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GROUP OF CINERARIAS.

W. & A. G. BROWN

THE
Canadian Horticulturist.

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THE CINERARIA.

The beautiful group of flowers with which this number is adorned will give to our readers a very good representation of the form and coloring of these very showy ornaments of the greenhouse. There is nothing more gay than a fine collection of Cinerarias, whether massed together so as to display their striking contrasts of color, or distributed among other plants to give an air of cheerfulness to the whole. A well grown plant when in bloom makes a most elegant subject for dinner-table decoration, while its hawthorn-like fragrance fills the room with most agreeable perfume.

These lovely flowers can be had in bloom from early in February to the middle of April, though usually they are in the fulness of their glory during the month of March. They are easily propagated from seed, which should be sown in light sandy soil, in pots or boxes. The soil can be best prepared by using one half good loam, and the other half a mixture of leaf mould and sand in equal parts, the whole having been run through a fine sieve. Fill the pot or box with the soil, having first provided for drainage, and moisten

it with water from a very fine rose. Then sow the seed upon the surface, sift over it the slightest covering of soil, and press it firmly with the bottom of a pot so that the seeds may be in close contact with the earth. Cover the pot with a pane of glass and set it in the shade, that is, where the direct rays of the sun will not fall upon it. We usually sow the seed the last of June or first of July.

As soon as the plants are well up, the pane of glass should be removed and the plants exposed fully to the light, but not to the direct rays of the sun. When the first rough leaves appear, the little plants should be carefully pricked out into thumb pots filled with soil such as has been already described. They can remain in these little pots until the roots have filled them, when they should be shifted into three-inch pots. If more convenient to use boxes than thumb pots, they may be pricked out into boxes, setting them about an inch apart, and allow them to remain until they grow so as to touch each other.

When they are shifted into the three-inch pots, the soil should be made richer

than that described, by lessening the quantity of sand, using only half as much, and supplying the deficiency with well rotted sods. When these pots are filled with roots, the plants should be again shifted, and as they increase in size and fill the pots with roots, they should be shifted into larger pots until you have them in as large pots as you desire: a six-inch pot will be large enough. At each shift make the soil richer and rougher, using more manure that has been most thoroughly rotted and turfy loam. When the plants become established in the largest pots it is intended they shall occupy, they should be freely watered with manure water, applying it until the flowers begin to open, then withhold it entirely and use only soft water. These plants require an abundant supply of water during their entire season of growth, and to be kept in a cool place, where they can have plenty of air and light, but very little sun. The best place is on the north side of some building, sheltered from drying winds, but not under the shade of trees. In watering, sprinkle with a fine water-pot rose in the morning and evening, and shelter them from heavy rains.

When it becomes necessary to take them in on account of danger from frost, put them where they will have plenty of light and air, and only the morning and evening sun, keeping the temperature as low as possible, so long as it does not fall below thirty-five degrees; and never let it rise above fifty. It will now be especially necessary to be on the watch for green fly, to which

they are very subject. In the greenhouse they can be fumigated with cold tobacco-smoke, which should be done frequently, so as to prevent the green fly from getting a lodgment. It is important to have the smoke cold, for hot smoke is injurious to the plants.

It is not easy to grow Cinerarias as window plants unless the window be enclosed with glass doors from the heat and dryness of the room. In such an enclosed window the temperature and moisture can be regulated to suit their requirements. But it may not be convenient to fumigate with tobacco, in which case it will be necessary to dip the plants in water in which tobacco has been steeped until the liquid is of a light brown color. This can be done by placing the hand over the earth while the plant is inverted and plunged into the liquid; do not wet the soil with the tobacco water, but let the plant drip thoroughly before placing it again in an upright position.

When they have done blooming, the plants may be thrown out on the rubbish heap, unless there be some so very beautiful that you are anxious to preserve them. In that case cut the plant back to within a few inches of the pot, place it in some cool, shady place, see that it does not suffer from lack of water, and when it has sprouted again, usually in the month of August, take it out of the pot, pull off the rooted sprouts, and pot each singly in a small pot, and treat them in the same way as if they were seedlings.

We trust that these directions for growing Cinerarias will be easily un-

derstood, and that many of the readers of the *Canadian Horticulturist* will have the pleasure of growing plants having heads of bloom two feet across, and the individual flowers measuring two inches and over in diameter. The magnificent display will well reward their care.

QUESTION DRAWER.

For how many years are young fruit trees improved by being transplanted, and how often?

Also, why are nectarines so difficult to raise? We never see any here.

W. W. R.

The improvement of young trees by transplanting consists in causing them thereby to throw out a large number of roots within a given space, so that when they attain to the size required for orchard planting they may be so well furnished with small fibrous feeding roots that they will not feel the removal from the nursery row to the orchard. An apple tree is taken from the seed bed when it is two years old, the tap root cut off, then grafted, and planted in the nursery row. When it has grown two years in the nursery row, it would greatly increase the number of small roots near the trunk if it were again taken up, the large roots shortened, and planted once more in nursery row and allowed to remain two years longer before being planted in the orchard. There is nothing to be gained by again transplanting the tree. Evergreen trees are benefited by being transplanted a greater number of times, because their comparative slower growth gives better opportunity, and their leaves being not deciduous there is the greater necessity.

There is no greater difficulty in growing nectarines than plums, save that

the tree is no more hardy than a peach tree, hence requires a mild climate.

MULBERRIES.

Will you be kind enough to give me all the information you can about the mulberry tree, as to its hardiness (1), productiveness (2), and quality of fruit (3)?

JESSE WELDON.

Oakwood.

1. The Black or English Mulberry is not perfectly hardy in all parts of Ontario. It will do best where the Peach is successfully cultivated. The new American Mulberry promises to be much more hardy. The Russian Mulberry should be hardy as far north as Sault Ste. Marie.

2. All varieties are exceedingly productive.

3. There is some difference in the flavor of the different sorts; but the three sorts named above are highly esteemed for fine quality.

SAUNDERS' RASPBERRY.

I beg to report my success with the Saunders Raspberry, received in the spring of 1880. It threw out four or five long, spindling shoots, four or five feet long, that I laid in a circle around the plant. One or two took root from the tip. However, I let them lay, and last spring it leafed out and blossomed finely and fruit set. I protected them from birds as much as possible. Fruit large and ripe. First picking, one quart of fine berries; picked twice more, in all about two quarts. I think very highly of the berry on account of its fine size and immense crop. I am propagating all I can, and intend to plant freely, as I think it will be one of our best paying berries. Soil, high dry sand.

C. H. BIGGAR.

Drummondville.

"BUHACH" ON CABBAGES.

A REMEDY FOR THE CABBAGE BUTTERFLY.

Last summer I recommended a friend of mine who grows cabbages on a large scale, and who has been a great loser by the cabbage worm, to try the Californian insect powder, "Buhach." I obtained some for him from Mr. Miles, of Stockton, Cal., and, thinking a few notes of the results may be useful and interesting to your readers, I send them to you.

My friend was growing about 3,000 head of cabbages, so that their protection was an object of considerable importance to him. In the beginning of September the plants were much injured, some of them nearly destroyed. The first application of the powder was then made in the form of a mixture of ten parts of flour to one of the Buhach. This was found to be rather too weak. Its effects were evident on those worms which were touched at the moment of application, but many of those not actually so touched were not injured. The experiment was made on 800 plants, and the time required was two hours.

A second application was made on September 7th to 1,000 plants in two hours. This time a mixture of one part of Buhach to eight parts of flour was employed, and the effect was much more lasting and complete.

On September 21st a third application was made to 1,000 plants, also requiring two hours. This time a mixture of one part of Buhach to eight parts of lime was employed. This was found the most successful compound of all. The lime formed a better dust-spray than the flour, and adhered to the plants equally well. The plants all formed new heads, and an excellent crop was the result.

It was, of course, not necessary to do more than to poison the outer rows

of the patch. In so large a number the inner portion is not visited by the butterfly, which rests upon the plants which it first meets.

The three applications mentioned above were consequently made upon the outer rows entirely, some of the plants receiving two and some three dustings.

My friend informs me that he considers himself a gainer by the presence of the worm this year, as its ravages threw the heading of the cabbages later in the season, and they were not fully matured until the cold weather set in. He was therefore at no trouble or expense in preserving them through the last few warm weeks of autumn.

E. W. CLAYPOLE.

Yellow Springs, Ohio.

P.S.—I sent you some time ago a few notes on my treatment of the potato beetle last summer with London purple, which appeared in your number for September. In order to make that account complete, I will add that as a consequence of preserving the tops from injury, I had the pleasure of digging from an acre of ground more than eighty bushels of good, large potatoes, worth at the time \$1 25 or \$1 30 a bushel. This was in spite of the intense drought, which destroyed almost all the potatoes in this district. Many of my neighbors, acting towards the beetle on the principle of "live and let live," did not get more than ten, or in some cases five bushels of small potatoes from the same quantity of land. Not a few failed to obtain even their seed.

I may add to the experience of my friend given above, that in my own garden I find the poison dust of London purple much more effective and much easier of application to cabbages in the early stages; but, in spite of many assertions to the contrary that

have appeared in print, I hold to the opinion that its use after the cabbages have begun to head would be very hazardous.

STRAWBERRIES—WHAT TO PLANT AND HOW TO GO ABOUT IT.

BY T. C. ROBINSON, OWEN SOUND.

Winter is the time to plan, especially for the fruit garden. Many persons buy a few quarts of inferior berries, and do without a great many they would like to have, for want of planning at the right time; and the planning is put off because a knowledge of the best varieties and the easiness and cheapness of raising them is not realized.

Any man who can look back on the strawberry bed in the home garden, when he was a boy, and the pleasant memories that cluster around it, will need little urging to add this attraction to his children's love of home, even with the memory of the trouble of hoeing and weeding in his mind. But if it can be shown that hoeing and weeding can be reduced to a tithe of what they were under the old system of cultivation, surely no man who has suitable land, and cares for his family, will be without strawberries—"the best fruit God ever made!"

And suitable soils are of great variety. Any land that will raise wheat, or potatoes, or corn—especially the last—will raise strawberries.

Planting can be laid out best while looking at the land. Let us take an imaginary trip, reader, into your garden, and if it is as bare of snow as mine is just now we may talk to the best purpose.

Your garden is from a quarter of an acre to an acre in size, I suppose, and you want enough berries for a family

of four to eight persons, twice a day, for as long a season as possible, with a sufficient surplus to entertain occasional company, and to preserve or can for winter. And if you can have that without its narrowing much that precious cabbage and potato patch, or costing much for the plants, or taking too much time and trouble for hoeing, or much bother at any other time, "well, you wouldn't mind," etc. I see! All right—very sorry I can't promise you the berries without any trouble at all, except planting and picking, but I'll show you what can be done.

Any part of your garden will do that is level or not too steep, and not shaded by trees; but if it is the same to you let us take that patch in the north-west corner, because the snow drifting over the fence will protect the plants in winter. Is your house or orchard in that corner? All the better then, perhaps. By planting immediately south or east of the trees the snow will fall deeply and evenly with still more certainty. Now let us have rows at least fifty or sixty feet long, because it will take less trouble in moving and setting your line to plant by, and if at any time you bring a team on with manure, or take a notion to cultivate with a horse hoe, you have less turning and less chance of injuring the plants at the end of the row. We will set fifty plants in a row about a foot or fourteen inches apart, and the rows two feet apart, because a strawberry plant needs about two square feet of land to do well on, and at that distance a horse cultivator can work with facility, if desired.

Now as to varieties. Do you expect me to advise you to stick in 500 or 1,000 Sharpless, or Bidwell, or Golden Defiance, or other sorts that you only know of from the headings of flaming advertisements in nurserymen's cata-

logues or advertisements. No! You know you wanted something reliable and not too dear; and these novelties are, many of them, untested and high-priced—except Sharpless, which is finding its level. Just take something first that you can depend upon. On your clay loam, Wilson's Albany will do its best, and probably some of your neighbors have it in abundance, and will readily let you have it for "Thank you." Just put out two rows of it, however, because its season, though quite early, is short, and one hundred plants will give you plenty for cooking, considering that you are likely to leave most of them for that purpose if you can get a sweeter berry to eat fresh. Put your Wilson's on the levellest strip in the patch, if there is any difference, and the heaviest land, and if you have any spare well-rotted manure that you don't know what else to do with give it to them; for the Wilson plant is not nearly so vigorous as some others, and in a dry season sometimes shrivels up—leaf and berry—if the land is poor and too sandy, or too stiff. "But this patch is fit to raise fair potatoes and cabbage," you say? It's all right then. Wilson will smile sweetly and give you a crop of fruit, or of runners—if not pinched—that will surprise you. But you would like something a little earlier than Wilson? Well, as your soil is rather heavy, you may try a row of Duncan. Not being a new sort it is pretty cheap, and it will come in nearly a week before Wilson, and give you a fine crop of large, sweet, rather soft, berries that will be about done when the main crop of Wilsons comes on. You must not expect as large a crop from the Duncan's; but the peculiar high flavor of the berries will leave little or no demand for Wilson's while they last; and they are really good yielders.

Now try one row of Prouty. It is

the handsomest berry I ever saw. Long, you know, something like a Kittatinny blackberry in outline, almost as uniform as if cast in a mould, with a smooth, shining surface, and a beautiful tint of scarlet, merging into pink on the shady side. Its quality is fine, and it sometimes out yields Wilson, size and season medium. But if your land is sandy, or poor, you must not think of trying it. It is such a great bearer—such a determined bearer—that on anything but rich loamy soil it runs all to fruit, and is apt to die as soon as the crop is gathered, or before.

Well, you must have some Sharpless, of course. It is so large and handsome, so late, and so good to take—put out a couple of rows and astonish the natives with berries as large as plums. But you will astonish no one but yourself unless you keep the runners off and the weeds down. Allowing it to mat up with runners and young plants will give you a miserable return of insipid, soft, pink-and-white medium berries that will not half pay for the labor of planting. Sharpless can get along without rich soil if you give it room enough; but its constitution—the reverse of Prouty—insists on plenty of sap in the leaves and stalks, and the fruit is fed afterwards. If the roots have room and the runners are checked, the immense vigor of the plant pumps the sap into the fruit, and you get fine berries and lots of them.

And lastly, we will finish the patch with one row of Glendale. It's not as large as Sharpless, or so good in quality or color. In fact it is very dark when fit to eat, and if you taste a berry that is "not ripe but only red," you will wish you had a Wilson instead. But the plant is of a wiry vigorous habit that can stand abuse. The blossoms seem better able to stand a frost when in bud than Sharpless, and it yields later pickings.

It is well, too, to have one row in hand for preserving in case a frost in early blossoming time cuts short the Wilson's, which are very susceptible to frost. Besides, when thoroughly ripe, many people seem to relish the peculiar flavor of Glendale.

But some man with sandy land would like to raise strawberries! Then, sir, keep your Wilson's for fertilizing, because most of the common sorts suitable for sandy land differ from those already named in being deficient in pollen to fertilize the blossoms. Then instead of Duncan and Prouty set two rows of Crescent which will yield an immense crop from very early till after the Wilson's, and be of better flavor than if grown on clay loam, and substitute one row of Champion (or what is either the same thing or something better, Windsor Chief,) instead of one of your rows of Sharpless. Retain the row of Glendale, and your patch is again filled up. These two kinds, Crescent and Windsor Chief, are not so sweet and rich as the kinds recommended for clay loam, but they make up for it in size of the crop, and both are very handsome. Windsor Chief is the largest, and like Glendale and Wilson, is not ripe enough for eating till quite dark in color.

Now you have seven rows containing altogether three hundred and fifty plants, that take up a space of ground fifty or sixty feet long, and say sixteen feet wide, allowing for paths at the outside, or a little less than four square rods in extent, and costing you from three to four dollars for the plants laid on the ground, if you buy all of them; or not more than \$2.50 if you get the Wilsons for nothing? Is not that within your limits of space and means?

But you want to know what returns to expect. Well, my friend, that depends mostly on how you treat the

plants. If you leave them to run races with grass and weeds after a hoeing or two, all except Wilson and Glendale, (or these with the addition of Crescent and Windsor Chief, on sandy land), will go to the dogs, and you will probably get some thirty to eighty quarts of little sour berries—to grumble over and declare strawberry growing doesn't pay. If you give about three hoeings and runner cuttings each year, on good, fair garden soil, you ought to get one hundred to one hundred and fifty quarts of fine fruit, while with first-class treatment and very rich soil you need not be surprised at over three hundred.

Any man who thinks this won't pay him on four rods of ground, has a call from fate to eat pork and potatoes, and had better be satisfied with a diet of that description!

But perhaps your means and tastes incline you to try some of the new varieties that come out every season with bounce and hurrah enough to cast in the shade the modest tested sorts we already have. Well, you will find it very interesting—indeed fascinating—to test *some of them*. But nibble cautiously at that sort of bait, my friend! I have been bitten over and over again in this line, by poor performances allied to grand promises—which, for a poor man, is unpleasant. Let me give you a good rule. Don't buy an article that only one nurseryman, or even two or three without much reputation, may recommend—no matter how highly they may praise it. But if several men whose good name is worth something to them, *e. g.*, Downing, Roe, Ellwanger and Barry in the States, and our own Dempsey, Beadle, Arnold, &c., speak in favor of a new variety, it is safe to try it. Buy a few plants, and if good, you can easily increase your stock. Of all the new varieties now before the public, Kirk-

wood, Jersey Queen, Gipsy, Orient, Satin Gloss, Primo, Longfellow, Warren, Shirts, Brilliant, &c., &c., how many will survive the third season from now? Without a doubt most of them will disappear, to be replaced by others of as high sounding pretensions. There are two new sorts now claiming attention that seem to be above all others in the uniform praise bestowed by men who have seen and tried them. They are Bidwell and Manchester—the former early, the latter late. Bidwell has been out longer, and its record is exceedingly good. After these Jersey Queen and Primo are of considerable promise. I expect to test Bidwell thoroughly next season, and Manchester slightly, and I have considerable hopes of both. One thing is certain, there is wide room for improvement yet in the strawberry. That some of the new sorts will fill the bill better than the old ones, all must hope who believe in the improvement of fruits, but which will be the variety to do so, is a question that needs considerable testing yet to determine.

SAUNDERS' HYBRID RASPBERRIES.

My Saunders hybrid is a great success. It stands the winter without protection, and is a heavy bearer of fine flavored berries, and is a strong grower. I noticed some complaint of it being difficult to propagate; mine must be different from the rest, as it threw up shoots for three or four feet around the old plant; I got eight good strong plants from it. The Burnet grape has not turned out well with me. It had only a few very straggling bunches on it, with a large proportion of the berries the size of peas. However, it made a great growth of wood last summer and may do better this year.

R. B. WHYTE.

Ottawa.

SHAFFER'S COLOSSAL RASPBERRY.

From all accounts this must be a most remarkable raspberry. It is said to have originated in the State of New York in the year 1869, and that the original plant, now over twelve years old, is yet growing with wonderful vigor, and yields extraordinary crops of fruit. Plants raised from it, without receiving any special care or high manuring, have grown to the height of ten feet, with corresponding breadth. And what is particularly surprising in a plant of such immense and rapid growth, it is claimed for it that it is a perfect iron-clad, surviving the most severe winters, unprotected, without the least injury. Its season of ripening is the same as the Gregg, yet continuing somewhat longer. Some who have grown it say they have no hesitation in claiming for it as it appears on their ground that it is the *largest raspberry in the world* on the average, as gathered by the bushel from the field. It is also very productive. The color is a rich, reddish purple. It belongs to the black-cap family, being propagated from the tips.

Of course it remains to be ascertained by actual trial whether this new variety will prove to be hardy under the severity of our Canadian winters, and whether, with all its wonderful size and productiveness, it will prove to be a profitable market berry.

A HARDY RASPBERRY. — The severe winters of the West afford a strong test of the hardiness of raspberries. D. B. Wier, of Illinois, says he has found from experience that the old Seneca black-cap is the hardiest of all the black raspberries, and able to withstand the most intense cold. The handsome, glossy appearance of its fruit, and its excellent flavor, in addition to its hardiness, should give it more attention than it has received of late years.—*Country Gentleman.*



SHAFFER'S COLOSSAL RASPBERRY.

REPORT OF SEEDLING AND NEW FRUITS FOR 1881.

In some of the departments of fruit culture this season, the supply has been most abundant and plentiful, more so, I believe, in this section than in some of the other sections of our province. As I have previously reported, for this section the small-fruit crop of this season was most encouraging and abundant. And now again, I am most happy to be able to report a magnificent crop of fine apples and luscious grapes. These crops, I believe, were quite exclusive and sectional as far as our province is concerned, being much larger and finer than in many other sections. For these expressions of benevolent favor, we should be more and more thankful than ever to the Great Fountain of good, "who supplies the need of every living thing." Without further preliminaries then, I shall at once take notice of the staple fruits as they occur in their order of importance, commencing with

APPLES.

In these the old standard sorts as Rhode Island Greenings, Baldwins, Northern Spys, and Russets, are as popular as ever and lose nothing of their real value and importance as domestic and marketable fruits. As I have previously intimated, our crop of this fine popular, standard fruit for this season was not only abundant, but handsomely developed, and much to the pecuniary profit of our growers. The demand for our apples this year was better than ever before, and our growers sold the whole of autumn and winter fruit to dealers who came to the orchard and supplied the packing for the whole. The price paid was from 80 cents to \$1.00 per barrel for autumn, and \$1.00 to \$1.50 for winter, and it was astonishing to see the quantities shipped at our ports. The consequence is our people are very much

encouraged in their efforts at apple growing, and are already planning for the extensive planting of new and much improved orchards, as they now see in the light of a keen market where they have previously erred, and are determined to rectify these matters. We have no indigenous apples of any importance whatever, as our natural specimens are too small and repulsive in flavor and texture in the light of better sorts. We have, however, seen some new sorts lately introduced that are likely to be of great value in our future stock of winter apples, and three of the best of those are Mann Apple, Grimes Golden, and Smith's Cider. The first is large, fine, and a good keeper, and the second and third are beautiful in color and relishable in texture and flavour; they are doubtless great acquisitions to our present enviable stock. We had early Harvest this year and in good condition Aug. 6th. and the beautiful new Russian apple Tetofsky, Aug. 8th. We are now growing a few western varieties that may ultimately be of great service to us, and valuable additions to our stock. These are Walbridge, Haas, Perry Russet, Utter's Red and Wealthy, mostly from Minnesota, and they are making splendid progress. In a few more years therefore, we hope to have something more splendid in the apple line to report.

PEARS.

This season was unfortunately an off year in our pear orchards, if the few scattering trees generally planted in this county, can properly be so designated. For growing this fruit we have a country well adapted both in soil and climate, and yet there are lamentably few and poor specimens grown, that is, compared with our capabilities. Why this is so is something like a mystery, but must be accounted for on the principle of reckless indifference. For

those produced the demand is good, and the price rules high, good samples readily bringing from \$2.00 to \$3.00 per bushel, according to quality. We are mostly satisfied with the old standard varieties as Bartlett, Flemish Beauty and Bon de Jersey, as we can hear of nothing better. And it may be sometime before anything better is produced. Clapp's Favorite, so largely disseminated by our society some few years ago, is now beginning to come into fruitfulness, and thus upsetting the popular objection against pear planting, that you must wait a lifetime before they come into bearing, this fallacy is now being timely exploded. Well, the fruit of this pear is fine, large, handsome and good, but very soft at maturity. The destructive blight of the pear tree so bad in some sections, is scarcely known here, even in those orchards that have been some time planted. We think suitable soil and careful preparation and drainage, with good culture, will largely overcome this difficulty in the culture of this a fine popular fruit.

PLUMS.

As far as soil and climate are concerned, this whole region is well adapted to the culture of fine plums; but it is very rarely that such is ever seen of late years. "What is the matter?" you ask. Oh, the same old disheartening story, "The Curculio takes them all," and really this is the fact, scarcely a sample being left to show us what they would be like. Years ago we used to find a large, handsome and relishable plum on our rich creek bottoms in the woods, but like many other good things of olden time they have fled with the Indians, and now their place knows them no more for ever. What native varieties are left are few and far between and are small and astringent. This season a large nursery firm, Parsons & Co., New York, sent to us for a large quantity of native plums, to be

used solely for their seed, supposing we had any quantity here; but we had to report in answer, "No plums to be had." The sorts we attempt mostly are Blue Orleans and another blue plum, but much smaller, and in some favored sections Lombard, but in the main plum growing is at a discount among us. I may say in passing, that Black Knot is also very commonly seen on old fruitless plum trees in our fence corners and other places.

CHERRIES.

I am very sorry to report that we are not by any means so successful in growing cherries as we are in growing some other fruits. As a matter of consequence a country that is famed for fine apples, pears and plums, cannot be equally noted for fine and beautiful cherries. The fruits in their very nature require different conditions of soil and climate. In our forests are some of the finest samples of cherry trees that eyes ever looked upon, and yet their fruit is not the beautiful, luscious, European cherry, but a small jet black fruit, strung on their stems like a cluster of red currants. We have frequently tried to plant the trees of those beautiful foreign sorts, we used to have in such plentiful abundance when we were at home, but in most cases we have sadly failed. Last winter made sad havoc among our fine trees, 15 or 20 feet high, and 6 or 8 years' growth, that we were fondly placing our expectations upon. Now they are lifeless spectres, that we can only uproot as so many cumberers of the ground. This experience is not uncommon, and is very discouraging indeed to us of so sensitive nature. The sorts mostly attempted are Black Eagle, Black Tartarian, for this color, and for red, May Duke, and early Richmond. The late Richmond or common sour cherry, as it is called, is largely grown and easily propagated, and gives on the

whole good satisfaction, as it grows readily in almost any sort of soil, and bears neglect and hardship very patiently. A good hardy, serviceable cherry is much needed for our common, every day wants.

QUINCES

Are not to any appreciable extent grown among us, as our people do not feel the need of them, not knowing anything either of their nature or qualities. It is, however, very doubtful whether our county, in climate especially, would in any degree suit them for development.

PEACHES.

The growing of this fruit in this section is getting to be quite an important industry, and thousands of trees are annually being planted for their fruit. The reason of this is the very general satisfaction the crop has given the cultivators for the last few seasons past in its quantity and in its quality. Our soil and climate seem not unadapted to the successful production of very fine peaches. This last season, however, was an unusual exception to our generally large and fine show of peaches. The reason of this was undoubtedly the unusual severity of the preceding winter, the high winds and the severe freezing having killed the peach fruit buds, and in some localities even the wood was positively frozen to death. This may not likely occur again for sometime, but it should be a valuable lesson to our peach growers generally, to be careful to provide screens or wind breaks, to their fruit plantations, for in every case the crop is benefited by it. Our crop therefore from about 150 trees did not amount to more than 20 bushels, which sold readily for a very high price in the market. I need not say that the peach is not indigenous in our country, but we have any quantity of seedlings produced annually, some good and some good for nothing. Mr.

Geo. Ott, of Arkona, has a very fine yellow-fleshed seedling, called Ott's beauty, that is really very valuable, as it is of very fine flavor, good size, ships well, and comes true from its own seed, needing not to be budded. These, you know, are good points and our people know how to prize them, and peaches will likely be planted largely, Mr. Ott himself having the finest orchard of about 2,000 trees that I have ever seen. The sorts mostly grown here are Early York; Stump the World; Crawford's Early, and some of the very early varieties lately introduced; but Crawford's is the best, and the largest planted. There was quite a stir made by the tree agents about Early Canada, and some of them effected large sales at good prices for the trees, but the fruit is not coming up to the expectations raised by the itinerants. It is true, it is early, maturing with us Aug. 5th. but it is nothing better than Amsden's June, being small and so intensely cling that it can scarcely be used. Mr. River's Early Louise is good, very early, and very fine, an acceptable fruit. It should be largely planted as it is as hardy as our seedlings.

GRAPES

Are a very popular fruit, and fast becoming increasingly interesting. Our country seems well adapted to their successful culture, and the probabilities are that many large vineyards will be planted all over where favorable localities can be secured. The crop last season was immense, and all found a ready market at the time of maturity. Our people however, are very slow in planting out the vines, as they are much afraid there is some secret in their management, and they could not possibly do it, but still many are experimenting in small quantities. Black sorts are most popular, as our people are somewhat careless or suspicious of red or white varieties. The sorts most

grown are old, well tried kinds, as Isabella, Clinton, and Concord, which is by far the best of them all. On our creek and river bottoms there is a small, black frost grape that grows very luxuriantly over the trees, but the fruit is valueless for anything excepting for wine purposes. For a fancy grape among us the Delaware is the most popular, and the people treat it with becoming respect. It succeeds remarkably well. The new sorts that are being introduced are Pocklington, Brighton and Burnet, so named after our honoured President. Of these Brighton is likely to become a popular and general favorite, and its introduction last season by the F. G. A. will largely hasten this result, as the stock was before held as scarce and dear. Burnet, introduced by the F. G. A. two years before, is also likely to become a great acquisition, as it is a remarkably fine grower, and what fruit we have yet seen is very good indeed. Of the whites we had this season a remarkably fine crop of Marthas. This is really a very fine vineyard variety, and for our climate perhaps as good, all things considered, as we need wish. The vine is very hardy and a good grower, the bunch is large and compact, and the berry is large and of very fine flavor, that hangs well to the bunch. The fruit sold well and at good prices. Champion was ready this season August 28th, Hartford Prolific Sept. 4th, and Concorde Sept. 9th, but on account of the prolonged summer droughts fruits ripened a few days earlier than usual.

OUR GRAPE CROP.

Perhaps it may not be uninteresting or out of place here to give a synopsis of our beautiful crop of grapes this season, as they appeared on our grounds. It was certainly the finest sight of the kind I had ever seen, and it was difficult to realize that such a crop of fine

fruit could be produced. Many came to witness it and testified to its unusual excellence. The plantation consists of 250 vines, and their net product was 5,000 lbs., of first-class fruit, that sold for \$400 in the market. The average product per vine was 20 lbs. At the same rate of planting, an acre of ground would contain 544 vines, and their united product would be 10,880 lbs., $5\frac{1}{2}$ tons, or in value \$870, an excellent showing doubtless for grape-growing in this country, with all its disappointments and frigidity. According to the late report issued by the Commissioner of Agriculture, at Washington, U. S., 1880, on grape growing and wine making for that country, the highest yield per acre for that county, Kent, in the State of Michigan, was 10,000 lbs., and the average for the counties of the State was 45.23 lbs. per acre. At the present time wine making is not attempted among us, the market readily absorbing the whole crop of grapes, as soon as it is matured.

SUGGESTIONS.

1st. As the American people at the present time are deeply concerned about their grape culture and wine-making as a national industry, and are earnestly collecting official statistics relating to them, would it not likewise be well for us also to be awake in this matter, and more earnestly encourage and assist grape growing amongst us?

2nd. Would it not be a most successful means of modifying the excessive use of ardent stimulants amongst us, and prove a great national blessing to so encourage a supply of home made wines, the pure juice of the grape for general and domestic purposes.

3rd. Can any good substantial reason be successfully urged why this should not be done, seeing our facilities are so favorable?

4th. I would most respectfully sug-

gest and advise that this subject be taken up and thoroughly discussed in public assembly, at the next winter meeting of our associations.

All of which is most respectfully submitted.

B. GOTT.

Arkona Nurseries, Nov. 21, 1881.

TREE PLANTING.

A DUTY OBLIGATORY ON THE STATE !

A Paper read before the Ontario Fruit Growers' Association, by B. Gott, Arkona, Ont.

Our theme, you say, is again *tree planting*, and perhaps you will feel inclined to call it hackneyed, stale, &c. But after much mature and sober consideration of the subject in its various phases, we are increasingly impressed with the validity of our position concerning it. The very nature of the work in its importance and extent at once invests it with this high pre-eminence. We hope, therefore, that while we quietly pursue the line of our argument to its close you will kindly give us your calm and candid attention, and that we and our subject may be treated at once with becoming manliness and Christian grace. The proposition though somewhat startling and deviating slightly from our accustomed notion of things is still at once simple and very plain, viz: That it is the duty of the State to encourage tree planting wherever the need exists. The force of the statement may be made more clearly to appear from the following very proper considerations: 1st. Nothing so promotes the best interests of a country's healthfulness, beauty and utility, like extensive and judicious tree planting, and it is the recognized duty of the State to encourage, and in every possible way, secure these much valued properties to her people. 2nd. It is the duty of the State to aid and encourage national agriculture, and our

proposition is analogous and closely related to it. That the encouragement of agriculture is a duty of the State is clearly apprehended in the customs of all civilized and progressive nations; witness Old England, France, Germany, the United States of America and Canada. The leading and honored countries annually lay out millions of the public monies of the State for the support and encouragement of their national agriculture. And by this means have perfected the highest and best systems of popular agriculture known. Why is this encouragement found needful and beneficial? Because simply that it is a well known demonstrable fact that stability and permanency of the state cannot exist without it. In some countries, as ours for instance, this is absolute because it is the main source of production and the treasure house of the wealth and material greatness of the State. In many respects these remarks will forcibly apply to general tree planting and forestry. These noted centres of power, of wealth and of civilization already mentioned, not only acknowledged the general truth of our proposition, but are generously and studiously acting upon it in the millions of acres of noble forest wealth to be inspected on their borders. Are we doing anything in this direction? But, 3rd. It is the duty of the State to protect and encourage her educational interests. This as a measure of increased efficiency and wealth is also closely allied to our position with respect to tree planting. The duty of the State to foster educational interests among her people is a position now generally accepted, and needs but little attempts at proof. The force of this practical truth is abundantly exemplified in every day transactions of all great and prosperous people, and indeed it is itself the great foundation, the "chief corner stone" of all great-

ness and prosperity. But again the burden of general and extended tree planting is work, at once so ponderous and so exhaustive, that individual and isolated effort is inefficient and pales away into utter insignificance before it. Also the tastes and personal opinions of men with respect to any great public matter are in themselves so varied and in some cases opposite, that but little real progress can be effected in any one direction. This may be greatly modified and much better results become apparent when the overruling wisdom of the State presides. But further the individual life of man is in itself found to be too short and too uncertain for any great public endowment requiring length of time and great concentration of active forces. All acknowledge that tree planting for the good of themselves and their posterity after them is their duty, and that it should be done, but individual effort, if it happens to be in the minority, is singularly and painfully unavailing. If men have the assurance that their work in any one direction is appreciated by those in authority over them, and that it would eventually overcome all hostilities and be a great and pleasant success in the future destinies of their country, there is little possible doubt of the astonishing results. Self-interest, too, being in the general direction would render the task less imposing and very greatly assist in the matter. But we must very briefly proceed to consider the nature of the question, and the nature of the obligation the State is laid under to encourage it. By tree planting we would of course be understood to mean the planting of living trees for ultimate results, as for timber, for fruit, or for ornamentation. All tree planting may be properly included as regards the results under the head of one or other of these three great classes or departments. The latter two classes of tree

planting are easily got along with, and require but little from the State in the way of assistance and encouragement, as the prevailing and powerful motor and stimulus, self-interest, as we have before said, is in the line of this direction. It can always be appealed to, and is always capable of great results if a moderate amount of encouragement can be secured. By this means the prosperous farms and beautiful and happy homes all over this favored country are secured. The most obvious encouragement here required from the State will simply be good and efficient measures for the best possible protection of the products after they are attained. These, I suppose, we ought to consider, we assuredly have at least in Canada, as the man who dares to enter our orchards and tread or cut down our fruit or ornamental trees is most severely punished *if we can catch him*. And so of the man who carries off our fruit by the bagful. We, however, sometimes think according to our experience in this matter that the moral sense of wrong that is stamped upon the minds of our perambulating youth is but very feebly made, and that if we had them securely in our hold we should much relish the duty of impressing it more efficiently upon their shoulders. The fact undoubtedly remains that orchard protection in this country, as at present understood, is not considered satisfactory either for purposes of encouragement or safety. But though those classes of the subject are so easily managed it is not by any means just so with the first, for although the principle of self-interest may also, to some extent, exert an influence, here it is at a much further distance away, and consequently is neither so active or so potent in accomplishing good results. Other effectual motors must be applied. We realize as a fundamental principle in the govern-

ment of nations that the vital interests of the State is in the hands of her ministers, and that these should, as in duty bound, be thoroughly alive and wide awake to those interests. We would humbly suggest, therefore, that the influence to be brought to bear on a people for the advancement of any great public improvement might be:

- 1st. Limited measures, bearing mildly on the subject to be advanced, may be passed in the Legislature of our country advising and offering inducements.
- 2nd. Statistics and reports as to the actual state of the country in this particular might be authorized to be made and sent in to the minister of the department, effected at greater or less intervals of time. Other forms of inducement and encouragement we shall further consider subsequently, but it is evident that simple means backed up might sufficiently influence to move in the proper direction. We will now in the meantime, as briefly as possible, proceed to consider some of the advantages of tree planting.

And these will appear to be: 1st. To embellish and beautify the landscape. Of the force of this statement we are all more or less keenly sensible whose homes are happily cast in the midst of the attractions. The converse of this is to be witnessed by the denizens of the trackless prairies of Central America. 2nd. To provide for the use of the inhabitants timber and fuel for mechanical and domestic uses. For these purposes alone an abundance of fine timber may be the means of saving to a country many millions in value annually. 3rd. To regulate and modify the climate of the country. That forests have an effect upon climate is abundantly attested by the best of proofs. See for a full and satisfactory statement of this whole matter "*the report upon forestry*" made to the department at Washington, 1877, by F. B. Hough, Commissioner.

We are indebted to this admirable and exhaustive work for much of our subject. A work that should be in the hands of every studious citizen of our country. Though it is not meant that trees alone make the conditions of the climate of a country, yet it is meant that they are important recognized factors in the distribution and modification of climate. 4th. To encourage and distribute rainfalls. This phase of the subject has had given to it much scientific and mature attention of late, and it is a subject that is in every way worthy of attention, for what matters it though our country be never so fertile if our rainfall be insufficient or very poorly distributed? These and each of them should be inducements or arguments abundant to the inhabitants of any country to be studious and lavish in their efforts at tree planting in their midst. Surely none of us wish to have brought upon us by our own efforts the converse of this state of things! For a moment we will now look at the nature and the extent of the obligation to plant trees, and we can get perhaps the best view of this kind of obligation by considering it as 1st, pecuniary, 2nd, physical, and 3rd, moral. The pecuniary argument is the money view or estate argument, and of course is at once a very potent one. It may include all the direct advantage to be got from the trees in the shape of fruit, and its immediate effects, also, in the shape of beauty. This is a very extensive consideration, and yet it is lowest of all the arguments, and consequently we bring it on first, and also because it is the argument that is most readily appreciated. It is endless in its relations to our material interests, and is therefore a fit and proper subject for the highest encouragements of the State, for if it is not, then what is? The second or physical argument grows out of the first, and is somewhat de-

pending upon it. It has reference to the pure animal or physical enjoyment growing out of the duty and following the practice of tree planting, and may be considered in its effects aside from its money value. In planting trees we are regaled, invigorated and satisfied by their fruits, we are protected, warmed and comforted by their timber, or we are instructed, pleased and delighted by their nobility, grandeur and beauty. This argument is very extensive in its import, most readily appreciated and very forcible in its character. The third or moral argument is the product of the two former ones and their consummation. It has reference to the effect on the character of a people thus enriched and ennobled by their wealth of profitable and beautiful trees. To say that tree planting has no moral side to it, nor can have, is to run contrary to our experience, and is bordering on the absurd. It has! The people who are so abundantly enriched, both pecuniarily and physically, by an abundance of fruitful and profitable trees are capable of higher developments of moral character than the people who have not these advantages. Their trees have the effect upon them of supplying their needs and of inspiring their hearts with gratitude. Not the gratitude merely of the untutored Indian who roams in nature's boundless forests, unconscious of the true character of the benefits surrounding him, but rather the gratitude of reflection, of enlightenment and of a heightened devotion. As we have already hinted, we must now very briefly glance at the nature of the encouragements looked for in this particular. This may be best stated in the following order: 1st. Government premiums should be offered for the most extensive, best kept and best bearing orchards, in different parts of the country, and to be decided by a Government appointed visiting

committee. These premiums may be in cash, or they may be in diplomas, or in both, as the end and object is best furthered. And the effect would be very influential and marked on the destinies of the country. The principal influence may be ascribed to competition, which is a most powerful motor in human affairs. 2nd. A commutation of taxes or statute labor should be granted from time to time for trees planted by the roadside, to be determined according to the number and value of the trees planted, and properly cared for, by an officer appointed for the purpose. The influence of this kind of tree planting is very marked in the annals of a country, and even the traveller will tarry to bless his country for this generous and rich provision of his nature. On account of the difficulty and danger of this sort of tree planting it needs and should get special protection for its successful issue. 3rd. To encourage forest tree planting on a large scale over the country, assurance of special favors and rewards should be publicly made known. These may consist of commutation of all taxes for more or less years, according to the extent, variety and perfection of the plantation, to be determined as before by a visiting committee. Further special premiums should be offered at stated periods to the owners of most approved forest tracts, to be determined by efficient judges appointed for the purpose. The influence of this kind of tree planting on a country is so great and so lasting and widespread that we lay special stress upon it. Moreover the expenses, difficulties, hinderances and discouragements are so constant and so formidable that special inducements and helps must be supplied by the State, even at some sacrifice, in order to accomplish telling results. By these or similar means many tracts of fine, thrifty forestry would

soon spring into being over the face of our beautiful Canadian landscape to replace the sites of those old primeval forests so rapidly disappearing from the scene. The objections to this kind of tree planting may be stated in brief to be: 1st. Your teaching would depreciate and ultimately destroy private enterprise. This objection misinterprets the force of our teaching altogether. We do not mean to assert that the State should do all the work and the citizens nothing. No, no! We rather mean simply that it is the duty of the State to *encourage private enterprise*, and in every possible way to help the citizen. 2nd. Life is too short for such extended operations, and we should never see the results of our labor and care. In part we acknowledge the force of this objection, and in a larger part we do not, for though life is short, as we all sadly feel, yet many fine results have been seen by the operators in this direction. Besides, the objection has much of its point from a well known selfish principle influencing very many to leave as little as possible to those who shall come after us for fear our children will never thank us for it. 3rd. Our farm is too small to spare land for tree planting, as we want all our soil for grain raising and grazing. This objection is positively absurd on the very face of it, as any one traversing this country over hill and dale will readily see. How many thousands of such acres of Canadian soil are now lying in a state of comparative uselessness that might advantageously be used for purposes of tree growing? I stop not to answer; we all know they are immense. 4th. Our nursery men have not turned their attention to the matter of extensive forest tree growing, and consequently trees are difficult to obtain, and beyond our limited means. The force and

pungency of this objection can be readily dispelled, like the morning cloud that passeth away. Only let the want be felt, or gently hint that the demand is likely to occur, and the stock can be supplied by the million, and on the most liberal terms; and we have every confidence in the supply if there is only likely to be a good demand. 5th. Trees planted by the roadside have a tendency to impede traffic and to harbor wet, fungus, &c. This objection, though pretty well rooted over this entire country, is mainly resting on misrepresentation, and is contrary to our experience. If proper kinds of trees are properly planted by the roadside, and moderately proper attention can be given to them, they will grow up to be the beauty and adornment of our country, and a source of everlasting blessing, and consequently cannot be charged with the detriments objected to. But 6th, and lastly. Trees in blocks exhaust the soil, and by their shade exhaust neighboring fields. In answer we would ask, "Exhaust what soil?" for they cannot exhaust the neighboring fields to any perceptible extent, and they positively enrich the soil on which they are now standing by their gaseous and vegetable deposits. As for the shade complained of, this is so meagre that it is scarcely worthy of a passing consideration. With these objections and their answers, we shall now close our paper, and confidently leave the resultant consequences to the mature judgments of your mind. We only regret that it was not in our power to bring better and more thorough ability to bear on a question at once so interesting and so important. We hope yet to see the day when the measures here recommended shall be recognized by the authorities of this country.

January 18th, 1882.

THE MAYFLOWER TOMATO.

Those who have seen the Tomato grown as a garden vegetable only, to supply the wants of the family, can hardly be aware of the important position which it now occupies among market crops. In some localities, in fact, it rates in importance before any other product of the soil. This is owing to the immense quantities used in the canning factories, amounting in some establishments to over a million of cans a year.

The principal points to be desired in a Tomato are earliness, firmness, good, uniform size and shape, bright color, pure flavor, perfect ripening, good keeping quality and productiveness. To unite all these in one variety has



THE MAYFLOWER TOMATO.

been the aim of originators of new seedlings.

The Mayflower is the latest competitor among these claimants. It was

raised by Mr. F. H. Hosford of Vermont, and after several years' trial, considered superior, in several respects, to any of the older kinds. It is very early, ripening but a few days later than Little Gem, and averaging in size about one-third larger than Acme. It is of a glossy, bright red color, ripens evenly and completely up to the stem, is perfectly smooth and almost globular, slightly flattened; flesh solid, with few seeds, and of a rich pure flavor. Its productiveness and shipping qualities are claimed not to be equalled by any other variety. The Massachusetts Horticultural Society, at its last exhibition, held in connection with the American Pomological meeting, awarded the first prize for the best new Tomato to the Mayflower.

THE ESSENTIALS FOR SUCCESS IN PEACH GROWING.

A good degree of special knowledge of the business, and a taste suited for the work.

Selecting suitable land upon which to plant. Land upon which the peach has grown within 15 or 20 years is unsuitable; wet land is not good; but moderately rich corn land upon our high hills is quite suitable.

Continuous good culture, with hoed crops (if desired), for two years, after which clean culture continuously, and no crop but the peach.

A moderate dressing of unleached wood ashes, ground bone and slacked lime annually. The orchards should not be forced to make a heavy growth or a late growth in autumn; therefore, keep mellow and clean in early summer, and stir the soil as little as need be after August 1.

Guard well against the peach borer. To do this, in May supply a wash of this nature: Use 10 pounds of good lump lime and 1 pound of sulphur, slack

to a proper whitewash consistency; then add 2 quarts of soft soap, or its equivalent of whale oil soap, and if convenient thin down as required with a strong decoction of tobacco. Having this, lay bare the collar and main roots of the trees, forming a sort of basin around each tree; then with an old broom wash the exposed roots, collar and trunk of each tree. This will be too offensive an application for any insect, and is also healthful. And in November mound up the earth about the tree in a small cone, with one or two quarts of wood ashes on top as a protection against mice, removing the same in May,—and thus year by year, repeat.

If possible, mulch with some coarse manure or other material at setting in of winter, not around the trunk of the tree but under the outer branches, as a safeguard against severe winters and premature spring.

Proper pruning, and this should embrace judicious shortening in.

As I have already hinted we should avoid a late growth by not cultivating after July, and also by only a moderate cultivation. The peach tree should neither be stinted nor forced into excessive growth. Avoid also heavy cropping first, by previous cutting back and thinning out of superfluous branches, and again, if necessary, by thinning out fruit. But by no means allow exhaustion of the trees. Hence, feed the young orchard moderately, and the bearing orchard fully. Excessively rich soil should not be selected for the peach, for rapid growth is quite likely to be followed by early decay.—P. M. AUGUR, in *N. E. Homestead*.

EARLY PEARS.—The following varieties give a successive supply at the North from late in July till the middle of September: Doyenné d'Été, Bloodgood, Giffard, Rostiezer, Petite Marguerite, Tyson, Washington, Bartlett.—*Country Gentleman*.

CELERY GROWING.

One of the most successful garden crops that I raise is celery. I raised the past season about 5,000 heads, of which I lost about 1,000, owing to the winter setting in so unexpectedly. The 4,000 heads saved will bring, when all sold, about \$125. This was all raised as a second crop following peas, and it did not occupy more than one-fourth of an acre. I also sold about \$25 worth of celery plants. I raise very nice plants in the following way:

I sow the seed in a cold-frame about the middle of April, and when about an inch and a half high, I transplant to beds four feet wide and sixteen in length, setting the plants two inches apart each way. As soon as the bed is finished, I have frames made of narrow strips of board and lath, the lath being their width apart. These I place over the bed about eight inches from the plants on the top of the stakes, three of which are driven on each side of the bed. By the use of these frames the plants enjoy a free circulation of air, and are just half the time in the shade (while the sun shines), and will not wilt or need watering, except at time of setting out. The frames may be left on until the plants become well-rooted. Plants treated in this way become very fine and stocky in from four to six weeks, and may then be taken up with a ball of earth as large as a man's fist adhering to each plant.

I transplant to the trenches from the 1st of July to the 1st of August. The trenches I make very shallow, about two inches below the surface after the plants are set out, some kind of fertilizer being below the plants. I have seen the best results from well-rotted stable manure. I commence to earth up as soon as the plants begin to spread, so as to keep them growing in an upright position, taking care not to choke them

with too much earth at one time. I raise the dwarf varieties, and have found the London Red the best for late keeping, also the best flavored according to my judgment. I have the trenches four feet apart, and the plants six inches apart in the trench. This, I think, is as near as is convenient for earthing up.

Before I commence to earth up I loosen the earth on each side of the trench with a hoe. I then get down on my hands and knees astride of the row, and, while holding the stalks of a plant together with one hand, I draw the earth up with the other, pressing it down firmly around the plant. The best time to do this is when the ground is a little moist, but not wet. This process is called "handling," and by many it is called hard, disagreeable work; but there is no work in the garden that gives me more genuine satisfaction. This first handling brings the plants up nearly level with the surface, and before the second earthing up I run a cultivator between the rows. I commence to harvest the celery for winter about the first of November. My way of storing is to make large beds of it on the cellar bottom, setting the celery upright, and not too close together, and using earth enough to cover the roots well. If the cellar is dry the beds may be watered occasionally, but in a damp cellar it would not be necessary, and would be apt to induce rot.—*Rural New Yorker.*

THE CALLA LILY.

This old plant is too well known to require any extended notice. If the bulbs or tubers of this lily be potted in good soil about the middle of September, and given a liberal supply of water at all times, it will quickly start into growth and give out its fine, large flowers from December to May. Manure water is very beneficial to this plant. After

flowering, gradually withhold water, and when the foliage shows signs of decay, lay the pots on their sides and give no further care until time for repotting, when the tubers should be cleansed of the old soil and repotted into new. When grown in the sitting room the leaves should have an occasional sponging to prevent the accumulation of dust.

THE TUBEROSE.

(*Pollanthes Tuberosa*).

The original, single variety is a native of India, and has for many years been grown in large quantities in Southern France, where the flowers are used for manufacturing perfumery.

The double variety, which is now almost exclusively used for garden purposes, is very much superior to the single one in the size and appearance of the flowers. Owing to the easy manner in which they can be cultivated, they are found in almost every garden, while their rich perfume and clear white color have made them very desirable for all sorts of floral designs.

To make the flowering of Tuberoses a success, it is indispensable to procure sound bulbs, of good size. If the center of the bulb, or "flower-germ," is not perfectly sound, it is hopeless to expect flowers; and any bulb, be it ever so large, that has flowered once, will not bloom again.

It is a common mistake among amateurs to select the largest bulbs, when buying. Frequently, the flower-germ in large bulbs has been so far advanced as to get killed or injured by the drying process which the bulbs have to undergo to keep them sound over winter. A medium-sized, well-formed bulb, with a hard, sharp-pointed neck, is the kind to be recommended, as these can, with proper treatment, be depended upon to flower successfully. There is no way of telling, in the dry

bulb, the difference between the single and double variety; the buyer is depending solely on the honesty of the dealer. I think it well, however, to remark here that it is not always the fault of the dealer if what is sold as the double comes single. The double variety is only a sport of the single one, originally produced by garden cultivation; and it is not a very uncommon occurrence to see them running back again, especially if the bulbs are grown in the same ground a number of years.

Before planting the bulbs, all the little bulblets, or "sets," which are always attached to the main bulb, should be removed, as well as the sprouts or eyes that may be showing on the sides of the bulb. By this operation all the strength and nourishment that are contained in the bulb will be preserved for the development of the flowers.

The proper time for planting, in this vicinity, is the latter part of May or beginning of June. It is of no advantage to plant Tuberoses before the soil is thoroughly warm. The bulbs should be placed at least three inches under the surface of the soil, and will do best in rich, warm, sandy ground, exposed to the full sun.

If wanted for early flowering, the bulbs may be planted about the first of March, in small pots, with clear sand or sandy soil, placed in a hot-bed, and replanted in larger pots, with rich soil, as soon as started. They must not be planted out, or left uncovered, before the end of May.

The "Pearl" Tuberoses, a variety of later introduction, and in general respects similar to the old double, bears somewhat larger flowers, on considerably shorter and stronger stalks. Although the flowers of this variety do not keep as long as those of the old kind—a consideration of some importance

to the professional florist—its dwarf habit makes it most valuable for greenhouse cultivation.—*American Garden.*

LOST RUBIES, THE MONARCH OF MARKET RASPBERRIES.

Few varieties of fruits have called from the press and the people such attention as Lost Rubies. Its suggestive name, the uncertainty hanging over its origin, and its remarkable qualifications lead speculative minds to a wide and suggestive field for thought and controversy. We have fruited it six years, and every season it was a surprise and a wonder to us; an enigma which we sought to unravel by submitting it to leading pomologists, but their evidence all went to convince that Lost Rubies is a choice seedling of which they have no record. Coming to us, a few scattering plants with dark, purple polished, almost thornless canes, with evidences of aristocracy, mixed helplessly with a mass of bastards—wild vagabond varieties that never set one single berry, good or bad—the counterparts of those thorny barren pests growing in the wild underbrush by the acre, we had reason to believe we had a choice seedling, but having no absolutely positive evidence as to its origin, and wishing to stand fairly on the records, we stated from the first that its origin was involved in obscurity, and offered it on its merits alone. We are willing to withdraw the cognomen if proof is given that it should be withdrawn. Here is a red raspberry possessing many of the qualifications of foreign sorts, rivalling the grand old Franconia in size, quality and beauty, yet in other respects giving evidence of being a native, ranking in hardiness and vigor next to the iron-clad Turner. Ask any fruit man if he knows of a bright, firm, large and superior flavored red raspberry that will endure winters when mercury marks 10 to 20

degrees below zero. No, he will say there is no such variety. Well, Lost Rubies is just the berry that fills the bill. Plant it in a field apart from all other varieties, and it will not exhibit its remarkable productiveness, yet it will yield well there. But plant it in blocks, with a row of Cuthbert every ten or twenty-four feet, and if your soil is anything like mine you will see the largest yield of fine fruit imaginable. I have not found anything to equal it. It ripens with the Brandywine, and continues in bearing several weeks in favorable seasons; not a few scattering berries, but large pickings for market. One need not wait a year to see its fruit. If a few inches of the old cane is left on at planting it will bear fine specimens the season planted—an indication of its vitality and productiveness. Having tested almost every popular variety, the Lost Rubies takes the lead over all for a profitable market berry.—*Fruit Grower*.

T. C. Robinson, of Owen Sound, says: "No one can convince me that Lost Rubies is akin to foreign sorts; the leaf and cane are as plainly native as our Canada thistle. I want to plant more of it."

BOOK NOTICES.

In Press. HOUGH'S ELEMENTS OF FORESTRY.

Designed to afford information concerning planting and care of Forest Trees for ornament or profit, and giving suggestions upon the creation and care of woodlands, with the view of securing the greatest benefit for the longest time. Particularly adapted to the wants and conditions of the United States. By Franklin B. Hough, Ph.D., Forestry Division, Department of Agriculture, Washington, D.C. 1 vol., 12mo., illustrated.

This work is designed to present a concise outline of the general subject of Forestry in its various relations, and especially to afford directions for the planting and care of trees in groves, or as windbreaks, or for ornament.

Although the range and capabilities of species will be noticed, with reference to the whole country, and the special interests of other regions will be included, particular attention will be given to the subject of tree-planting in the Western States, and on the borders of the great plains, with suggestions as to the methods best adapted for securing success under the difficulties there encountered.

The work will be illustrated by engravings in the text, as the subject may require. Technical details will be avoided, and the greatest care will be taken that the definitions and terms used are concise, plain, and easily understood. No theoretical discussions will be introduced, and no statements but those founded upon approved authority.

The author has been several years, and is now, engaged under an appointment from the General Government in investigating the subject of Forestry in the Department of Agriculture, and his reports, published by order of Congress, have received the approval of the highest authorities upon Forestry in Europe. They were awarded a Diploma of Honor at the International Geographical Congress at Venice last autumn. Robert Clarke & Co., Publishers, Cincinnati, O.

BLACKBERRIES.—The Snyder is gaining popularity on account of its great hardiness and productiveness. Ellwanger & Barry regard it the best for family use, for although only moderate in size, it ripens thoroughly throughout without the unripe core of some other sorts, and it is very pleasant in quality. The Kittatinny had become a general favorite before it was known to be so liable to the yellow rust, the fruit being better and the canes hardier than the Rochelle. Wilson has long been the great market blackberry of New Jersey, but farther north it does not endure the winter. Our plants, after bearing a few times a large and not very good berry, gradually perished during the successive winters.—*Country Gentleman*.

SHELLING PEAS.

Pink sun-bonnet hauging down;
O'er a fair face half a frown;
Basket tipped up on her knees—
Maiden busy shelling peas.

Looking o'er the garden wall,
Youthful figure, straight and tall,
Lounges with a careless grace,
Straw hat pushed off sunny face—

And a pair of lazy eyes
Look with cool and calm surprise
On the fingers plump and white
Snelling peas with all their might.

"Such a busy little bee
Puts to shame poor thriftless me!"
And a yawn, half made, half real,
To these words gave sign and seal.

Pink sun-bonnet nods assent,
Fingers give the pods a rent,
As though saying, "Were these you,
I'd soon show you what I'd do!"

"So you think I ought to be
Quite ashamed of this 'poor me,'
Who bewails his lazy lot
And to better it tries not?"

Pink sun-bonnet gives a nod,
Cracks a fresh new glistening pod,
Which, exploding, seems to say,
Answering for her, boldly, "Yea."

Lazy-eyes dart a quick look,
Naught but silence will they brook;
Bending closer they peer down
'Neath the bonnet's clumsy crown—

"I would toil and strive each hour,
Working with a will and power,
Had I aught to work hard for—
Some sweet bright reward in store."

Pink sun-bonnet laughs out now,
And the face is all aglow,
As she answers, pointing down
To her basket with a frown—

"Lots of shell and little peas;
Words are well and sometimes please;
But words are silent—it's your need:
Talk is easy—prove by deed!"

Quick the lazy eyes flash fire,
And the owner bends down nigher,
Till the color in his cheeks
Fades and flickers as he speaks—

"Ah, but 'tis within the shells
That the perfect fruit first dwells:
All my words I'll prove quite true,
If my reward may be you!"

Pink sun-bonnet's still and dumb;
Busy fingers quite serene;
Brow the basket off the knees,
And down roll the half-shelled peas.

"See, you work in vain alone—
Without help nought can be done;
May I then through our lives be
Helplmate to you loyally?"

Two brown hands clasp fingers white;
Lazy-eyes grow clear and bright;
Pink sun-bonnet 'gainst her will,
Looks up with cheeks pinker still,
And again it gives a nod—
Then a noise! Was it a pod?
Something sounded. Ar you please.
It all happened—Shelling Peas.

DOMESTIC RECIPES.

ORANGE SYRUP.—To one cup of the juice of ripe thin-skinned oranges add one and a half cups of powdered sugar, boil and skim, when cold bottle and put in a cool place. Fine for flavoring custards or pudding sauces.—**AARON'S WIFE, in Prairie Farmer.**

LEMON JUMBLES.—Ingredients: Eggs, one; sugar, one teacup; butter, two-thirds teacup; milk, three teaspoonsful; cream tartar, one teaspoonful; soda, one-half teaspoonful; lemons, two; flour. Use the juice of both lemons and grated rind of one; mix rather stiff, roll out, and cut with cake cutter.

BAKED TOMATOES.—Sprinkle a layer of bread crumbs into a yellow nappy or a baking dish, and spread over it a layer of chopped raw tomatoes, seasoned with pepper and salt, and bits of butter. Fill up the dish, having the upper layer of bread with bits of butter. Bake for three-quarters of an hour. An excellent breakfast-relish.

APPLE PANCAKES.—Ingredients: Apples, twelve; eggs, twenty; cream, one quart; cinnamon, two drachms; nutmeg, two drachms; ginger, two drachms; crushed lump sugar, six drachms. Peel the apples, cut in round slices and fry in butter. Beat up the eggs in the cream, add the spice and sugar and pour over the apples.

FRENCH VEGETABLE SOUP.—To a leg of lamb of moderate size take four quarts of water. Of carrots, potatoes, onions, tomatoes, cabbage and turnips, take a tea cup each, chopped fine; salt and pepper to taste. Let the lamb be boiled in this water. Let it cool; skim off all fat that rises to the top. The next day boil again, adding the chopped vegetables. Let it boil three hours the second day.

CRANBERRY ROLL.—One quart flour, one heaped teaspoon baking powder, sifted together; mix into a soft dough with sweet milk; roll thin and spread over it a pint of cranberries, and a cup and a half of sugar; roll it over and over into a roll, and put loosely into a pudding bag, and put in the steamer over a kettle of boiling water, and steam one hour. Serve with a rich sweet sauce.—**AARON'S WIFE, in Prairie Farmer.**