Bur. and Franch. This new species of raspberry was found in 1885 by the Russian traveler, G. N. Potapin, in China, Province of Kantsu, and was previously described by French Scientist Bureau and Fran-

chet. It is a low plant, about one foot in height with herbal, prickly, suspended leaves. The fruit is ovoid, light yellow, sweet and palatable. At St. Petersburg it ripens about the middle of July. This plant has proven hardy in Northern Russia and is fit for cultivation on a large scale.

2. *Ribes Dikusha*. Fish. (Blue currant of Siberia). This species was discovered by the Russian-botanist N. T. Turchaninoff in Eastern Siberia and was described by botanist Fisher. It very much resembles the common black currant (*Ribes nigrum*) but there is a difference in the forms of leaves, calyx and pistil. In size and flavor, the berries resemble those of black currant, but are blue and green in color. Turchaninoff says that if eaten, they will make people drunk. The plant grows in moist places and is hardy in the botanic gardens at St. Petersburg.

3. *Ribes Procumbens*. Pall. Moss currant, this was found by botanist Pallas in Siberia. It is not new, but cannot be got in European gardens, because of the difficulty in distributing it by seed, and live plants could not endure so long a journey. Formerly the Botanic Garden at St. Petersburg got some live plants from Nerchinsk. The bush is low with creeping twigs, and yields brown berries, twice as larger as those of common black currant. It grows only in moist soil, along rivulets. The edible berries ripen late in summer and are very much esteemed by the inhabitants of Eastern Siberia.

4. *Ribes Diacantha*. Pall. Siberian gooseberry. The bush of this variety resembles the currant, but has prickly twigs and leaves. The berries red, sub-acid and are about the size of common

SOWING SEEDS.

red currant and are much used in Siberia. Along the lake Baykal there are found varieties of this plant with bright red and dark red berries.

5. *Lonicera coerulea* L. var *edulis*. Turch. This grows in tall bush form, and resembles *Lonicera coerulea* Lon., but yields dark blue, oblong berries that are edible notwithstanding other varieties

of *Lonicera*, that yield bitter inedible berries. Around Nerchinsk it is very widely distributed on the mountains. The berries are picked in large quantities and sold in the local markets. They are very palatable and good for drying, for pies and other purposes.

JAROSLAV NIEMETZ.

Winnitza, Podolie, Russia.

SOWING SEEDS.

THE operation of seed-sowing is one of the most important stages in the life of garden plants. We believe that it is often here that the future success or failure of the gardeners productions is determined. In the other stages in the growth of his plants the cultivator may, as a rule, do much to rectify the results of improper treatment, but in the case of the sowing of seeds, especially where first-class specimens for the show table are wanted, he cannot afford to exercise the least slovenliness. If he does his chance of having specimens up to the showing standard and in time for his show will be reduced to the minimum at the very outset, and his subsequent care and trouble greatly increased. It is extremely difficult to give definite rules for sowing, circumstances vary so much. The sizes of seeds and their conditions at sowing time, the state of soil, the appliances in the way of heating, etc., at the command of each grower, and other circumstances will affect the question. Yet, there are certain well-defined bounds which must limit the variations of method in seed sowing, in order that success may be ensured.

SEED TO SOW NOW.

Mignonette, as a border plant, must be sown to remain. Pulverise the soil well, make it somewhat firm, do not

sow too thickly. It is important to thin early and severely, for any one plant left alone will soon cover a square foot. In pot culture it should be remembered that mignonette does not transplant well. The young plants must be thinned down to five, or even three, in each pot; if large plants are wanted later leave only three, or even only one. Mignonette is so accommodating that it may be forced for early flowers. A rich, friable soil is requisite, and plenty of light. But the plant will bear a close atmosphere, and even damp, in winter, fairly well. For blooming in winter or spring, sow in 5 inch pots in August, and keep the plants as hardy as possible until it becomes necessary to put them under glass for the winter.

SHIRLEY POPPIES.

These are especially adapted for growing in masses, in beds, or borders, are of very free growth, and profuse bloomers. Sow where they are to remain in well-prepared soil, enriched with a little decayed stable manure; thin the plants out to give room for growth of those that remain; they do not transplant well. If the buds are cut early in the morning before they expand, they will last for some time in water indoors, and have a most charming effect if arranged with their own foliage. On the whole, annual poppies are *par excellence* the best

APPLE TREE TENT CATERPILLAR.

type of annual for those who have little skill in flower gardening, and who want something that will yield a good display of color with little trouble,

PORTULACCA. *Purslane Family*

This annual should be in every garden, it is a neat, bushy little plant, with saucer-shaped flowers, of very easy growth. The shades of color, are from

white, or almost white to rich magenta. Sow when the weather is settled. Put the seed into the open border, and the lighter the soil, the hotter the season, the more brilliant will be the display of flowers. Sow in rows six inches apart, and cover the seed with fine soil.

F. BRUNTON.

Maplehurst, Grimsby.

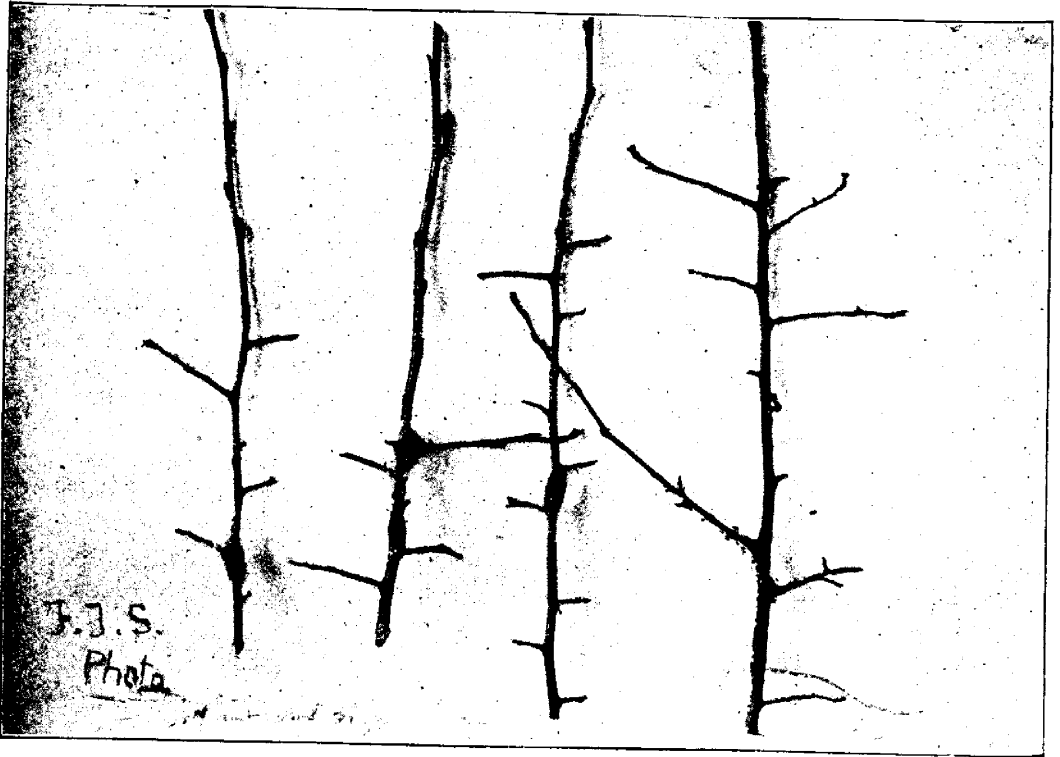


FIG. 1138 —EARLY STAGE OF DEVELOPMENT.

APPLE TREE TENT CATERPILLAR.

CLISIOCAMPA AMERICANA, HARRIS.

SOME interesting phases in connection with the life history of this insect were noted this spring. A remarkable feature was the rapidity with which the hatching took place succeeding the extremely cold

weather of April 26th. On April 20th we had 19 degrees of frost, and on April 21st 7 degrees. Again on April 27th we were visited with 6 degrees of frost; yet, notwithstanding these low temperatures, on April 29th I noticed on some

APPLE TREE TENT CATERPILLAR.

cherry crab trees, *Pyrus baccata*, the young caterpillars crawling about very actively and beginning to feed on the then partially expanded leaf buds. This, it will be noticed, was only the third day succeeding a night when the temperature fell 5 degrees below freezing, and illustrates forcibly the vitality of the insect in the early larval form, and the promptitude with which the eggs hatch when food is prepared and on the arrival of favorable weather. It is a striking fact, too, that one notices in connection with the habits of this insect, that a large proportion of the egg masses are deposited upon varieties of trees which leaf out particularly early in spring, for instance, *Pyrus baccata* and other forms of the Siberian crab, Choke Cherry and various species of genus *Prunus*; also, that the eggs do not hatch till food is within easy reach. The accompanying illustration is from a photograph taken by Mr. F. T. Shutt, Chemist, of Experimental Farms, on April 29th, and shows the early stages of development of the destructive form immediately succeeding the hatching period. After taking the photograph the

twigs with the young caterpillars still on them, were held under a water tap for five minutes, from which water of a temperature of 39 degrees was running; The larvæ not washed off appeared quite lifeless. The twigs were then placed in a sunny window. Before half an hour had elapsed the caterpillars were apparently in good health and enjoying a promenade up and down the twigs, not omitting though to show a marked preference for the portions represented by the partially open buds. They would seem to be well fitted to withstand the vicissitudes of the climate peculiar to "The Lady of the Snows," even outside the peach belt.

Fruit growers and farmers should pay more attention to these unsightly webs and promptly remove them from their trees as soon as noticed in the spring. If pains were taken to examine trees and remove the egg masses in the autumn or when pruning during the winter, the work in spring would be very much lessened.

JOHN CRAIG.

Experimental Farm, Ottawa.

TRIM THE SHRUBBERY.

IN many country and village door yards or lawns, the shrubbery consists of rose bushes, lilacs, wistaria and honeysuckle. Often these have not been trimmed for years and they present a most ungainly mass of tangled growth, often rendering it quite difficult to obtain even a fair view of the house by the passers-by. This untrimmed collection is frequently supplemented by rampant growing evergreen trees, that were all right for the first five or six years of their growth, but they were neither cut back nor topped and many of them now have branches spreading from ten to twenty feet. Where it is not thought best to remove them entirely, cut off the lower branches close up to the body of

tree for a distance of about eight feet. This will remove the foliage that obstructs the view, and the remaining lower branches will droop a little, giving the tree a pleasing appearance. Other fruit and ornamental trees, by branching low, may obstruct the view, but judicious pruning will regulate this trouble.

Use the pruning knife freely on the shrubbery and if the bushes are of some desirable kinds try to improve the flowers they produce. Turn down the sod about them, applying well-rotted manure, ground bone or wood ashes, well mixed, and you will be more than paid for your trouble. Let this pruning be an annual operation — *L. D. Snook in Fruits and Flowers.*

TRAINING YOUNG PEACH TREES.

 CONSIDERABLE judgment needs be exercised in the training of a young tree, especially a peach, as it being a rapid grower, it requires more attention than any other of the tree fruits.

The training should begin at the moment of planting and be continued through the life of the tree. Growers differ as regards manner of thinning, at the time of transplanting, some prefer trimming to a whip, while others leave short spurs with one good strong bud on each. Although good trees can be grown by either method, the "whip plan" is preferable as stronger growth is more apt to be obtained. It is better to grow a low head tree, the first branches starting about 2 or 2½ feet from the ground. They will shade the trunks from the sun, which will lessen the liability to sun scald and be less subject to the forces of the wind. The fruit can be more easily gathered and pruning be greatly facilitated.

The trimming of the roots of the young tree is about as important as of the top. When the tree comes from the nursery, the roots as well as the limbs are more or less bruised. The machine used in digging them in the nursery, will often tear the roots in a severe manner. All the roots that have been broken or bruised should be cut off clean and the others, shortened in at least ¼, the cutting should be from the under side that the raw surface may be down. The care of a tree before and at transplanting, requires nothing but common sense to make a tree succeed. A tree will suffer as much when its roots are exposed to the sun and wind, as a fish will when out of water. Protect the roots and replace them in a position

as near their former one as possible, with the soil firm and of good quality and nature will do the rest.

It is well to have some definite plan as to the shape of the top to be formed. A good way is to sketch the outline of the proposed form, on paper, then when pruning, the plan may be carried along and the tree fashioned as near to it as possible. The trees must be watched closely the first season that all shoots which are not required to form the head, may be removed.

In forming the head, select four or five of the strongest branches which are distributed along the trunk for 12 or 16 inches and branch in different directions so that they may be evenly balanced. The following spring the top should be cut back ½, the place on the limb has much to do with the formation of the top.

If a tree be inclined to grow more rapidly in one direction than in another, by cutting back to a leaf bud located upon the inner or outer side of a branch, that branch may be made to grow towards or from the centre of the tree. I had several trees which had one part broken off, and by this plan I was able to re-grow a very evenly balanced top. Each succeeding spring the cutting-back should be ⅓ of the past season's growth, this answers also as a means of thinning the fruit when the trees come into bearing.

If this plan is followed, a block of trees may be grown which will be long-lived and profitable as well as a "thing of beauty" to the owner.

B. A. WOOD.

Kalamazoo Co., Mich.

SOME OF THE NEWER FRUITS.—II.

BY E. MORDEN, NIAGARA FALLS SOUTH.

Russian Apricots.—Those who some years since listened to glib tongued agents, and planted large areas with these trees lost a lot of money. After years of trial they are mostly dug out, and the planters ought to be wiser men if they are not. These apricots blossom very early, but the fruit rarely sets, and even when set seldom endures to the end. Apricots, in general, seem to be a delusion. Curculios favor their continuance.

Mulberries.—If we imagine a very sweet blackberry without its seeds, we have a mulberry. For those who like sweet, rich fruit, the mulberry will be ranked as delicious. The large fruited varieties seem to be rather tender for Ontario.

The Russian mulberry gives in some cases a large crop of small berries. As they fall about as soon as they ripen, we need sheets in order to gather the fruit. The birds are willing in this case to assist.

By planting several trees, some pistillate ones will be secured, and from these we may get delicious fruit. The tree, too, has remarkable foliage. Some of the leaves are entire, and many of them are notched and lobed in a great variety of ways.

Japanese Plums.—The Japanese plums are quite different in foliage from the European and American varieties. They blossom very early, hence, are not likely to be reliable every year.

In appearance, quality and season of ripening, the fruit varies greatly. As there is some confusion in their nomen-

clature, there is naturally a conflict of opinion in reference to varieties of merit.

The Ogon with me is a very early white plum with a deep suture. It ripens and drops from the trees much in advance of the ordinary plums. Its quality is nothing to boast of. The Abundance, which ripens later and is sometimes quite large, is likely to take a place and hold it. The Burbank seems to be gaining in favor.

Hataukio, a late reddish plum with a white bloom is worthy of trial. The fruit resembles the Lombard, but is handsomer and of better quality, I think. Some of the fruit falls, but some of it remains on the trees for three or four weeks. Picked in season it ought to bear shipping well. As many of the Japans ripen with the European plums, and must compete with them, it will be seen that they must possess a good supply of all around merit, if they hold a place permanently. Some of them may do this, while I think that growers should try them, I do not see how they can displace the older varieties.

In summing up the newer kinds of fruit, we cannot claim any commercial value for any of them, that would justify large plantations. Fruit growers with some enterprise and some spare space, should plant nearly all of them for home use and ornament. Should any of them develop commercial value, larger plantings may follow. He who, upon the advice of some agent, plants largely of a new fruit, in order to get ahead of the other fellows, need not be surprised if he finds himself in the rear.

JAPAN PLUMS IN IOWA.

S EVEN years ago, I planted a few Japanese plums in my trial orchard, that is situated eight miles south of this city. I had been led to believe, by Prof. Budd, that these plums were entirely worthless in our severe climate, he often having stated they were as "tender as weeds," therefore, my surprise was intense, when the second year from planting, my small trees were not only perfectly sound, after the thermometer had registered 22° below zero, but were loaded with handsome fruit. Since then, my first experiment with this oriental fruit, I have spared neither money or pains in collecting Japan plums, till I doubtless have the largest number of varieties in the entire North-West. I do not have the ground to set many trees of each variety—two to ten of a kind—except the Burbank. I now perhaps have over 50 trees in bearing, most of them just commencing to bear. On the older trees last year I had 25 bush. of these Japs. The Burbank, Normand and Abundance are best in quality, so far as fruited. The former is extra fine for canning. These older trees have stood 28° below zero, and bore a good crop of fruit; I refer more particularly to the Burbank. Kelsey is the only variety, so far, that winter killed; it is entirely too tender for this latitude. My object in planting these plums was not so much for commercial fruit, as to secure new seedlings cross-fertilized with our best natives, for I firmly believe all our best plums for this Prairie region must come from our native species, and my faith is

backed up by a collection of over 100 varieties of our best improved natives, that gave me over 200 bushels of fruit last season: of many of these, like the Japans, I have but a few trees on trial. Some of these natives are better in quality than most of the Japs, but the latter possess *other* qualities that our natives do not possess. Some of these are extremely small pits, and long keeping and shipping qualities. In my judgment—judging from my success with these Japan plums—they have come to stay, if for no other purpose than indicated in this article, inter breeding with our hardy natives, and in the near future evolving a new race of plums that will be far superior to either species. I select the Japanese for this purpose, because they are very closely allied botanically to our natives, hence, easily cross with them; also their beautiful color and extremely small pits make them more desirable for the purpose indicated, than the domestic class. I have found the first and second winter, after setting these plums, the most critical, for after that they seem to become more acclimated, perhaps also the rooted system becomes better established, so the vital forces of the tree become stronger, and hence can resist extreme temperature far better than when first set out. As I further test these plums and their American seedlings, I shall be glad to give my report of their success or failure to the readers of your valuable journal.

A. B. DENNIS.

Cedar Rapids, Iowa.

HOW TO MAKE MONEY ON FRUIT.

THERE are some precepts so important that they never grow old or go out of date. They are worthy of being impressed on the minds of all men, and some men evidently need more than one impress.

One of these venerable but patent precepts, these ever old and ever young truths, is the imperative and increasing importance of intensive culture in fruit growing. By intensive culture I mean diligent and time culture and liberal feeding with manures rich in the properties essential to perfect fruit.

It has been demonstrated that intensive culture in that it greatly increases the yield per acre, pays the general farmer, the grower of wheat, corn, cotton, tobacco, oats, etc. In fact that no other system really does pay him in the long run. How much more does this apply to fruit growing, where not only quantity is vastly more increased than is possible with the above staples, but where quality is also so vastly improved. And in fruit, quality is almost or quite everything.

A man who by intensive culture doubles his yield per acre of wheat or corn, simply doubles his dollars per acre. But the man who by intensive culture doubles his yield of fruit is pretty sure to so improve it in size, beauty and general excellence that its net value per acre will be quadrupled or even sustain a still greater increase.

My experience in fruit growing reaches back nearly twenty-five years. It has been chiefly in the culture of small fruit — strawberries, dewberries, blackberries and raspberries, but has embraced also grapes, peaches and apples. As there is an exceeding diversity of soils hereabouts, it has embraced likewise nearly every conceivable soil,

the stiffest of red clay, rocky knolls, almost pure sand, black sandy loam with pipe clay subsoil, and so on up and down the gamut of soils good and soils bad.

This experience has impressed on me the paramount importance of two things, absolutely clean cultivation for small fruits and grapes, the sowing and turning under of pea vines or some green crop in apple and peach orchards, and the liberal application to all fertilizers rich in potash. Ten or twelve per cent potash, five per cent. phosphoric acid, and two or three per cent. ammonia, I find to pay best generally

Kainit or muriate of potash for the potash, acid phosphate or dissolved bone for the phosphoric acid, and nitrate of soda or cotton seed meal for the ammonia, should be applied in a larger or smaller quantity as actual experiment dictates. But a liberal application I have always found to pay best, provided always that in small fruits the weeds and grass are kept down. If a man is not determined to give clean culture, the less manure of any kind he uses the better. And I may say, the fewer plants he sets the better. While none at all would be best of all.

The largest yield of strawberries that I have ever seen reported in the state—over 11,000 quarts an acre—I made by clean culture and the liberal and repeated applications of above fertilizing ingredients.

Of course where large quantities of fertilizers are used, it must all be thoroughly mixed and applied broadcast. For small fruit, say one-third thoroughly mixed with soil before plants are set in spring, one-third as a top dressing over plants, middles and all in October, the remainder in same way

THINNING FRUIT.

just before the plants are put out the following spring. When thus used, even a larger quantity than above stated can be profitably applied if thoroughly mixed with soil before planting, and if the fall and spring top-dressings are carefully applied, so as not to let too much fertilizer fall directly on the plants, especially

if they are then growing and tender. No possible harm can result if they are in a dormant state. For vineyards and orchards I should apply as top dressing over whole surface, half the fertilizer in late fall and half in early spring.

O. W. BLACKNALL.

Kittrell, N.C.

THINNING FRUIT.

THE time has about gone by when the Canadian fruit grower can afford to despise the scientific side of his business, and follow haphazard methods. At one time peaches of all sorts sold at a high price, even without grading, and there seemed little need of spending time and labor in fertilizing the ground or thinning the fruit in order to make sure of fine large samples; but now the conditions are reversed, and small, mean samples of peaches, pears or apples are almost unsalable. Now the haphazard grower, the lazy cultivator, the careless packer, will fail, he will be discouraged, and conclude that fruit growing does not pay, while the grower that spares no effort to produce fine samples, and puts them before the public in an attractive style, will always meet with success.

The thinning of fruit is a practice little observed in Canada, but one that should be adopted without delay. It requires some courage at first to pull off and throw away one-half of the weight of plums or peaches on a tree, but it will pay, and pay well. Indeed it won't pay to neglect it for the half quantity will bring double, if not four times the price, because of increased size.

Last year Prof. Beach, of Geneva, N.Y., made three experiments at the station in thinning apples. The first was to take out the inferior fruit; second, to take

out enough to leave the apples four inches apart; and third, to take out enough to leave the apples six inches apart. After the first experiment he found that the fruit had a better color, and one-tenth of it went into first-class fruit. After the second experiment 22 per cent. of the crop was first-class fruit, and after the third experiment nearly all of the apples were of the first grade.

At the Mass. Expl. Station, experiments have also been made with very distinct results, and we quote from Bulletin 44:—

The past season has emphasized the necessity of reducing the number of specimens of fruit on heavily loaded trees in order to save the strength of the tree and improve the size and quality of the fruit. With the apple crop this necessity is more marked than with any other fruit. Nearly all of our fruit trees possess the characteristic of producing one year so large a crop that they cannot mature a crop the next season, requiring sometimes several years to recover from the exhaustion.

On the station grounds it has been the practice for several years to thin all the kinds of fruit more or less, and we present in this bulletin a few illustrations of the beneficial and profitable results.

No. 1. Two full-sized Gravensteins of uniform vigor and productiveness were selected. One was thinned July

THINNING FRUITS.

1st, the other being reserved for a check. The fruit set in great abundance and at the time of thinning, the two trees appeared equally productive. It should be said that if the tree had been thinned at least two weeks earlier, better results might have followed. As the fruit approached maturity a decided difference was noticed in favor of the thinned tree,

but unfortunately for the experiment, a large per cent. of the fruit dropped prematurely, as many Gravensteins did in other sections of the State. The results therefore were far from satisfactory; nevertheless they indicate what may be expected when conditions are more favorable.

GRAVENSTEIN.	Firsts.	Seconds	Market Value.	Market Value.	Gain.
Thinned Tree	7 bu.	1 bu.	9½ bu.	4.45	2.33
Check	2½ bu.	2½ bu.	10½ bu.	2.12	
Cost of Thinning.....					48
					\$1.85

Deducting from this 48 cents, the actual cost of thinning, we have a net gain of \$1 85.

THE CARE OF WINDOW BOXES.

WINDOW boxes are more often failures than successes. Why? Because they are not properly cared for. It must be borne in mind that a window box, from the exposed position in which it is placed, loses moisture very rapidly by evaporation. The wind and air get at it from below as well as on the side, ends and top. Only that side next the building is sheltered. It will, therefore, be readily understood, if one stops to think about it, that a great deal more moisture must be taken from the soil in such a box, in a given time, than it would be possible to extract from the soil in a pot or box whose exposure is less. The secret of growing plants well in such boxes consists in giving not only a great amount of water, but in giving it often. Enough should be applied every morning and evening to thoroughly saturate the soil, and the way to make sure that the soil is wet is to keep on applying water till some runs off at the bottom of the box. If it is given in small quantities, it will not be long before the leaves

begin to turn yellow, and very soon you will have a sickly-looking plant, and in a short time it will be dead; just because there was not enough water given to moisten and keep moist the roots below the surface.

One of the most satisfactory plants I have ever used in a window box is the common single Petunia. It will bloom profusely, is bright and fragrant, and soon covers the entire surface of the box, and droops over the sides until they are wholly concealed. The Madeira vine is pretty when planted about the edge and allowed to droop in festoons. The Heliotrope is a good flowering plant for such use, if care is taken to give water enough. It is fond of strong sunshine, but soon suffers if its roots are allowed to get dry. A scarlet Geranium will brighten up a window wonderfully, and a good plant to use with one, about the edges, is the Nasturtium, with its brilliant yellow and maroon flowers and pretty, pale green foliage, with which the box will soon be covered.—*American Agriculturist for June.*



✧ Flower Garden and Lawn. ✧

DWARF HARDY PERENNIALS.

IT is now that those who are happily the possessors of perennial gardens are being delighted, as one after another of their old favorites or new acquisitions display their individual charms under the influence of summer's onward march.

There is a charm in gardens of small dimensions, at least in those perennials that are of dwarf growth, and as yet as handsome in appearance as their relations of sturdier habits.

Some of the plants here mentioned have already contributed their share to the brightening of the garden and retired till another spring shall wake them to activity. Watch for them however if you have not already the pleasure of their acquaintance.

The *Subulata* Phloxes are indeed among the most showy of all perennials. Here they begin to show about May 10th, and remain a solid unmarred mass of flower for a full month. As a bordering for a walk they are always admired, for edging a bed of perennials or spring flowering bulbs we have never found anything more appropriate.

The foliage which can hardly be seen during the flowering period, is small and narrow; none of the varieties attain a greater height than 6 inches, but they

spread quite rapidly. The pure white one *Alba*, when in flower reminds one of a drift of snow. One is white with a scarlet eye, another dark, rose pink, and very attractive.

The dwarf Irises claim attention in the garden of small dimensions. The English and Spanish Iris are bulbous rooted, valuable where hardy, but they are not entirely so here. The Siberian Irises grow about 18 inches high, are quite hardy and bear neat long stemmed flowers that are useful for cutting; the best are the pure white and the clear bright blue varieties. *Iris pumila* attains a height of not more than seven inches; the first flowers open about May 5th, and the plants are soon thick with clear purple blossoms, in shape exactly like a miniature *Iris Germanica*. There is a white variety of this species, and several that closely resemble *pumila* in color.

Aquilegia Bergeriana received from the Ontario Fruit Growers Association several years ago, proves one of the earliest, most dwarf and handsome of all. With us it grows only about 12 inches high and produces unusually large, well-expanded flowers, light purple in color, and each petal tipped with white. The cup is also purple banded at the outer end with sulphur yellow.

HARDY HYDRANGEAS.

The Alpine Auriculas are easily raised from seed, if a first class strain is procured one is sure to get some marvelously well-colored flowers; about seven years ago we raised a batch of them and they grew well for the start, but we had to give them the protection of a cold frame to make them behave well during the winter, as the plants attained size we thought the game scarcely worth the candle, as they say, and planted them in the garden with the intention of letting them live or die as they chose. Their situation was, quite unintentionally, on the north side of a spruce hedge, just about three feet from the lower branches. They wintered there perfectly, and have done so ever since; they show some good flowers and really fine colors.

Hardy pinks, among which the white

variety, Her Majesty, deserves special mention, are splendid for cutting; they are always prime favorites in the small garden, as are the hardy Primrose or Polyanthus, including the English Primrose. In some places these latter will require the protection of a cold frame.

Alyssum saxatile compactum is a superb, dwarf, yellow flower, a veritable sheet of gold in its season.

The Iceland Poppies (*Papaver nudicaule*), in the various colors are much thought of. *Aubretia Græca* too, with its pretty purple flowers, deserves attention. *Arabis albidæ* is a neat, very early and showy white-flowered plant, without which no collection is complete.

WEBSTER BROS.

Hamilton, Ont.

HARDY HYDRANGEAS.

STANDING pre-eminently among the most noble shrubs for the lawn is the *Hydrangea paniculata grandiflora*, introduced comparatively few years ago from Japan, it now beautifies the choicest gardens throughout America, and is grown for sale by the millions.

The snowy white or pinkish panicles of flowers which open in early September, are very lasting; in fact, if cut before they begin to wither they last splendidly all winter.

Just how to obtain the largest and finest flower heads from this shrub is not generally understood. Left to itself the bush will make a large growth in two or three seasons, the growth will then not be so rapid or vigorous, the new wood will be short-jointed, and the flowers while they may appear in great numbers, will look the size of those on young, vigorous plants. It is possible to have

large, fine flowers from this variety for an almost indefinite time if the correct treatment is given. Hard pruning, after the style that Hybrid Perpetual Roses are pruned for finest flowers, should be adopted.

That is to say, instead of allowing all shoots to grow up, thin out, in the spring, all but the strongest, and shorten these to from six to eight inches from the ground, the result is large healthy foliage, and fewer flowers of greater size. A specimen bearing a few panicles, say 15 inches in length, will command attention where one left to itself may not. It seems hard to cut down the fine strong stems the following spring, but this sacrifice of good wood is the price of fine flowers.

The variety *Paniculata* has darker colored bark than the preceding, and its season is earlier, the panicles are borne more upright and are nearly pure white

PRUNING STREET TREES.

in color ; fine in itself as a variety, but never producing such immense flower-heads as the *Grandiflora*.

H. Pekinensis—This variety came to us from France ; it is not yet widely distributed. In general habit of growth it resembles the *paniculatas*, the flower-heads are nearly flat instead of conical, the individual florets are white and exceedingly large, but the panicle is rather open and loose, not as prepossessing as it might be.

H. quercifolia the Oak-leaved Hydrangea, is a most beautiful shrub for foliage effects, but will not put up with the tumbles that the mercury sometimes takes here in Ontario. At New York and southward, however, it grows in all its beauty.

For this climate *H. paniculata grandiflora* is decidedly our favorite ; given a well enriched spot, and proper pruning, it will satisfy the most exacting.

WEBSTER BROS.

PRUNING STREET TREES.

A Constant Reader, in last number of HORTICULTURIST asks when to prune street trees, and as this is a subject I feel very much interest in, and I have been experimenting in that line for 25 or more years, I have found to my cost that pruning in winter when the wood is frozen is a splendid way to destroy a good orchard. A neighbor of mine whose orchard had been neglected for several years, got a man who professes to be an expert in that line to prune his orchard in January, and he did *prune*, cutting large as well as small limbs and branches, and the proprietor has never had even a fair crop of fruit since. Besides, about 40 out of 100 trees died outright inside of three years. I find invariably that all deciduous trees do better when pruned in spring, but trees like the Maple and Birch, Basswood, Walnut and such varieties as flow sap rapidly, should be pruned about the time the leaf is coming out, after the sap is up. Plums and Cherries should be pruned about the first of April ; Apples and Pears a month later, and the wounds will heal sooner than if pruned at any other time of the year. Besides, if apples are pruned before growth starts, a large number of shoots start out where

the branch was removed. When I speak of pruning I mean the removing of branches that are one inch and over in diameter. Every Maple or other street tree should be regularly pruned till a trunk is obtained from 10 to 12 feet from the ground, when the top may be allowed to form. When a row of such kept trees appear on a street they are a "thing of beauty and a joy forever" to every passer by, who enjoys the beauty of Nature and Art combined. My experience is that nearly all fruit trees are allowed to form branches too near the ground, and the only advantage seems to be that the fruit can be gathered easier ; but I question if that is a sufficient reason to allow trees to be headed low thereby preventing any cultivation of the soil, which to my mind is of far more importance than the trouble of going up a step-ladder to gather the fruit. My advice to growers of ornamental or other trees is to prune regularly every season, and you will never have a large limb to remove ; and by pruning after the growth starts, no injury from loss of sap will appear.

R. L. HUGGARD.

Whitby.

* Our Affiliated Societies. *

BRAMPTON HORTICULTURAL SOCIETY.

—A meeting of the members and others who are partial to flowers and fruit growing was called to receive the Spring distribution, which consisted as follows—any one of the following:—Dempsey Pear, Lily, Japanese Lilac or Courath Raspberry, given by the Fruit Growers Association, besides 1 oz. Sweet Peas, 1 Hardy Hydrangea, 1 Clematis paniculata alba, and four Tuberoses. The members turned out in fair numbers and Dr. C. Y. Moore, the President, presided and opened the meeting with a few appropriate remarks, introducing Mr. H. Dale, the great Rose grower of the Dominion, as the first speaker, who made some very interesting remarks upon the "Hydrangea," in a most practical manner. Mr. Ed. Dale followed, on the culture of the "Tuberose," followed by Mr. Adam Morton, on the Sweet Pea—a very instructive address, which was well appreciated. Dr. Heggie continued, with some remarks on the Clematis. Many questions were put to the various speakers and discussed, showing the interest taken by those present in the different divisions of Horticulture. After the meeting the plants were distributed by Mr. Henry Roberts, the Secretary.

NIAGARA FALLS SOUTH HORTICULTURAL SOCIETY.—The Horticultural Society held its regular monthly meeting on May 17th, in Mrs. Land's hall. A very interesting discussion took place upon pruning and spraying fruit trees, and if those present will adopt the methods advised, there is little doubt but that the quality of our fruit this coming harvest will be greatly improved. With improved quality, the grower may

reasonably look for greater returns, and a more ready market.

The flower kingdom received its share of attention. Mr. R. Cameron gave some very valuable instruction for the Spring and Fall care of flowering shrubs, chiefly Forsythia and Hydrangea. It was mentioned, that as the Rose thrip had made a very early appearance this year it bids fair to be a dangerous menace to successful rose culture, therefore the members were advised to look well to the method of spraying. Too much care cannot be given to the rose, under the existing circumstances. To get good results in flower, much depends upon the clean, healthy nature of the stock. The following was moved by the Rev. Canon Bull and adopted,—Whereas all British subjects are rejoicing in the favors of the Almighty in permitting our beloved Queen, to *outraign* any former sovereign in peace and justice, and whereas this board does desire to visibly express its sense of thanks and loyalty, be it resolved that on June 20th, we do wear upon our breast the rose, Nature's own gift to our beloved land, and that this board does try to promote the same idea among our citizens. Messrs. Pyper, Dobbin, Cameron, Morden and Lyon were appointed a committee to promote the idea and have a sufficient stock of roses on hand to meet the requirements.

Yours truly,

WM. L. LYON.

GRIMSBY.—The Society here held a most successful spring meeting in the Town Hall, on the evening of May 14th. Through the energetic efforts of the President, Mrs. E. J. Palmer, the Secretary and the Lady Directors, a fine exhibit of palms, coleuses, begonias,

OUR AFFILIATED SOCIETIES.

fuchsias, roses, geraniums, cacti, hydrangeas etc., besides numerous cut flowers was shown, both from amateurs and professional gardeners. The largest exhibit was made by Mr. A. E. Cole, a young gardener at Grimsby, who is always on the market with fine stock,

dent. A Grimsby orchestra gave some delightful music; a violin solo was rendered by Miss Taylor, and a violin duet by Misses Taylor and Brodie. At the close Secretary called out the names of the members, who came forward in turn each to receive in a basket five



FIG. 1139.—MR. A. E. COLE'S FLOWER EXHIBIT.

We show a glimpse of Mr. Cole's exhibit which occupied the whole of one side of the hall Fig. 1139. Mr. M. Pettit, of Winona, an ex-president of our association, was chairman, and a paper on Chrysanthemums was read by the presi-

dent. choice chrysanthemums, each plant grown and transplanted into a five inch pot. Three hundred and fifty potted plants were thus distributed, and with them we hope for a fine chrysanthemum show next November.



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

ADVERTISING RATES quoted on application. Circulation, 4,000 copies per month.

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

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

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

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

✧ Notes and Comments. ✧

PROF. PANTON of the O. A. C. Guelph, delivered a lecture before the Paris Horticultural Society on the 19th of May, on "The Horticulturist's Foes" illustrated by a stereopticon.

ERRATA.—In Mr. Beall's article on heating small Conservatories, in paragraph (2) p. 178 read "below the level of the benches," instead of "above," etc.

CORRECTION.—The replies to Mr. Gott's questions regarding the advantages of affiliated Horticultural Societies were written by Mr. Thos. Beall, our Director at Lindsay, whose services have been so valuable in the formation of these Societies.

COLD STORAGE.—It appears probable that the export shipments of tender fruits and dairy products are likely to go forward on a large scale even this season. In order to complete the transportation facilities from all ports of the

province, the Department of Agriculture has proposed to the Grand Trunk Railway to run cold storage trains weekly to Montreal as follows:—From Wiarton, via Stratford and Toronto; Sarnia, via London and Hamilton; Meaford, via Allandale and Toronto; Orillia, via Peterboro' and Belleville; Chaudiere Junction, Coaticook, Massena Springs. On each alternate week the first mentioned train will leave Goderich instead of Wiarton. The proposal is now under the consideration of Mr. Loud, the general freight agent, and a decision will be reached in a few days. Weekly storage car service will be provided also on the C. P. R. as follows:—Windsor, via Toronto; Owen Sound, Teeswater, Pembroke, via Ottawa; Labelle to Montreal; Quebec to Montreal; Scotstown to Montreal and other points on the C.P.R., in Quebec and Montreal; Edmundston, N.B., to St. John, on the I. C. R.; Rimouski to Quebec; Moncton to St. John; Moncton to Halifax; Yarmouth

NOTES AND COMMENTS.

to Halifax; Chicoutimi to Quebec by rail and also by steamer. This completes a network of rails over which cold storage trains will be run throughout the season.

It is evident, therefore, that opportunity will be given for fruit shipments from all quarters, in addition to the regular weekly carload which the Department will forward from Grimsby. This latter will be necessary in order to thoroughly test the English market for our tender fruits, and the results will be fully made known as a guide to fruit growers in all parts of Canada.

SPECIAL PACKAGES are being prepared at Grimsby for use in exporting tender fruits in cold storage cars to Great Britain. The basis of the package is the apple box, which is two cubic feet, outside measurement. Inside this trays are fitted, to hold one layer each of choice peaches, or tomatoes.

AERATION SYSTEM.—We have received a pamphlet and letter from Mr. R. M. Pancoast, of Camden, N.J., regarding a new system which he has invented of saving fruit from decay in shipment by a constant and free circulation of pure air. It has already been demonstrated that this process does restrain waste in many fruits, and it reminds us of the Perkins system of which we have read so much.

THE RUSSIAN BALDWIN is commended by Dr. Hoskins of Newport, Vt., as very promising on account of hardiness, perfection of fruit, and wide spread usefulness for both growers and consumers. He is himself planting 2000 trees of this variety. It was the Doctor who introduced the Yellow Transparent and Scott's Winter to general notice.

INSTRUCTIONS IN SPRAYING, is the title of bulletin 105 from the O. A. C.

Guelph, by Prof. J. H. Panton. This is free on application to the Department of Agriculture, Toronto. It gives recipes for the various mixtures, and for the treatment of the various insects and fungi affecting fruits.

FRUIT GROWERS may think that undue prominence is being given floriculture by this Journal, indeed several complaints of this kind have been received. We may explain that our new Horticultural Societies have requested greater attention to floriculture and we have endeavored to meet their wishes. On the other hand our fruit growers may count upon as much matter as ever, bearing on that business. We expect to continue enlarging this journal until we have in it abundance of matter to please both classes of patrons.

THE PROSPECTS are bright so far for the fruit grower in 1897, but he need not count too soon. The peaches have blossomed abundantly in the Niagara peninsula, but some report that the leaves are affected with curl leaf and that the fruit is dropping fast, pears show well even Bartlett's which bore abundantly last year, cherries are full and setting unusually well. But what surprises us most is the promise of a fairly good apple crop, notwithstanding the over abundance of last year. The Baldwins will be very light, and many orchards almost bare of fruit. Greenings will be much better, while Cranberry Pippins, Spys and Roxbury Russetts promise an abundant crop.

In about a month, when the fruit has begun to grow, and nature's thinning out has taken place, together with a possible touch of Jack Frost's fingers, we can report more positively. In the meantime we ask our readers in various sections to write us brief notes on the fruit crop about the middle of June, so as to be in time for July number.

Notes From Our Fruit Experiment Stations.

Notes on Peach Trees.

During the spring and summer of 1896 the weather was very favorable to the growth of the Peach trees. They made a very strong growth from three to five feet on most of the trees not over four years planted. The wood and fruit buds ripened up perfectly in the autumn which was quite dry. When the first frost came I never saw buds in better condition. In December the weather was quite warm for a number of days which started the fruit buds to develop and swell to nearly double their normal size, this of course developed portions of the fruit bud that should remain dormant until spring. The cold of January, 12° below zero finished the work, I have not seen one fruit bud except what has been killed on the peach. Plums and cherries are all right.

W. W. HILBORN.

Leamington, Ont.

Gooseberries in Simcoe County.

Sir,—I offer for publication a few notes upon my work as gooseberry experimenter.

Last fall my bushes were dug among last thing in the fall. As much first class stable manure was dug in as possible, so as to be in shape for mulching in the spring. This spring we mulched largely with strawy manure and pea straw that had been tramped by sheep all winter in pens.

The winter finished many of the English varieties received last spring, many of which notwithstanding all the care taken of them last summer, only barely showed signs of life in the fall. Ironmonger, Red Champaigne, London, Railway and Green Chisil are exceptions. These all lived and did well.

All the American seedlings, Dominion, Success and Oregon Jumbo came out splendidly this spring. Some rows mulched last fall look fine, as the pea straw is up level and smooth as a board with not a weed showing through. Mulching a large piece might be impracticable that is to cover all the ground as it certainly gives a lot of work, and requires a lot of material, but about bushes would be sufficient for all practical purposes.

My strawberries have come through the winter in fine condition without any winter covering and they were in a side hill facing the north and were bare several times during the winter. This is the fifth time in succession that I have had the same experience without winter protection.

The older gooseberry bushes could hardly look better than they do, and if late spring frost don't prevent, I shall certainly have something worth looking at.

STANLEY SPILLETT,

Nantyr, Ont.

Spring Notes from St. Lawrence Fruit Experiment Station.

On the whole the weather during the past winter and spring has been favorable to fruit growers. Once during the winter the thermometer dropped to 28° below which was not unusual, as some winters it goes as low as 30 or 35° below. The spring has been cool and wet up to May 4th, but no late frosts as yet to injure buds. Since May 4th, the weather has been warm and bright forcing plant growth rather rapidly. The blossom will be from 3 to 6 days later than last year which gives us that much in favor of missing a late frost.

Of the varieties planted at the station in 1896 as mentioned in the Annual report for that year I had nothing injured by winter killing, and in Plums I have the Chas. Downing, Whitaker, Hammer and Weaver that will bloom this year. Pears do not show any injury as yet. In my commercial orchard, which is composed mostly of Fameuse apple I have prospects of a good blossom, even though it was heavily loaded last year.

Fungi have been making rapid growth this year during the wet weather, and orchards left unsprayed will run a great risk of having the fruit badly affected. Green aphid is also present in large numbers, and tent caterpillars are numerous and are now feeding on the opening leaves.

Strawberries wintered very well, a few reports of heaving on clay ground, but where well covered they came out in perfect condition. No bloom yet even on early varieties, but wild berries are in bloom to-day.

Next month after danger of late frosts are over, I hope to be able to give a good account of spring growth and prospects.

HAROLD JONES.

Maitland, Ont.

Plums and Pears at Whitby.

I think the Abundance and Burbank are as hardy as any plums I have tested. I have grown them for some years, and they winter as well as any other variety. Duane's Purple is rather tender, and General Hand a very shy bearer. Pond's Seedling does splendidly, and although a neighbor complains that it is not productive, I have had to support branches of my trees to prevent their breaking from the load of fruit. My choice for an early plum is McLaughlin. Two years ago we picked thirteen 12 qt. baskets from one tree, and sold them at \$1.25 a basket. I think a good windbreak a great help to a plum orchard, as well as adding to the beauty of the surroundings. How cheerless the farm homestead is without an evergreen or other tree!

QUESTION DRAWER.

I am glad you are giving more space in the journal to floriculture, so as to encourage your readers to study the beautiful in nature. I have a good many varieties of pears. I find the Sheldon a profitable variety of fine quality, and not fully appreciated as yet by the public. I have made more money out of the Keiffer than any other variety, simply because of its productiveness. The tree is an excellent grower and very hardy. The Flemish Beauty succeeds since it has been sprayed persistently with Bordeaux.

R. L. HUGGARD.

Whitby, Ont.

From Simcoe Fruit Station.

The past winter has been the mildest for years, the temperature scarcely reaching 20 below zero, and that only once. All fruits have come through in fine shape, except the Japan plums, Abundance and Shensie, which have killed back at the tips of the new wood, and I doubt if they will stand our climate. The hardy Russian cherries will be an acquisition for this section, for the growing of cherries has been almost entirely neglected here. The hardy varieties seem less susceptible to knot than the old varieties, and bear very early. The oldest I have are only three years

planted, and yet some of them bore several samples last year, and several are full of bloom this year. I note that the fruit is handsome in appearance, and hangs on the trees until dead ripe. I believe that the Bordeaux mixture is a good preventive of the black knot, and indeed no fruit seems to benefit so much from this mixture as the cherry.

The Mann apple has a bad fault, namely, splitting of the bark. The prospects are favorable for a good crop of fruit of every kind in this section. Apple trees are full of blossom buds, and present indications are for an abundant crop. The blackberries I am testing are doing well here, except the Kittatinny. We once thought we could grow no other variety except the Snyder, but now we hope for better things, and may after a time be able to advise the planting of the finer varieties in this section with assurance of success. The Columbian raspberry is not entirely hardy, as it has been killed back in the tips. However, it was planted in rich soil and made a rampant growth which may account for that to a certain extent. It is a wonderful bearer. Smith's Giant black cap is alive to the ends of the tips, and seems to be hardy.

G. C. CASTON.

Craighurst, Ont.

Question Drawer.

Clivias and Cypridium.

945. SIR,—What are Clivias and what are Cypridium? I see them recommended for winter bloom.

A SUBSCRIBER, *Seaforth.*

Clivias belong to the Amaryllis family. They are evergreen bulbs for the greenhouse, and need plenty of moisture and high temperature when growing.

Cypridium is a variety of Orchid, commonly known as Lady's Slipper. This is a good variety of Orchid for the beginner, because inexpensive and easily cultivated. It flowers freely, and remains blown a long time.

Clairgeau and Lawrence Pears.

946. SIR,—I have half an acre of ground which I intend setting with Clairgeau pears. I have one tree of this variety that bears profusely every year, and I find it an excellent market pear, being late.

Is the Lawrence a late pear, and suitable for our northern climate?

MRS. M. F. ROSS, *Owen Sound.*

The Clairgeau seems to succeed remarkably well on the southern shore of the Georgian Bay.

The Lawrence is a late pear, which yellows after being gathered, and ripens for dessert use in December. The quality is very excellent. We have as yet no reports concerning its success in your latitude

Fertilizers for Small Fruits.

947. SIR,—I have given my small fruit bushes and vines a dressing this winter with ashes from the Tanneries here, made from tan bark, soft wood and coal, also mulched them with hair from the Tannery. Would you recommend a dressing this spring with Phosphoric Acid and Nitrate of Soda and what quantities of each per acre, when and how to apply it or what would you recommend.

I can get large quantities of fleshings and hair mixed with lime. Please say how it is best to use it on the land to get best results. Any information will be thankfully received.

J. M., *Acton, Ont.*

QUESTION DRAWER.

*Reply by Prof. H. L. Hutt, O. A. C.,
Guelph.*

Coal ashes are of little or no value as a fertilizer. The elements of greatest value in wood ashes are potash and phosphoric acid, the percentage of which varies greatly according to the kind of wood from which the ash is taken. Analyses made in the Chemical Department here last year, of the ash taken from different trees, showed that cedar ash contained only 3.30% of potash and .98% phosphoric acid, while elm ash contained 35.37% of potash and .45% of phosphoric acid. If you can get plenty of good wood ashes you will have no necessity for buying phosphoric acid or nitrate of soda. The principal element of fertility in the hair and fleshings would be nitrogen, which, however, would be largely liberated and lost if mixed with much lime. The best way to use such material would be to compost it with a large amount of earthy matter, which would retain the ammonia as liberated by the action of the lime. Apply the compost as a top dressing for some field or garden crop.

To Destroy Ants.

948. SIR,—What is the best method of preventing young ants going up young plum trees, and what will drive them entirely out of the ground? I find them very destructive to the young trees. I have tried using a rag about the trees, soaking it with coal tar, but that soon dries up.

THOS NORRIS, *Paris.*

*Reply by Dr. Jas. Fletcher, of the Central
Experimental Farm, Ottawa, Ont.*

I shall be interested to hear from Mr. Norris, how he thinks that young ants injure his young plum trees, I have never in my experience seen any injury to trees by ants, and I am much more inclined to think that their presence on Mr. Norris's plum trees merely indicates that his trees are infested by plant lice or scale insects. It is just possible that

ants may sometimes do harm by making their nests under the roots of trees, but I am not sure even of this, although I receive very many reports from fruit growers to this effect. The relations between ants and the aphidæ or plant lice are well known and have been most delightfully described by Sir John Lubbock in his book "Ants, Bees and Wasps." The plant lice are actually kept on trees and bushes by ants, so that they may feed on the honey-dew which is secreted by the plant lice, in fact they serve them as cows and have been called "Ants' cows." Some species of ants collect root-feeding plant lice and carry them into their nests, and not only do they protect them in this way, but they actually collect their eggs in the autumn and take care of them carefully in their nests during the winter. Many other insects are also domesticated by ants, and Sir John Lubbock says "It is not going too far to say that ants have domesticated more animals than we have." I would advise Mr. Norris at once to examine his trees and see if they are not infested with scale insects, or whether he does not find upon the twigs the small black eggs of plant lice. If he does find either of these the trees should be at once sprayed with kerosene emulsion.

A Scale Insect of the Maple Tree.

949. SIR,—I enclose you a twig of a Maple tree covered with a scale insect, for identification. W.

*Reply by Dr. Jas. Fletcher, of the Central
Experimental Farm, Ottawa, Ont.*

Dr. Howard first described this insect as *Lecanium persicæ*, but he has since decided that it is a new species, *Lecanium patelliforme*. It can be destroyed by spraying the trees, once before the buds burst, with kerosene emulsion.



"Our Lady of The Snows,"

From a Horticultural point of view.

There's a chap called Rudyard Kipling,
Who is said to be no stripling
When it comes to writing poetry or prose;
But at times he seems to stumble
And he made an awkward bungle
When he dubbed this country "Lady of the Snows,"

Now my dear Mr. Kip,
If you'll kindly take a trip
Across the pond, and bring your summer clothes
And see our splendid weather,
And our country altogether,
You would never call it "Lady of the Snows."

See our noble sons and daughters,
Our unrivalled inland waters,
And our products that to Foreign Markets go;
Why, Rudyard, you will wonder
What in the name of thunder,
Tempted you to call it "Lady of the Snows."

Apples, peaches, plums and cherries,
With five hundred kinds of berries,
Pears, apricots, grapes, in this country grow
Swaying in the balmy breeze,
Quinces, figs, nut bearing trees,
All are products of the "Lady of the Snows."



As to quantity and tillage,
When you come to Grimsby Village,
Ask Woolverton, for he's the man who knows.
He doesn't deal in mystics
But, he'll give you some statistics,
About this charming "Lady of the Snows."

And if more you want, you'll get it
Just enquire of A. H. Pettit,
Who is posted on our record at the shows,
Of the big Chicago Fair.
And the laurels gathered there
By this enterprising "Lady of the Snows."

In your land of boggy weather
You have gardens in some measure
Pears upon the wall, gooseberries I suppose;
But the whole blooming batch
Wouldn't be a garden patch
When compared with "Our Lady of the Snows."

True, in winter we have snow,
And the temperature is low
And at times the roads get drifted when it blows.
But with winter sports and pleasure,
We enjoy it altogether,
Healthy, happy, with our "Lady of the Snows."

And now, dear Rudyard Kipling,
I won't say you've been tipling,
Nor to scold you for your error I propose;
No doubt you meant it kindly,
But you did it rather blindly,
When you called our country "Lady of the snows."

Craighurst.

G. C. CASTON.



QUESTION DRAWER.

Fruit Lists Wanted.

950. SIR,—Will you kindly explain remark in March number, page 87? It certainly is not encouraging to fruit growers or salesmen of fruit trees and stock generally, if it can be truthfully said that the Baldwin apple tree, after being grown thirty years, and is in a thrifty condition, deserves no better fate than being dug out. Allow me to suggest, that part of the Government grant be expended in preparing a list of fruit, large and small, *that is reliable*. Not one list for all Canada, but North, South, East, West, Central, and any other geographical division necessary.

C. H. ROBERTS, *Paris*.

The Ontario Experiment stations hope to accomplish this work in time. Fruits are being tested at all points, and careful records made, so that we hope soon to give just the information asked for.

The Baldwin is one of our most productive commercial apples, but for ten or twelve years past, it has for some unexplained reason, been unproductive, and last season it seemed to be recovering its original character.

Kerosene Emulsion.

Mr. Wm Scott, in *Gardening*, gives the following directions for making Kerosene Emulsion for use on house plants.

Take one-half pint of kerosene and stir in one pint of new milk. It must be stirred and mixed continuously and thoroughly for half an hour and if you will do that you will have an emulsion. When using add a quarter of a pint of this to two gallons of water, and it is well when using this to spray to keep the water well stirred. For a small col-

lection of palms it is best, safest and most thorough, to saturate a sponge with the mixture when diluted, and wipe off the scale. It does not take long and is far more effectual than spraying.

Grafting Ampelopsis.

951. SIR,—Can Ampelopsis Veitchii or a Roylei be budded or grafted into A Quinquifolia successfully? I have a number of the latter, strong vigorous vines, natives of this locality.

Whitby.

W. ADAMS.

Reply by Mr. Frank Brunton, Maplehurst, Grimsby.

You can graft Ampelopsis Veitchii and Roylei on Quinquifolia if you have as vigorous scions as the stock. But A Veitchii does better on its own roots and strikes freely from cuttings, inserted in nice sandy soil, in a shady position; the same remarks apply to Roylei.

Treatment of Cyclamen.

952. SIR,—Would you kindly tell me in the *HORTICULTURIST* the proper treatment of Cyclamen after blooming?

Reply by Mr. Frank Brunton, Maplehurst, Grimsby.

Allow the plant (corm) to rest awhile, by gradually drying off, and then repot in a few weeks, in a compost of soil, consisting of two-thirds loam, one-third leaf mould and decayed manure and the remainder coarse sand, silver sand if possible. Place in a cold frame so as to let the growth be strong and continuous. Be sure and protect from frost or sudden cold changes.

GRAFTING WAX.

A good grafting wax is one that will not become too soft in summer, so as to melt and run down the stock, or so hard in winter as to crack and split off. A very reliable grafting wax is made by melting together: Resin, four (4) parts by weight; beeswax, two (2) parts; tallow, one (1) part. When well melted pour into a pail of cold water, grease the

hands slightly and pull the wax until it is about the color of pulled molasses candy.

Make into balls and store for use. This wax should be warmed when applied. If it is too hard more tallow and less resin may be used. Some propagators use linseed oil instead of tallow.—*Amateur Fruit Growing.*

* Open Letters. *

Grape Growing at Goderich.

SIR,—Having seen Mr. Cameron's partial recommendation of Rogers' No. 3, I will confirm what he says about its setting poorly at times. It set so poorly with me that I cannot recommend planting it, although it is a good grape, about as early as Moyer. I have thirty-five varieties, and my exhibit at the Great Western Exhibition at Goderich last fall helped to make the grape exhibit the best in the Province, i.e., of out-door grapes. I had single bunches of Rogers' No. 4 and Eaton that weighed 2 lbs., and other varieties which weighed nearly as much. I will name three of the best varieties of grapes, according to my experience: Rogers' No. 4 (black), Vergennes (red) and Moore's Diamond (white). These are all sure croppers, of excellent quality. Rogers' No. 4 is as prolific as Concord, it has a larger and better flavored berry, and keeps longer. The vine is hardy and vigorous. The Vergennes is as hardy as Rogers' No. 4, very vigorous and produces regular crops of splendid fruit, which keeps until spring in perfect condition, packed in sawdust. The Moore's Diamond is a heavy cropper and is a most beautiful white grape. It is a little earlier than Concord, as strong in its habit of growth and as hardy. I have had no mildew, not even on my Brighton, for several years since I commenced washing my vines in the spring with a solution of sulphate of iron before the growth starts, giving them also a perfect cultivation and proper pruning.

W. WARNOCK, Goderich.

Heating Small Conservatories.

SIR,—I notice in the May issue of the HORTICULTURIST, page 178, a rather captious criticism upon my answer to a question regarding the heating of a conservatory, in the March number.

I state that a certain amount of pipe will answer, if the temperature does not fall below twenty-five degrees. The critic considers the answer unsatisfactory, as the temperature often falls fifty degrees below. While I did not state it in as many words, I certainly intended to fix the limit at twenty-five degrees below zero, and should have gone to the trouble to have so stated, had I supposed that your readers would not understand it that way. There are none of our northern States where the temperature does not occasionally reach zero, and here, in central Michigan, twenty-five below zero is not uncommon; so that I should hardly think of placing twenty-five above zero as a minimum temperature for a plant in Canada.

So far as the amount of pipe recommended is concerned, I find no criticism of that, and

after further consideration, I see no reason for changing the figures given.

Criticism No. 2, related to the fire surface recommended, which was four runs of two-inch pipe the length of the fire-pot. Mr. Critic claims that one would be ample. It is customary in estimating the fire surface required in a heater, to take one-eighth of the radiating surface to be supplied, and I followed that rule. While a smaller amount might answer, in the present case where, in a hot-air furnace the economy of fuel consumption need not be considered in determining the size of the heating coil for the conservatory, I should by all means prefer to have four pipes, rather than one in the coil, if on a winter morning I were to find the fire nearly out and the temperature twenty-five degrees below zero outside; and as this is likely to happen in the case under consideration, I should use four pipes rather than a smaller number.

The third criticism was also uncalled for, as I do not differ from Mr. Captious Critic as to the reason for the circulation of the water, and always like to carry the pipes well above the heater. I could have answered the question by saying "No," but it seemed to me that Mr. German was afraid that he would have trouble with the circulation, owing to the heater being in the basement of the dwelling and a number of feet from the conservatory; and I tried to assure him that he need have no fear, "as the entire length of the circulation" will not be more than fifty or sixty feet." I beg to differ from Mr. C. C., as I think "the working of pipes does depend on their length," as can readily be ascertained by comparing the circulation of a long run of small pipe with a short run, when both are but slightly above the level of the heater. While Mr. German did not tell the height of the radiating pipes above the heater, I inferred that it must be at least six to eight feet from the lowest part of the returns to the highest point in the circulation, as the heater was in the cellar of the residence, while the conservatory was built against it.

I noticed several questionable statements in the interesting dissertation of your correspondent, but will only comment on one of them, which is so utterly opposed to the best practice of the present time, that it may lead to serious mistakes. In paragraph (8) he recommends 20 gallons of water for heating 1000 cubic feet (which would be all right for a certain size of pipe and for a house of a certain shape), instead of recommending a certain ratio between the radiating surface of the coils and the exposed glass surface, as is the usual method. The error can be seen when we consider that a four-inch pipe offers only about four times as much heating surface as a one-inch pipe, while it contains sixteen times as much water. If the rule of Mr. C. C. is correct, a linear foot of four-inch pipe

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is as effective as sixteen feet of one-inch pipe, which can at once be seen to be false. In a similar manner, the error of using the cubic contents only in determining the radiation for a conservatory, can be shown.

L. R. TAFT.

*Agricultural College, Michigan,
May 12th, 1897.*

Exhibition of Fruit and Vegetables without Name.

SIR,—I forwarded a communication to Mr. Heyes, Secretary of the Ottawa Horticultural Society, last summer, as to the advisability of each prize winner writing a paper giving the history of the exhibit, from seed or plant, to the time of exhibit.

Name of article.
Seed, where grown.
Plant, " "
Fruit, " "

Reason for asking the questions:—Mr. A. or B, receiving a first or second prize, gives no information to the Society generally; for instance: at the exhibit for Cabbage Lettuce, one will exhibit a Golden Queen another, Hanson, etc. Those varieties are not named by the exhibitor. The same on the transplanted Onion; one will exhibit a Prizetaker, another, Red Globe, some a Giant Rocca. On self-blanching Celery, some will have a white plume, some a pink, some a Golden self-blanching. The same occurs on Cauliflower; one will show Sutton's first of all, another Henderson's Snowball, another Erfurt, and so on, through the whole piece the varieties are not named. I hold that if it is necessary to name fruits and flowers, it is also necessary to name the different varieties of vegetables and to give the points of merit on each exhibit, as there is considerable dissatisfaction with the judging. There are so many varieties in one exhibit, that the judges have no fair chance of giving a fair decision. I forward this communication for publication in the CANADIAN HORTICULTURIST, if you see fit to do so, for the purpose of getting the views of kindred societies. For instance, there were two first prizes given for White Plume self-blanching Celery, in '95, one as an early celery in the summer and one as a late white or winter celery in the fall. A leading member of the Society failed to see any difference between the White Plume self-blanching celery and the Winter White celery. I claim that these are two distinct classes of celery and ought not to be exhibited together.

WM. SPENDLOW,
Billingsbridge, Ont.

Fruit Growers and Shipping Companies.

A meeting of the Lincoln and Welland Fruit Growers was held in St. Catharines, on Saturday, 27th March. Iced cars were commended for carrying fruits for the Montreal market, for though longer than express, they would reach Montreal in quite as good

condition, at less expense. The growers asked for special R. R. rates of 35c. per cwt. for Montreal, in broken lots and 25c. in car lots in iced cars; and by express, 50c. to Montreal. The answer of the Companies was reserved.

Notes from Africa.

SIR,—Please send me sample copies of THE CANADIAN HORTICULTURIST. I want to secure 36 members in South Africa, and feel sure I can do so with the influence I have here among my old friends. The journal is much improved, and I consider it very cheap with the Report. I like it very much, and am willing to act as general agent for this part of South Africa, a wide district. I shall always take great interest in the journal, and in Canadians who are so very loyal, and such warm-hearted people.

Japan plums are doing remarkably well here and making more wood than any other kind. We have to dispense with all kinds of apple trees here, except the Northern Spy, on account of the blight.

T. RHODES,
Mokstad, Griguland East, South Africa.

Fruit Prospects.

SIR,—Thinking you would like to hear how the prospects are for fruit for this year in this district. Pears of all kinds are very heavy with blossom, also cherries, and plums. I had a D. Purple plum that yielded over six bushels last year, now it is loaded with bloom, and apple contrary to expectation, notwithstanding the large crop last year are making a fine show, especially the R. I. Greenings that bore heavy the last season; the Rib. Pippin not much last year, are thick with bloom; the N. Spys I never saw such a quantity of blossom; Kings that had a load last year are not making much show while others are thick, several other sorts are very good if frost keeps away there will likely be a good crop.

WALTER HICK, *Goderich.*

Gooseberry Mildew.

SIR,—Referring to cures for gooseberry mildew in a recent HORTICULTURIST, I would just like to say that I have been growing gooseberries for a good many years, including all the leading English and American varieties, with excellent crops every year, and have yet to see a trace of mildew on my bushes, of which I have probably 50, all told. I think this is due to several causes—a warm, dry, sandy soil, plenty of wood ashes, say a patent pail to each bush every spring, spread as far as the area of the branches, and forked in, and constantly pruning the bushes to tree shape, where the habit of the variety will permit it, allowing a free circulation of air around and through the foliage. Never a chemical, except once in a while nitrate of soda, and Paris green or hellebore for the worms.

C. W. YOUNG, *Cornwall.*