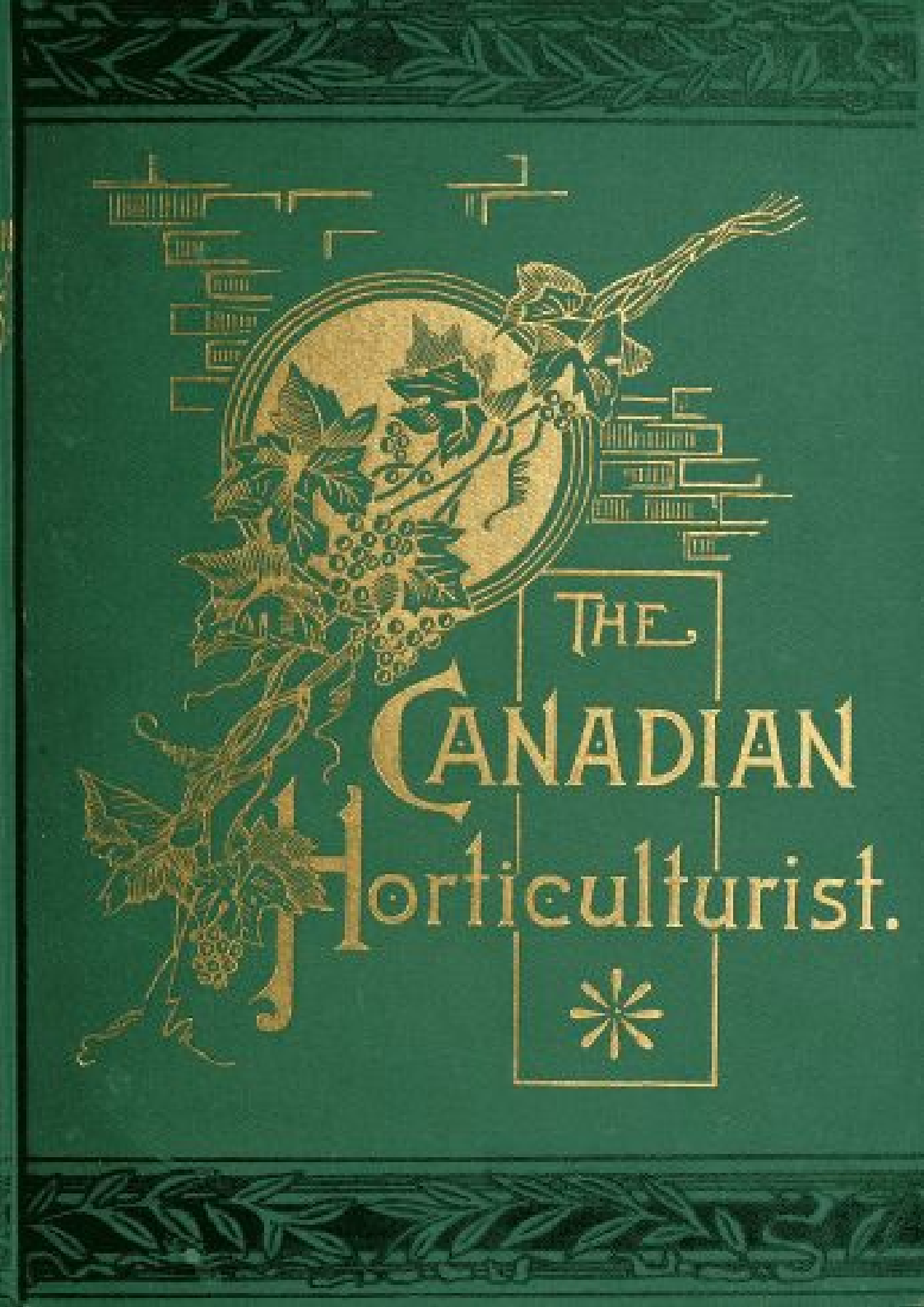
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Vol. 8, No. 7

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WHITE FRINGE.

THE

Canadian Horticulturist.

VOL. VIII.] JULY, 1885. [No. 7.

THE CHIONANTHUS, WHITE FRINGE.

Our more practical German cultivators have given this beautiful shrub the very expressive and somewhat poetical name of *Schneeflocken baum*. Nothing could be more appropriate, and we suggest that this German name translated into *our* mother tongue be henceforth adopted as the common name, and that we call it the Snowflake Tree. The name given to it by botanists is much the same, being composed of two Greek words, Ζιον, snow, and ανθοζ, flower, because of the snowy lightness and whiteness of its singular flowers.

The general appearance of the leaves and flowers is very well represented in our colored plate. The leaves are large, glossy, and of a dark green, contrasting finely with the light, airy, snow-white flowers, which are distributed among them in drooping racemes. It is perfectly hardy in the County of Lincoln, and judging from its behaviour there should be capable of enduring the climate much further north. It would seem that it has not been very frequently planted in Ontario, as it is seldom met with among the collections of shrubs on our lawns or public grounds. So beautiful and interesting a tree deserves more general trial, and we have obtained this colored illustration for the purpose of calling the attention of Canadian planters to this superb little lawn tree.

It has been the fashion to plant foreign trees and shrubs to the neglect of those that are American, but the lover of the beautiful will readily avail himself of those plants that are native to the soil, and in so doing, provide a collection more rare and more ornamental than if composed only of exotics. This shrub is a native of North America, and is found growing wild in Pennsylvania and southward. It belongs to the Olive family, and hence bears relationship to shrubs and trees with which we have all been familiar from childhood. The well-known Lilac and Privet are members of the same tribe, while our White, Black and Green Ash, belong to another tribe of the same family. European cultivators have availed themselves of this consanguinity to propagate our shrub by grafting it upon their common Ash, *Fraxinus excelsior*. Besides our American species, there is another native to the East Indies, which can only be grown in a hot house, requiring what is known among gardeners as stove heat. And yet another was introduced into England from China, in 1852. But we have no occasion to go after these foreign species. The one native to this Continent is best suited to our circumstances, and in point of beauty is all that can be desired.

If any of our readers have planted this shrub, we wish they would communicate their experience with it for the information of others, especially with reference to its hardiness and the

soil in which they find it to thrive.

EASY LESSONS IN BOTANY.

By H. B. SPOTTON, BARRIE.

LESSON III.

Our examination of the Buttercup blossom has made us acquainted with the various parts of the flower. In this particular blossom these parts are all separately attached to the receptacle, and the receptacle is simply the swollen top of the stem of the plant. Lower down on the stem we found *leaves* produced at intervals, and it is time now to state that all the pieces of which the flowers is made up *are leaves also*. This view of the matter has probably not occurred to you, because the flowers are so strikingly different in appearance from the rest of the plant. But let us see. First, there is the fact that the flowers are produced on the stem and its offshoots; this alone is suggestive of the notion that their parts must be leaves of some kind. Then if we examine a sepal we find it to be flat and thin and usually green, just like a common leaf, but of course much smaller. The petals are also like small leaves, but here we miss the green color; corollas are almost invariably of some color other than green, and we shall presently try to discover why this is so. You will be disposed to admit then, on reflection, that at any rate sepals and petals are only modified forms of common leaves. But what shall we say of stamens? Can it be possible that these organs have anything of the leaf-nature about them? It may seem at first a hopeless task to try to trace any resemblance. But if you take any common leaf—say that of a lilac—you will see that the blade is equally divided by a rib which extends from the end of the petiole to the tip of the leaf. The anther of the stamen is divided in the same way by the connective; and the filament very fairly represents the petiole. The greatest difference is in the body of the leaf, as there is apparently nothing in an ordinary leaf-blade like the grains of pollen which are produced in the anther. As to the carpels, if you take the blade of a lilac leaf and double it lengthwise, you will have a very fair representation, on a large scale, of the carpel of the Buttercup, and it is exactly by such a folding process that the botanist conceives the carpel to have been formed. Let us, then, understand that all the parts of the flower are merely modified leaves. The crowding together of these parts in whorls is due to the same cause as the crowding of the leaves of the Dandelion, namely, the suppression of the growth of the stem at the place where the leaves are produced. The ordinary green leaves of the plant we shall call *foliage leaves*; those of the flower will be known as *floral leaves*.

Having settled the question of the true nature of the floral whorls, let us now examine a flower of Hepatica. Here we have at the outside a whorl of three little green leaves, which you will be pretty certain to regard as a calyx. But if you carefully turn back these leaves you will discover that *they do not belong to the flower at all*, being separated from the colored whorl next within by a short bit of stem. They are, in fact, three small foliage leaves. To such small leaves, which are very common on the peduncles of flower-clusters, the name *bract* is given, and if the bracts form a whorl of three or more, the whole is generally called an *involucre*. There is, then, no green calyx in Hepatica. But we have the whorl of colored leaves corresponding to the petals of the Buttercup. The question then arises—shall we call these colored leaves sepals or petals? As they are the *outer* leaves of the flowers, that would be a reason for calling them sepals, but they are certainly more like ordinary petals than sepals. However, botanists agree to be guided by the first consideration, and call them sepals, and they agree to look upon the Hepatica and all

such flowers as have only one of the two outer whorls as being *without a corolla*. This being understood there is no further trouble in the examination of this flower. The colored calyx will be found to be polysepalous; the stamens are numerous and separate (polyandrous); the carpels are numerous and separate, the pistil being therefore apocarpous; and each carpel contains one ovule, just as in Buttercup. Note, also, that in this flower, as in the Buttercup, all the parts are attached directly to the receptacle.

The Wallflower blossom may next be examined. Here we have no difficulty in finding the calyx, but there are only four sepals. The corolla consists of four petals. The stamens are six in number, and you will readily discover that two of them are different in length from the other four. The pistil is all in one piece, but if you select an enlarged one from a withered flower, and cut it across with a sharp knife, you will see that it consists of *two cells*. We have, in fact, in this pistil two carpels grown together, a state of things quite unlike what we found in Buttercup and Hepatica, where the carpels were all separate. We shall often find instances of this growing together, or *cohesion*, as it is called, of the parts of floral whorls, sometimes sepals cohering, sometimes petals, and sometimes stamens. We shall even find the parts of one whorl growing upon another whorl, such as the petals growing on the calyx, or the stamens growing on the corolla. To distinguish this union of different whorls from the union of parts of the same whorl, we shall speak of the former as *adhesion*, reserving the term *cohesion* exclusively for the latter.

You will not fail to notice that the two cells of the ovary in Wallflower contain a considerable number of seeds.

It will be a good plan for you, after studying the Wallflower blossom, to compare its structure with that of Water-Cress, or Shepherd's Purse, or the common yellow Mustard of the fields. In all these cases you will find so evident a similarity in the form of the flower that you will be prepared to hear that they all belong to the same natural group of plants.

We shall now examine the flower of Geranium, reserving the Dandelion for another occasion. The calyx is of five sepals, as in Buttercup. The corolla, also, is of five separate petals, these being alternate with the sepals. The stamens have peculiarities not observed in the other specimens. First notice that the filaments cohere to form a tube at the base. They are in consequence said to be *monadelphous*, that is, *of one brotherhood*. Then you will observe that there are ten of these filaments, every other one being shorter, so that we have two sets of five each. It is not likely that you will find anthers on all ten of the stamens; perhaps only on six or seven. The pistil is made up of five united carpels (*syncarpous*), and there are clearly five stigmas. These unite below into a slender column above the ovary; this column is known as the *style*.

If you have attentively followed the descriptions of flowers in this and the preceding lessons, you will have gained some useful information as to the parts of which flowers are composed, and also some little notion of the *sorts of variation* which flowers present in their structure. At present this is all that can be expected from the beginner.

TO OUR CORRESPONDENTS.

It has been found necessary, in order to ensure the prompt mailing of the *Canadian Horticulturist* so that it shall reach our readers by the first day of the month, to have the copy in the printers' hands not later than the first day of the previous month. Please, therefore, to bear this in mind, and mail your communications in season to reach me by the first day of the month preceding the month of publication of the number in which you wish to have your paper appear.

FORESTRY IN QUEBEC.

We are indebted to Mr. C. Gibb, of Abbotsford, Que.—the man to whom that Province owes a debt of gratitude for his indefatigable labors in the cause of fruit-growing in that climate—for a report of the recent meeting of the Forestry Association of Quebec. It was well attended by gentlemen of influence and members of Government, among these, the Honorable the Commissioner of Crown Lands, who took a lively interest in the proceedings, and was evidently fully alive to the importance of husbanding the resources of the Province which lie in its forests, both by conserving what yet remains and by re-foresting denuded portions not suited to agricultural purposes.

This matter of forest management is one of great importance to both Ontario and Quebec. Properly managed, our forests would be a source of perpetual revenue. The ripe timber could be cut and sold while the remainder is coming to maturity, and that in such a way that there would be a yearly crop. There should be in each Province an Assistant-Commissioner of Crown Lands, thoroughly informed on all matters pertaining to forestry, whose tenure of office should be according to the ability displayed in managing the forests in such a way as to make them a continual source of revenue. Under our system of government, the Honorable the Commissioner may be wholly ignorant of forestry matters, and yet a valuable member of the government. Besides this, the Commissioner is frequently changed, hence the methods of caring for our forests lack the element of stability. It is well that public attention is being aroused to this very important matter.

THE CANADIAN BEE JOURNAL.

The first number of this new venture is before us. It is the only journal devoted to this subject published in Canada. Published weekly by D. A. Jones & Co., Beeton, Ont., at $1.00 a year. A sample copy will be forwarded by the publishers to any who may desire to receive one. We commend it to the attention of those of our readers who are interested in bee culture.

THE KIEFFER PEAR.—Geo. W. Campbell says he finds the Kieffer as badly injured by the cold of winter and as liable to blight as any pear he has. He thinks it about as tender as the peach, and not so hardy as the Bartlett pear. We have found it hardy, but it blighted the first year after making a good growth. After successive years of fruiting we do not find it good enough to make it worth raising as far north as 42°, but tolerably good and handsome specimens have grown as far south as Philadelphia.—*Country Gentleman.*

QUESTION DRAWER.

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1. What can I do for bark lice on my trees; can you give me some remedy? I have tried whitewash, but I don't think it has any effect.

2. How can I protect my gooseberry and currant-bushes from being destroyed with snow, for they are badly broken down this spring?

3. Is salt good to put around the trees; if so how much to a tree, that is around the trees?

4. What can we do in the case of humbug tree agents travelling about the country imposing on people, selling trees at an enormous cost for their extra qualities, yet I will venture to say that there is not one in ten that has been planted in this neighbourhood that has lived, which I know had the very best of care?

Yours very truly,

A. C. McDONALD.

Dunlop P. O., Huron Co., Ont.

REPLY.—1. Dissolve one pound of potash in two gallons of water. Apply with a brush or swab to the bark of the trunk and larger branches. This is sure death to the bark-louse and all insects and their eggs which are found in the crevices and under the scales of the bark.

2. Will some of our readers who have had experience in this matter please to reply to this question. We are so seldom troubled in this way in the County of Lincoln that we are unable to speak confidently of any method. It occurs to us that if the first snows were firmly trampled about the plants until a hard bed was made about them as high as the branches, the melting would be so gradual that the branches would not be torn off by the settling of the snow.

3. Salt is thought to be of benefit to plum and quince trees, but not to any other fruit trees. The quantity must be graduated to the size of the tree, from a quart to a peck scattered on the surface.

4. Not all tree agents are humbugs. The fact that the trees did not live is no evidence that the man who sold them was to blame. Many, if not all, of our most reliable Canadian nurseries have agents who take orders travelling through the country. These men can always show you letters of recent date from their employers, and if you find anything unsatisfactory write to the proprietor of the nursery the agent claims to represent, and you will find that every reasonable complaint will receive prompt attention.

GOLDSMITH BEETLE.

I send to you at same time as this note two beetles I dug up last week. Will you please name them. Say whether injurious or not, and if scarce, in *Horticulturist* next month, if you think it is worth the space to do so.

Yours respectfully,

FRANK JONES.

Hamilton, April 27th, 1885.

REPLY BY WM. SAUNDERS.—The beetles referred to by our correspondent are specimens of the goldsmith beetle (*Cotalpa lanigera*), a very handsome insect, nearly an inch long, with the wing-cases of a rich yellow color, while the thorax and head gleam with burnished gold of a brilliant reddish hue. They attack and devour the leaves of the pear, cherry, and other trees, just as they are expanding, and thus materially retard the growth which would otherwise take place. In the larval state they closely resemble the common “white grub,” and are equally injurious, feeding on the tender succulent roots of plants, especially strawberries. This insect, however, is seldom met with in any great abundance, and on this account is not generally known as injurious.

BARK LICE.

Mr. W. A. Webster, of Stoney Creek, sends us some specimens of bark lice attached to a thin slice of bark, and asks, “What are they?” “Do they injure the trees?” “What remedy is best for them?”

They are what is known as the oyster-shell bark-louse (*Mytilaspis pomorum*), which is, unfortunately, too common on apple trees throughout Ontario. Under each of these scales is a mass of eggs varying in number from twenty to a hundred, or more, which hatch late in May or early in June, producing small lice about one hundredth of an inch long, which are at first very active, running all over the tender twigs of the tree, seeking suitable locations to which to attach themselves. Having made their selection they insert their tiny sharp beaks and remain motionless, subsisting upon the sap of the tree. They gradually lose their limbs, and secrete over themselves a scaly covering, which is enlarged with the growth of the insect, until it presents the mature form as in the samples sent.

These lice are very injurious. They occur in great numbers, and seriously weaken, and sometimes destroy the trees invaded.

REMEDIES.—During the winter or early in spring the scales may be scraped off, or removed with a stiff scrubbing brush, dipped in a strong solution of soap. The young lice may be destroyed by brushing the twigs with a strong solution of soap in water, made about the consistence of thin paint.

ICHNEUMON COCOONS.

Another correspondent sends a cluster of white egg-shaped bodies, each about an eighth of an inch long, attached to a piece of bark, and enquires, "What are these eggs?" These are not eggs, but small cocoons of a species of Ichneumon fly, a class of insects including some of the fruit growers best friends. Each of these small cocoons produces a minute, but very active fly, which deposits its eggs in the body of some caterpillar, where the young grubs hatched from them feed upon the body of the victim selected and destroy it. Do not injure or kill any of this useful class of insects.

MR. EDITOR,—Please set us right in our doubts:—

First—Is it not the best and surest way, in the cultivation of the strawberry, to root out all that are not showing bloom in the first spring of planting, for fear they should be barren plants, and their runners be in time mixed with those that are fertile or fruitful?

Secondly—It is said the Cap Raspberries are only propagated from the tips. I think they can be propagated, like the vine, by laying the cane in a shallow drill, and as they shoot up, to fill in the drill with earth, and thereby get a quantity in a short time. Am I correct in this?

Thirdly—Give your opinion as to the following. I have my doubts in trying the receipt because of the tar. The *Globe* has the following from the *Rural World*; it says:—"A writer last spring stated that a mixture of tar and soft soap and sulphur would keep the borer out of apple and peach trees. I have used it for thirty years, and it has never failed if done in April or May. It will also keep rabbits and mice from gnawing the bark. Paint them with a swab or brush; do it the first warm day; do not wait. *Receipt*—Take two-thirds soft soap and one-third pine tree tar; put in water enough to make it like thick paint; add one pound flour of sulphur to the gallon; boil it all together; when still warm, use it." Before I apply such, I ask your opinion. I was doubtful as to whether the tar would not do more harm than good.

H.

REPLY.—1. Will some of our strawberry growers please state their experience on this point?

2. We have never tried to propagate them in this way. Will you please try it and tell us whether you succeed?

3. We think pine-tree tar would do no harm if pure, but so much of the tar in market is adulterated with injurious substances that we should fear to use them on trees?

GRAPE MILDEW.—Prof. G. C. Caldwell, of Cornell University, says that where the stakes to which vines are tied are soaked in a solution of sulphate of copper, the vines are not attacked by mildew. The soaked stakes exert an influence for a distance of two and a half feet on either side. It is believed that a single soaking will suffice for three or more years.

WHAT THE PEOPLE SAY.

HORTICULTURAL NOTES OF A SOUTHERN TRIP.

BY WILLIAM SAUNDERS, LONDON.

(*Continued from page 127.*)

In the display of tropical fruits at the New Orleans Exposition Florida took the lead, California ranking next. The exhibit of oranges was perplexing in its variety, and to a novice it seemed difficult to understand how so many varieties so nearly alike could be distinguished. The Mandarin and Tangerine oranges are easily separated from the ordinary sorts by their small size and characteristic appearance, and the Maltese Blood by the red staining on the inside, but the Dummitt, Hart's Seedling, Mediterranean Sweet, St. Michael's, and a number of other named sorts so closely resemble each other that to the uninitiated they seem identical. In addition to the oranges, which formed the bulk of the display, there were a number of varieties of lemon; also shaddocks, guavas, citrons, grape fruit, limes, Japanese persimmons, loquats or Japanese plums, sapodillas, and pomegranates.

While in New Orleans the opportunity was afforded to visit the greenhouses and grounds of Prof. Richardson, where, under the guidance of his enthusiastic gardener, Mr. Lester, we were shown some rare and beautiful plants. Among others in bloom there were quite a number of orchids. Three specimens of *cattleya triane* attracted special attention, with their richly-hued flowers, measuring nearly five inches across. The houses were well kept. On the grounds were a number of beautiful palms, pittosporums, and other evergreens. A splendid plant of the Maréchal Niel Rose was trained to cover a shed; it had grown very vigorously, and was just pushing out its buds—full of promise for bloom. It seemed much at home, and perfectly hardy.

Many of the gardens in the better portions of the city were very pretty. Occasionally beautiful dwarf growing magnolias could be seen in bloom, with their large and handsome flowers of various tints. These are of foreign introduction; the native species bloom later. Scarlet honeysuckles, violets, and laurustinus were also in bloom. *Rhyncospermum jasminoides*, which in Canada we grow with much satisfaction in pots in greenhouse, here flourishes as a common climber, and grows with as much luxuriance as our five-leaved ivy does with us.

Leaving New Orleans, a charming day was spent in Mobile. Accompanied by Dr. Chas. Mohr, the well-known botanist, we took a delightful afternoon drive along the shores of the bay, admiring the scenery, inhaling the balmy air from the Gulf, and gathering interesting plants. At Magnolia Grove there were a large number of trees of magnolia grandiflora, including the finest specimens seen anywhere in the South. A leading industry here is the growing of cabbages, a

large quantity being raised for the Northern markets. The seed is sown in August, and the plants continue to grow all through the winter (so-called), and mature at different periods from January onward.

Twenty hours of railway ride brought us to Jacksonville, Florida. Here the season was much further advanced; the roses were in full bloom, and were much admired. Some of the gardens were very beautiful, and included quite a number of varieties of flowers, while many others were less cared for. Where so much that is beautiful lies within reach of every one, it seems strange that more is not attempted. A very pleasant visit was paid to the beautiful home of Mrs. Mitchell, across the river; also to that of Mr. Thomas Bassnett, where we were most hospitably received, and at both places saw a large number of orange and lemon trees well laden with their golden fruit. Proceeding up the river, we found flowers more extensively cultivated in St. Augustine, especially roses, which are in such demand by the guests at the hotels that they are gathered and sold as fast as the buds form. This branch of horticulture must be quite remunerative here, as good prices are obtained. It was now the middle of March; the weather was warm and most delightfully pleasant. It seemed difficult to realize that the friends at home were experiencing heavy snow-storms and a temperature much below zero.

Proceeding south, brief visits were paid to Palatka, Silver Springs, Ocala, Leesburgh, Eustis, Enterprise, Orlando, Kissimmee, and Tampa, the extremity of railway travel, passing through all the most productive orange sections, where in many places orange groves are so plentiful as to be a drug in the market. The country, however, is being rapidly settled. Along the line of the South Florida Railway from Sanford to Tampa, a distance of 115 miles, there are quite a number of thriving places. The railway was opened but a year ago, but within that time towns with from 300 to 500 inhabitants have sprung up at different points along the line. At Tampa the sun was uncomfortably hot during the middle of the day, but the weather cool and pleasant at other times. Here we enjoyed ripe strawberries, gathered fresh from the gardens adjoining. The variety in cultivation resembled Wilson in form, but was sweeter. It was said to be a seedling of Wilson which originated somewhere in the South, and endures the dry, hot weather of summer better than our Northern sorts. What surprised me most, when examining these strawberry beds, was the entire absence of runners. The plants were of fair size and bushy, and had been fruiting steadily since the beginning of January, but I was unable to find a single runner anywhere. On enquiry, I was told that strawberry plants do not put out runners in that climate until May or June, that the fruiting season lasts about five months, beginning with January, and that towards the close of this period the plants produce runners in great abundance.

On the return journey, short visits were paid to Savannah and Charleston, where we greatly admired the magnificent camelias and azaleas blooming out of doors. Before reaching Washington snow was encountered again, with unpleasantly cold winds; and we found winter still reigning on our return home.

HOME MADE WINES.

As many of your readers may not know how easily they can procure a cheap and wholesome wine, with a good body—nay, in spite of the Scott Act, home made wines like these will harm no one—the following will make a good wine from either black currants or bilberries, or as some call them, huckleberries: To every gallon of fruit put 1 gallon water (soft water is best); let it stand in a tub a week or nine days, stirring it daily, and keep covered with a cloth; then strain it through a cloth, and to every gallon of liquor thus procured, add 3 lbs. sugar; mix well, and fill

up your cask. No boiling is here required. If you are making wine from the bilberries or hearts, as some call them in the old country, add a few cloves; but not to the currants—it is said black currants have medical properties.

The huckleberry or bilberry (*Vaccinum myrtillus*) grows plentifully in Surrey, in England, and never sells for less then three half-crowns per bushel, wholesale; they are gathered by the poor country folks on the waste lands for the markets.

T. A. H.

Medora, Muskoka.

THE ROSE AND THE GERANIUM.

We were greatly delighted with the valuable paper, in the April number, from the pen of Mr. Mitchell, of Innerkip, on "Certain Roses."

Your very flowery correspondent had almost led us away from our honest convictions long entertained, and simply by the bare force of his masterly description. With all due and becoming respect for the Rose and its proud position in our horticulture, we must beg leave to conscientiously demur from the common belief of its pre-eminence among popular favorite flowers for the masses. We may say further that we have scarcely ever known but one or two successful Rose growers in our limited observation. In the winter of 1882-3, while on a temporary visit to the city of Rochester, N.Y., we were kindly introduced to the magnificent Rose-houses of Ellwanger & Barry, and also those of the late lamented H. E. Hooker, Esq. In these grand houses and under these fine conditions we saw the rose in all its grandeur, beauty and variety in successful cultivation, and on the largest scale. Such a profusion of attractive and beautiful Rose plants in all stages of growth, we had never seen before, and were astonished beyond measure. Could we have been possibly guilty of so gormandizing a covetousness in one individual, we could have fain desired the possession of the whole lot in our collection. But then the conditions, ah! there's the point! Large and thoroughly adapted houses, thoroughly equipped with benches and modern appendages, and the conditions of heat and moisture, gaged exactly to suit the Rose, and the whole under the direction of the efficient life experience of such a man as Mr. Hooker, or the more noted Mr. Ellwanger, both practical men, this powerful force being brought to bear at once on the result, it was indeed a grand consummation in Rose production. Who among us could do this and proudly show such practical results? While much that is cheering has been done in growing of Roses by such devoted lovers of the plant as our friend Mitchell shows himself to be; we are happy to know that there is a popular plant that comes nearer the popular grasp, and may well be denominated the poor man's flower, or everybody's flower. This proud pre-eminence we would humbly claim for the

GERANIUM.

We humbly consider that the world is more indebted to this humbler, unpretending and unroyal plant for its tastes and refinements and embellishment than to any other one family in the long list of modern catalogues. Where there is one successful Rose grower, those of the Geranium can be numbered by hundreds. Almost every family in the land can daily look upon at least one to a half dozen beautiful Geranium plants on their humble shelf, or their more cramped and scanty window sill. They watch the beautiful leaves expand in the light, and the tender bud clusters of promise, and the opening mass of brilliants equal to any rose with the greatest delight; and *mother* is the gardener. Only think, and try to take in, if you can, the aggregate educating

influence of this one plant on the masses of Christendom? Is it not past our feeble efforts at calculation? Where is the Rose in its every-day influence beside the Geranium? Our powers of description, so unlike those of your correspondent, fail us to do anything like justice to any one member of this interesting family of popular plants. We can only attempt an enumeration of a few of the most desirable in the several classes. And here it is well for us to remember that, as in the case of Roses, so in the case of Geraniums, we are ever indebted to the practical, skilled growers of England and the Continent for the newest and best strains. In Roses there is annually imported the latest and newest strains and variations of such noted growers as the Bennetts, W. Paul & Son, Turner and others. In Geraniums, the latest and most admirable strains (and they are to be wondered at) come from the houses of H. Cannell & Sons, and others. These importations are constantly adding to our floral treasures. Some of the best of the single flowering Geraniums are: Jealousy, Dr. Denny, Jennie Dodds, Col. Holden, Samuel Plimsol, Mrs. Whiteley, Bishop Simpson, and several others newly brought out and beautiful specimens worthy of our admiration.

The Double Geraniums:—Bataclan, Dr. Phinney, Bishop Wood, Henry Cannell, James Vick, Queen Victoria, Mrs. Charles Pease, Mrs. Hay, &c.

Although the flowers of the Geranium are not sweetly scented like the Rose, yet it has a rich and varied inheritance of sweet scent stored in its beautiful leaves. The most noted scents are Apple, Penny Royal, Lemon, Peppermint, Almond, Rose, Balm, Nutmeg, Citron, and several others distinctly marked.

In Foliage Geraniums, the fine Bronze varieties are perfectly handsome. Also the Cloth of Gold, and the more wonderful Happy Thought. Then the Silver Bicolors, as the Mount of Snow, and the beautiful Silver Queen, and Cannell's Freak of Nature, &c.

The Golden and Silver Tricolors are perhaps the most wonderful of all, and always command our admiration. The Ivy-Leaved section is also truly remarkable. But I feel I have outstripped my limits and shall succeed only in wearying you.

Yours truly,

B. GOTT.

Arkona Nurseries, April 10, 1885.

PETER PRUNING KNIFE PRUNED.

MR. EDITOR,—In reply to part of an article published in the May number of the *Horticulturist*, headed: "Mistakes of Fruit Growers, by Peter Pruning Knife," namely, mistake No. 3, I wish to say I am agent for a nursery, and in all the sales of fruit trees that I have made I always recommend trees that are likely to stand the test of our severe winters; in fact trees that I have proof have grown in the coldest localities of the United States. Very true I have a beautiful colored plate, at the same time I do not recommend the names on the plate without I am certain they will stand the cold climate or the soil. For instance, hard-pan soils will not grow fruit trees; loamy soil will if it is not too light; in fact trees will grow in very light soil if they are well watched. I have fruit trees growing in limestone gravel and doing well. Why? Because I feed and water them when required. Why cannot others do the same? The fault is often with the buyer. For instance, I offer a man a list of hardy trees; the price is too high. Buyer says can't you let me have trees for less money? Agent sells a cheap tree. The result is they will not overcome the cold winters without injury more or less. Who is to blame, the agent or the buyer? Some purchasers will have a first-class article, cost what it will, because they want a tree that will carry itself

through our trying winters without risk.

The article I refer to in the *Horticulturist* says one-half or more of the trees that have been thus recommended and planted in the Northern parts of this country have proved worse than useless. Why are they useless? Because it is the purchaser's fault who will not be advised and pay for a first-class article; the consequence is the trees fail and the agent and nursery have to suffer.

The article I have reference to has pinched my corns. The writer of Peter Pruning Knife should think before coming down on fruit tree agents. Some people do not think for one moment that it costs time and money searching and testing the different varieties adapted for the different climates.

Mr. Editor, as I am a subscriber to your valuable *Canadian Horticulturist* I hope you will give the above article space in its columns.

JAS. DOUGAL, SEN.

Barrie, May 5th, 1885.

NOTE BY THE EDITOR.—Our correspondent seems to have failed to notice that "Peter Pruning Knife" speaks of the mistake made in ordering trees from agents *about whom the buyer knows nothing*. Every buyer should satisfy himself that the person to whom he gives his order is in fact an agent of the nursery he pretends to represent. If he cannot show very recent letters from his employers he is not worthy of belief. In selecting varieties he need not be guided merely by the agent. The catalogues of our Canadian nurseries will give very full information as to the adaptation of varieties to the climate, and if he represents a Canadian nursery he will be able to inform the purchaser by showing him the catalogue.

GRAFTS AND GRAFTING.

MR. EDITOR,—The premium grafts came duly to hand of one yearling Russian, or Cossack, apple. I cannot tell whether they are true to name; if they are, and the fruit is as long as the name, we shall want a corn basket and wheelbarrow to get each one to the cellar; neither can I tell what quality they may prove to be, as I have no dictionary large enough to pronounce a word so long, or give any derivation or root to even guess at its meaning. However, as it is time to top graft, I avail myself of the privilege. I cut off close to the little root, and save one bud to make my tree, cut up my wood in pieces of three buds each, and set nine limbs in an old tree that was called Powell's Beauty, which, in due time, will prove what the quality is like. As I have had much experience in grafting, having practiced it for over forty years, I still have a strong desire to continue testing new varieties as they come along; which in this age of the world are making rapid strides. Our collections are getting large, and the most cultivated fruit grower is almost at a loss at times to determine what to plant.

I need not speak of the method of inserting grafts, as there has been so much written in books, journals, and horticulturists, that the few hints I may offer might not be of any farther service. I think the way the grafts are located in limbs has much to do with insuring a good result.

May I here say it is a law of nature that all overtopped limbs (no matter how close or high above ground) shut in from the sun, *invariably die*; and without securing the uppermost limbs of the tree to insert scions, such as have plenty of sunlight without having large and healthy limbs still over them, to rob your scions of their food, as the sap or food of the tree *rises* more vigorous and in greater supply to the *highest growth of the tree*.

Grafting one limb under another is of but little worth. My rule is not to cut a limb over two inches in diameter, keep well out, one inch to one and a half inches is the best size, the wound will sooner heal; the limb will then give with the weight of fruit, and not break off so easily. I have inserted three hundred scions in one tree, some twenty to twenty-five feet above ground, and in three years had a full top with quite a crop of fruit. In later years some of the grafted limbs had to be taken away, as I set thickly and cut away the remaining portions of old wood piecemeal, so as not to check the growth too quickly; as the after care of the scions is by far the most important to preserve branches enough to take up the flowing sap, and not undermine the constitution of your tree, but keep it healthy and vigorous. When you have inserted grafts sufficient for an entire top, the original branches will receive a tremendous impetus to grow. The grafted stock will sprout profusely and soon choke out the scions and stop their growth, too much cutting and pruning them will injure the tree, often to cut or head back branches without removing entirely, leaving the leaves on the branches, not covering up the scions. They need looking after through the months of July, August and September.

The following spring cut back to eight or ten inches, and at intervals through the summer arrange your limbs for bearing by not allowing them to grow too thickly together, and removing part of old wood where not needed; second year, head back again, and remove all old remaining wood from the tree.

As to the varieties for top grafting, I would not take a slow growing variety; the stronger the better, such as King of Tompkins County, Golden Russet, Northern Spy, Wealthy, Red Astrachan, St. Lawrence, Fallawater, Colvert, and Twenty-Ounce apples, etc. The Baldwin, Greening, E. Spitzenburg, Hubbardtson's Nonsuch, Gravenstein; these varieties are generally injured when as cold a winter as the past one follows after grafting, and are often lost. You can sometimes save the tree by letting the stock sprout out again, and regraft another year. There is still another class of hardy fruit, but very difficult to work successfully, such as Pewaukee, Tetofsky, Mann, Grime's Golden, Fill Basket, and Beauty of Kent; these do not unite well with the stock of older trees, and have proved worthless. Location has much to do with this, as in some favored sections these same varieties do fairly, and are valued somewhat, but to a very large extent where it is as cold as with me persons should use the hardy and well tried sorts. I think our Society should be very careful indeed, and not send out any fruits that are not worthy of cultivation (as it is generally taken that if the Society send out fruit, it must be of the very best), and which may bring disappointment; for instance, the Mann apple: I do not know on whose recommendation, or where its particular merit lies, or to what particular portion of the globe it best adapts itself. With me it has proved itself barren and worthless. I set seventy-five trees and top-grafted twenty more; it does not succeed well as a top-grafted tree, being too slow in growth, and puny. Some of my top-grafted trees were large, fifteen feet across the limbs, and as high; and, to speak safely, I have not grown one dozen specimens in the past five years, all told, of this variety. The Duchess, which is everywhere esteemed for its great productiveness and fine appearance, and good cooking quality, works somewhat similar, but *worse*, for it does not unite and grow readily as a top graft; appearing foreign in its nature, similar to the red and yellow Siberian crabs. I find it almost impossible to graft this variety to make a complete success of it; the stock suckers so badly or sprouts out, and the grafts grow so slowly, they take up so small a portion of the sap, and to remove the sprouts continually appears to weaken the stock, and the whole finally becomes unhealthy, and dies away. There is no trouble to have the grafts live the first and second year: to cut too closely spoils your tree, and to leave original branches to consume the sap, robs the grafts that they soon die away. I have spoiled and cut down twenty-five healthy trees in trying to work the Duchess upon them, and have had very small success.

The only successful way is to whip-graft, or bud in small stock at the ground, or a little below, and let both stock and graft advance together; this method has worked nicely. They are

subject then to throw up very many sprouts from the stock and become like a large brush heap. To remedy this (if pasture is good), sheep can run among the trees and eat off all leaves as they form; for they are very fond of apple leaves, using them in preference to the clover. Have used the sheep for years, without losing a tree by having the bark gnawed off. They and pigs run together admirably. Have made a practice for some time of breaking up the orchards, and seeding to oats and clover. As soon as the oats are high enough—say ten inches—turn the sheep into them, and feed off. Next summer the clover will give the feed, then break and seed as before; but take no crop from the ground. The ground is kept in good condition: always soft and mellow.

Grapes and red raspberries have come out very well after so cold a winter. The Philadelphia and Cuthbert are the best, while several other varieties are partially injured, but not so bad as to destroy their crop; while the black caps nearly all froze to the snow, as well as the Long, the Taylor, and the Snider blackberries; while the Vick and Wilson strawberries, mulched with leaves, with three to five feet of snow over them, are destroyed altogether, apparently smothered and heated.

I am, yours truly,

J. P. WILLIAMS.

Bloomfield, May 25th, 1885.

BLACKBERRIES—FOR THIS SECTION OF ONTARIO.

I have only found one blackberry that will pay to grow for market, that is the Snyder.

Wilson's Early, Kittatinny, Early Harvest, and Taylor's Prolific are all too tender.

Many catalogues give Taylor's Prolific the credit of being as hardy as the Snyder, but with me it is not as hardy as Kittatinny, I have had it growing for five years, and have never had a good crop of fruit from it yet.

Early Harvest was killed down to the ground last spring, and on examination I find that it is now killed down below the snow line.

Stone's Hardy has killed back a little more than Snyder, but it is yet too early to form anything like a true estimate of amount of injury done by the past winter, which has been the most severe of any within my recollection.

The ground was well covered with quite a depth of snow all winter, which has protected most all small fruits.

Plants will stand several degrees more cold when the earth is covered with even a light coating of snow, as the reflection of the sun's rays does not thaw out the plants so quickly as when the earth is bare.

Early Cluster has not had much of a test yet in Canada, but I think it quite promising.

Blackberries should have all cultivation discontinued in July, to give the plants time to fully ripen their wood.

They should be planted on high clay loam to give best results, and kept well pinched back. Yours, etc.,

W. W. HILBORN.

Arkona, April 9th.

REPORT ON FRUIT AT THE CENTRAL EXHIBITION, AT PORT HOPE,

OCT. 7TH AND 8TH, 1884.

On arriving at the grounds, I found R. Dickson, Esq., Secretary of the Hope Society, and J. Foote, Esq., Secretary of the East Durham County Agricultural Society, who at once very kindly gave the necessary instructions for a careful examination of the fruit.

The exhibit of fruit was not as large or as good in quality as I had hope of finding in that noted fruit-growing locality.

I subjoin a list of fruits as found on the tables, together with such notes on the various exhibits as I then thought pertinent.

APPLES.

Fall Pippins—8 exhibits, six different kinds at least competing for this prize.

Northern Spy—8 exhibits. Most of them were of first quality.

R. I. Greening—8 exhibits. All very good samples, with one exception. The exception was not a R. I. Greening.

Russets (no variety specified)—4 exhibits. All very good. One lot was of unusual excellence, and ticketed "Extra. Recommended."

E. Spitzenburg—3 exhibits. The first prize lot was a fine sample. Those obtaining second prize were spotted.

Snow—6 exhibits. All first-class samples and well judged.

Baldwin—6 exhibits. All good samples but the one getting second prize, which was not Baldwin.

St. Lawrence—3 exhibits. All very good. The first prize lot was unusually large.

Any Other Variety—12 exhibits, comprising some eight or nine varieties. All good samples.

Variety of Fall Apples—First prize awarded to an exhibit having ten varieties. This prize was well earned, as they were all excellent specimens, and the different varieties in every case correctly named.

Variety of Winter Apples—First prize to a lot of 18 varieties, all good specimens, but none named; second prize, to lot having 19 varieties, all named, but several of them incorrectly: notably the varieties named Lady Apple and Rox. Russet.

PEARS.

The exhibit of pears was poor. There were a few fair specimens, but most of them were inferior. The first prize for Early Pears had been very justly awarded to a plate of magnificently grown Souvenir du Congress.

GRAPES.

The show of grapes was the poorest I have seen at any Fair for some years. There were but two exhibits, and the first prize lot consisted of 1 bunch each of Hartford Prolific (very poorly grown) and Brighton, a small unripe cluster.

After concluding my notes on the fruit exhibit, I was requested to act as sole judge on flowers. This I found rather an easy task, as there was only about one or two exhibits in each class. The whole exhibition of flowers had been well arranged and appeared to the best advantage. Two or three large lots of greenhouse plants assisted very materially to give character to the whole exhibit. The Board very kindly ordered the re-payment of my railroad fare, the

amount of which will be found to the credit of the Association in my account.

In conclusion, I beg to suggest to those having control of the exhibition at Port Hope, the advisability of adopting some means in future whereby a larger number of people in that County may be induced to bring out their fruits and flowers for competition. If this were done to any reasonable extent, the East Durham County Agricultural Society, with the assistance, such as they now have from the Hope Society, and from the town of Port Hope, could make such an exhibition of fruit and flowers as might not be equalled but by few places in Ontario.

Respectfully submitted,

THOS. BEALL.

Lindsay, Nov. 1, 1884.

PEGGING DOWN ROSE BUSHES.

When dwarf bushes form growths in autumn, from five to eight feet in length, it seems a pity to cut them all off at pruning time in spring, and where there are many plants grown we would strongly advise that a number of these growths be left uncut, and peg them down. They will not, if very strong, bend down to touch the ground, as some may think of trying to root them; but this is not the object, the principle being to bend them over and peg them about a foot or so from the ground, allowing them to remain full length, and every bud along the stem will soon send up a shoot, and these pegged down stems will bloom very profusely. For profuse blooming no plan will equal this, and it is rather surprising that pegging is not oftener practiced. Any one wishing to possess a mass of Roses, growing and blooming in semi-wild confusion, could not do better than peg down the shoots over some beds.—*Vick's Magazine.*

HORTICULTURAL CONCLUSIONS.

PROF J. L. BUDD.

Some of the conclusions reached by the experts at the recent meetings of the Mississippi Valley Horticultural Society at New Orleans, and of the Iowa State Horticultural Society at Atlantic, are worthy of brief notice.

WILD BLACK CHERRY.—Slowly but surely this tree is coming to the front as one of the most valuable for varied soils in most parts of the Northern and Western States. Very many reported it easy to propagate from pits, very rapid in growth, and best for many economic uses of timber. Dozens of examples have been given where on high, dry, prairie soils it has made more growth in 15 years than Soft Maple.

YELLOW TRANSPARENT APPLE.—From many States of the Union come good words for this earliest of summer apples. Even experts from New York, Connecticut, New Jersey and Ohio, agreed that it was earlier than Early Harvest, quite as large and handsome and fully equal in quality. In addition, it comes early into bearing, and seems as regular in its crops as the Duchess. In the Mississippi Valley it was reported favorably, in Minnesota and in Texas.

CHARLOTTENTHALER belongs to the same Russian family as the Yellow Transparent. It is now added to the recommended list of the Iowa Society, and has received favorable reports from

nearly all parts of Mississippi Valley. It is larger in size than the Transparent; but of the same shape, color, and quality. The tree is a better grower in the nursery and has proven as free from twig blight as the Duchess. The general belief now is that it will prove the best early apple over a large portion of the States east of the Rockies.

THE LONGFIELD APPLE has been exhibited and reported favorably upon by dozens of careful observers. It bears heavy crops when young, and during our past extreme seasons it has made a growth of eighteen inches of new wood when maturing a heavy crop of fruit. Mr. Haviland, of Fort Dodge, Iowa, reported that 42° below zero the present winter had not colored the wood of the Longfield, while that of the Duchess was much reddened.

This variety promises great things for the cold North, as above the 42nd parallel on the prairies it is a good keeper of really excellent quality. On our rich prairie soils it attains the size of Roman Stem, and colors up as prettily as the Maiden's Blush. It may be well to say that the variety which Dr. Hoskins has guessed to be Longfield is wholly different in size, color, and quality, but promises to be valuable.

WINTERAPUT.—In the exhibit of apples from Moscow at New Orleans the plates of this ancient apple attracted much attention. It is smaller than Alexander, and more regular in form. Its striping is coarse and irregular; stem long, in deep, regular, russeted cavity; eye large, open, in irregular, ridged basin.

It is a popular winter apple, of far better quality than Willard, in Central Russia. The trees have been widely distributed in the Mississippi Valley, and are proving hardy even in Northern Dakota. Top-worked trees have fruited in Northern Iowa.

AUTONOOKA.—The specimens of this apple from Moscow were not in good condition after their long voyage; but its near relative, English Reinette, was as firm and bright as when packed in October. The family attracted much attention and brought out much discussion. The point was made that this ancient family of yellow apple of the Russian steppes has planted its birthmarks on a number of our yellow apples noted for their hardiness. Autonooka, Possarts, Nalivia, Northwestern Greening, Tracey, Roman Stem, Grimes' Golden, Malinda and several promising seedlings were grouped to show the prepotent influence of one of the most noted and ancient families of the Russian apples.

RUSSIAN PEARS.—Specimens of the wood of the Russian pears which had endured 42 degrees below zero—after a thaw and rain which had left a coating of ice on the twigs—attracted much attention, and drew out considerable discussion. It is well known that the Flemish Beauty colors its new wood in our mildest Winters, and our last test Winters have destroyed the trees on our black soils, root and branch. Hence the bright color of the wood of the pears from the home of the Oldenburgh, has strengthened the belief that we will yet grow pears on our black soils profitably. The reports in regard to the perfect health of the foliage of these new comers during our past three trying summers, were also very favorable.—*Rural New-Yorker.*

THE WHITE PINE.

At a meeting of the Massachusetts Horticultural Society a paper was read by Avery P. Slade of Somerset, on Forest Tree Planting, in which he thus speaks of our white pine:—

The white pine is best adapted to the soil and climate of most of our waste lands. A soil in which the white oak flourishes will produce grass, and one that suits the chestnut will grow grain; but the white pine not only grows rapidly on land which is apparently destitute of all plant-food, but positively enriches it. It is, however, not successful near the sea coast.

Although in many instances white pines have been planted because the land would produce nothing else, and often to gratify the taste by covering a rocky hillside or sandy plain, and not with a view to profit, and though they have seldom received any culture after planting, in no instance that he had investigated had it failed to be a paying investment. Zebulon Pratt of Bridgewater purchased twenty-five acres of wornout land in North Middleborough for $25 per acre, and in the spring of 1863 had it set to white pines, at an expense of about $200. The plants were from six to eighteen inches high and were set in rows ten feet apart each way. In December, 1883, they were from twelve to sixteen inches in diameter and in a thrifty condition, and Mr. Pratt has been awarded premiums by the Plymouth County Agricultural Society for the best plantation of pines. The lot is now taxed for $800, which is based on a two-thirds valuation, and as towns are inclined to favor such experiments, it is fair to presume that this is not too high a valuation, and that the cash value of the lot is $1200. The cost of the land ($225), setting the trees ($195) and taxes for twenty years, aggregate $540, which, in twenty years at compound interest at five per cent., amount to $1431, or $231 more than its supposed value. But Mr. Pratt says he did not embark in this enterprise for profit, but to benefit the inhabitants of the village, and that he might be remembered pleasantly by those coming after him. Had he planted with a sole view to profit he would have put the trees 10 feet by 6, instead of 10 by 10, thus having 726 trees to the acre instead of 425. It is pretty generally conceded that pines 6 feet by 10 will make a growth of more value than at a greater distance apart.

At 10 feet by 10, there is a greater growth of branches, which are of little value, and less growth of body than when planted nearer. Now, if 425 trees to the acre brings the value of the lot up to $1,200, 726 trees to the acre would be worth the round sum of $2,000, which is $272 more than the whole outlay would have amounted to at six per cent. compound interest for twenty years. This plantation, Mr. Slade reported from personal observations, covers a sterile ridge of sand and gravelly loam. What surprised him most was the number and extent of the branches; beginning near the ground, each tree seemed to vie with its neighbor in throwing them out horizontally in every direction, from five to fifteen feet in length, interlocking so as to form in many places an absolutely impenetrable jungle. The conviction was irresistible that had the trees been properly trimmed from time to time (and the wood would have paid the expense), the present value would have been at least one-third more. There were said to be 10,775 trees, and could the whole growth have been thrown into the trunks, they would at a moderate estimate have been worth 25 cents each, or a total of $2,694, exclusive of the land.

J. D. G. Williams, Raynham, set a piece of pine in 1850, the value of the land being $10 per acre, and the cost of setting $5 per acre, and after twenty-five years' growth, the standing wood was sold for $150 per acre, affording a very large profit, and leaving the land in good condition to set again. Mr. Williams also set a piece of pine in 1841 on land of the same value, the cost of setting being $6 per acre. This is, perhaps, one of the earliest experiments of the kind ever made in Bristol County. The trees apparently came to maturity in 1876, having made no perceptible growth since that time. They were set in rows, from six to nine feet apart and from four to six feet in the rows. The lot has an eastern exposure, and the trees on the eastern side were evidently set for a wind break, being not more than four feet apart. They are large, with many strong angular branches, resembling in shape an oak as much as a pine, and contain as much timber as those less exposed, but it is not so valuable. In 1876 an experienced lumberman estimated this wood at seventy-five cords to the acre, two-thirds being suitable for box boards, worth at the mill, three miles distant, six dollars per cord. No arithmetic is required to show this to have been a profitable investment.

The late Richard Sampson, of Middleborough, set pine trees on a piece of land too poor to cultivate, which are now thirty-one years old, and estimated to be worth $150 per acre, and would probably bring a much higher figure. This piece contains about ten acres, and is

remarkable thrifty, and its growth during the next ten years will greatly increase its value.

The above instances of rapid growth and profitable results are not exceptional, but are selected because their history could be given more in detail than others. Plantations of pines from five to thirty years old may be found in Norton, Mansfield, Taunton, Raynham, Easton, Randolph, Middleborough and the Bridgewaters, all giving promise of remunerative results.

THE YELLOW TRANSPARENT.

Of all the early varieties of apples adapted to our high latitude the above named Russian, is, all points being considered, the most desirable of anything that I have ever fully tested. It is as hardy as the Duchess, and as thrifty; comes early into bearing; fruit medium of size, and in quality good; tree a regular bearer; the apple at its best about the middle of September; the tree being very upright in its growth will admit of its being set very close in the orchard. The great abundance of light green foliage of the tree, and its fruit of marble-like appearance makes a very fine contrast with other varieties. Grafted upon the limbs of large trees, the third season after grafting, it comes freely into bearing. I have placed scions of this variety upon crab stocks of one season's growth, and the third season from grafting, the trees have made quite a show of fruit. In localities where the Red Astrachan proves tender, the Yellow Transparent will fill the gap. The Tetofsky, though hardy, has as we all know, the bad fault of prematurely dropping its fruit. The fruit of the Yellow Transparent has a grip upon the tree that only loosens by ripeness. To the cold north this will prove a valuable addition to our rather limited list of hardy varieties—N. D. SMITH, in *Home Farm.*

THE LARCH.

According to Michie, one of the latest writers on the subject, the White Larch (*Larix Europæa*) was probably introduced into Great Britain about 150 years ago. The oldest known Larches in the United Kingdom are two fine trees called "The Mothers," which were planted near the west end of the cathedral of Dunkeld in 1736 or 1738 by the then Duke of Atholl. The larger of these trees has to-day a girth of twenty-two and a half feet at one foot from the ground, is a hundred feet high, and is estimated to contain 480 feet of measurable timber. When first brought to Dunkeld, the young Larches, five in number, were in flower-pots, and were carefully kept in a greenhouse as rare and tender plants.

Of these five "Mother" plants two only are now standing, although three of them grew to be large, handsome trees. The fate of the third is thus described by Mr. Michie: Mr. McCrosty, gardener and forester to the Duke of Atholl, was a man of sterling character and ability, and to the end of his life a much-esteemed and favored servant. Everybody, however, had to give way to him, for the redoubtable McCrosty had an unusually hasty and fiery temper. On one occasion McCrosty mentioned to his Grace that the saw mill at Inver, Little Dunkeld, required a new axle. The Duke, having at the time some friends with him, requested McCrosty, probably as a joke or to show him off, to cut one of the "Mothers." This so enraged the veteran forester that he made a desperate effort to strike the Duke, being only restrained by the noblemen present and the opportune shutting of the door. Baffled in his efforts to strike, he took off and flung his shoe at

his Grace, and left his mark on the intervening panel of the door. The tree, however, was cut down, but, adds Mr. Michie, it could hardly be said "whether the Duke or the forester in calm moments regretted the frolicsome and impulsive act the more, for his Grace could never afterward speak of the transaction without unmistakable signs of regret, while over it the forester is said to have shed many tears. And, after all, the tree was never converted into the axle for which it was cut down, but filled a higher and nobler destiny in making articles of furniture."—*Floral World.*

GARDEN VIOLETS.

The Violet is a blossom for all the year round, and there is not a month when one need be without fresh blooms of it from cold-frame, garden, or window-boxes. Planted in a shady corner of the garden, where yet they have an airy, well-drained nook, Violets will take care of themselves, with the kindness of a covering of dead leaves in fall. But they last so long and give such richness that the borders are worth preparing well. What the garden Violet dislikes most of all is standing with its feet in the wet, unlike the fragrant white wild Violet, which we find in meadows and bogs.

My Violet border is planned to give a succession of bloom the year round, the earth from the three-foot bed being dug out two feet deep, and the sides stoned up with rubble laid in mortar with which coal-ashes have much to do. This keeps the Violet roots from gadding, and from freezing, likewise. Nine inches of stone are filled in for drainage, with turf and some old pounded mortar above, to keep the earth from washing down, and the other foot is Violet soil—good strong loam for the basis, with liberal mixture of old barnyard stuff, and the top leaf-mold, rich garden and sand with plenty of bone-dust, which Violets love. The border lies under the lee of a little wood which skirts the grounds, facing full south, but screened by tall plants the other side of the walk. Here the roots will spread into great crowns nearly two feet across, within the year. In this favored spot one may feel sure of finding Violets in any month of the year.

In autumn, a wooden frame and sash goes right over the border; plants that have been growing in the shady corners of the garden are brought under cover, the old ones well enriched and half smothered in dead leaves, which are heaped around the frames, and the Violet season goes merrily into Christmas-tide. New plants are coming into bloom while the old ones are resting. They get their bone-dust, their weak tea of old leaves, old wood, and very old manure steeped in rain-water when the soil is very dry, and they do nothing but grow and blossom. Only one thing they ask—not to get too wet. You can hardly give Violets little enough water in cold weather. Only till the earth is dry several inches deep, need you water them, which will be once in two or three weeks. They will bear the sashes lifted in sunny noons, and warm winter rains for perhaps half an hour; but avoid letting them get drenched, or having any drip from the sashes. That brings yellow leaf and decay among the crowns.

Very few people know the varieties, even, of sweet Violets which enrich the border. The English, the Neapolitan, and the new Russian varieties, are barely known by name; but you will hardly find one well-educated person, not a gardener by calling, who can tell the difference. As the sweet Violet, *Viola odorata*, is native in England, Russia, Italy, and throughout Europe and part of Asia, we may look for differences of interest in all.

Neapolitan Violets are pale, long-stemmed, and so fragrant that you think of Violet Attar in the room with a cluster of them.

Marie Louise is deeper purple, and a rich bloomer, which with care, in the open garden,

starting early in a sunny, sheltered place, will give flowers in spring and autumn.

The *English Violet* is deeper purple still, and the standard garden variety for ease of cultivation and sweetness. Roots of this should be planted in every sheltered spot, under shrubbery, on light wooded banks, the north side of houses and arbors, wherever one wants the winds to be laden with sweetness.

The true *Russian Violet* is small; the *Czar*, large, deep purple, almost black by the side of others, and very sweet.

The *Victoria Regina*, a large, deep-hued, scented Violet, is not to be confounded with the *Queen of Violets*, which is white, double, and large, vying with the *Belle de Chatenay*, inimitable for its tinged pale petals, which suit the snow-wreath Heliotrope.

The winter cultivation of Violets is easy, and they are the most charming of house plants, bearing dry air and neglect with more equanimity than many favorites, only dying of gas and overheating.—*American Garden.*

NITRATES ARE NEEDED.

Early in spring, the conversion of the nitrogenous matter of the soil, or of manure, into nitric acid, is exceedingly slow. It needs heat and moisture, bacteria and lime. In moist land, during hot weather in summer and autumn, the conversion takes place most rapidly. This is an advantage to the grower of winter wheat or winter rye. The growing wheat or rye plants in the fall take up the nitrates. I cannot go into the subject now. What I want to say is this; ordinary farming can avail itself largely of the natural fertility of the soil. We can grow crops of corn, and wheat, and grass, for many years without manure. But not so the market gardener. No soil in the world is naturally rich enough to grow garden crops to advantage and profit. Why? Not because garden peas require any more or different plant-food than field peas, or garden beets any more than mangel wurzels. It is because the gardener desires early crops. He desires to get the growth at a season of the year when little or no nitrates are formed in the soil. To attain his object, he puts into the soil a monstrous quantity of manure. To grow a crop of early cabbages, or early cauliflowers, it is almost impossible to make the land rich enough. At any rate, we find that the richer the land is made, the earlier and better are the cabbages, and the more profit. We have to furnish three or four times as much manure as the crop needs. Why? Because the soil is cold and no nitrates are formed. We try to furnish the plants with all needed nitrates by an excessive application of manure—better apply the nitrates direct. This is not theory. I have been trying for years to grow good celery plants in the open ground. I could succeed only where the ground had been excessively manured for some years past. I have plowed in, the previous autumn, seventy-five to one hundred tons of the richest, well-rotted manure, and had “fair to good” celery plants. Now, by the use of nitrate of soda I can get celery plants earlier, larger, and every way better, at less than one quarter of the cost. There is no mystery about this. I presume we apply more nitrates than three hundred tons of manure per acre would furnish early in the season. Later, of course, when the manure commences to decompose an abundance of nitrates would be formed, but then early garden crops want the nitrates while the soil is so cold that nitrification cannot take place. —JOSEPH HARRIS in *American Agriculturist.*

AUTUMN TRANSPLANTING.

Ben Perley Poore, in the *American Cultivator*, says: "Autumn is, so far as my experience teaches me, a better season for transplanting trees and shrubs than spring. Any trees, even the most delicate, may be successfully transplanted in autumn, if a little protection is afforded them by covering the root during the first and most trying winter. Where complete success is hoped, it is best to shift their locality in the fall, if possible. The protection of most trees, shrubs and woody plants may consist in spreading a few inches of litter from the stable around the trunk and over the roots. Delicate plants are sometimes supposed to be destroyed by too much protection after being transplanted, when, in fact, they perish for want of it, being killed by the alternate freezing and thawing of the earth and its surface. This difficulty might have been easily obviated by covering them with evergreen boughs or meadow moss.

"When trees or shrubs are transplanted in autumn, the earth becomes consolidated at their roots, so that the radical fibres soon take firm footing in the earth, and the plant is prepared to vegetate with the earliest advance of spring.

"In transplanting trees and shrubs of every description, it is desirable that as much earth as possible be removed with the roots. If this is done, there will be less danger of their suffering by the change of situation. The excavation of the earth for the reception of the roots of trees and shrubs should bear some proportion to their size. They may generally be made from four to six feet in diameter, and of about 18 or 20 inches in depth. Large trees will require a larger opening than this, and small ones not so large. The subsoil where they are to be located may be thrown out and replaced at bottom with a fine mould, intermixed with a portion of good manure. Trees transplanted should stand two or three inches deeper in the earth than they stood previous to their removal. In no case should the extra depth exceed this. The radical fibres are to be spread horizontally in their natural position, and the soil intimately blended with them and compactly pressed about the trunk and over the roots. No manure should be permitted to come in immediate contact with the roots, though it should be plentifully placed about them on all sides. Should it touch them, they will be likely to sustain injury and rot.

"Though moist, dull weather is generally best for transplanting, it should not be done when the ground is very wet. The earth should be only moderately moist, otherwise it will be clammy and heavy. The operation of transplanting is most successfully performed in cloudy days, and a little before evening, previous to a shower. The reasons for this are obvious. If it be done when the earth is dry and in the middle of the day, plants require watering and shading for a considerable time afterwards. The tops of trees and shrubs transplanted must be lessened in proportion to the loss the roots may have sustained. Otherwise the plant will perish from the loss of its nourishment. The ordinary quantity of root being diminished, the exhaustion from evaporation will be greater than the absorption of the remaining portion of root, so that the plant will die by transpiration. If the above old rules are followed, the trees and shrubs transplanted will almost invariably live."

THE TULIP TREE.

A writer in *Index*, Vineland, New Jersey, says, "I can testify of the beauty and stately character of the old tulip trees I have seen in various parts of the country; but in our region, the native trees being all on low and damp ground, we feared they would not do well on our poor,

dry, gravelly and sandy barrens. They have been pretty liberally tried on all kinds of soil for street trees. The result is they outgrow all other kinds beside them, are bright and clean in foliage, symmetrical in form and stately in appearance. No other kind so quickly makes a satisfactory shade tree for the street or park. I have not yet seen, among the many hundreds here, an 'ill shaped' one or a 'broken branch.' "

Thomas Meehan says of it, "When unsurrounded by any other tree it branches out close to the ground, and presents a fine conical appearance till it gets old, when it becomes somewhat irregular and rough. Few trees are better fitted to form a single object on a lawn or in a park; the very peculiarity of its foliage and appearance suggesting the exclusiveness in which it would stand in order to show off its entire beauty. It thrives best in strong, clayey or micaceous soils." He adds, "It is short-lived in towns, and soon shows a distaste for city life." Some fine specimens are to be seen growing on one of the streets of St. Catharines, but perhaps the city has not yet become so large as to be distasteful to the Liriodendron. They are handsome at all times, and particularly attractive when covered with their large, yellow, tulip-shaped flowers.

AN ORCHARD FERTILIZER.

The best fertilizer I have used for fruit trees is chip-dirt from the woodpile, and old ashes. I mix in the proportion of one bushel of the ashes to three of the chip-dirt, stirring well with the shovel. About two bushels of this mixture is to be spread around each young tree, giving large, well-grown trees more. The manure is applied at any season. Do not pile around the trees any litter or rubbish that would harbour mice. In summer keep the weeds from around the trees. Experience has taught me that this fertilizer serves a very important purpose, not only in supplying the trees with suitable food, but in mellowing the soil, and helping on such crops as I may choose to plant in my orchard. It is an excellent fertilizer for any crop, annual or perennial, and the ashes (from hard-wood), supply the trees with the element they most need, and the soil lacks, namely potash.

It is a pleasure to see how a young orchard will thrive after an application of this fertilizer. Sometimes I burn logs to get ashes for this purpose, and if I have no chip-dirt, I go to a dead oak or hickory, and scrape together the fallen bits of bark, and the rich earth around the tree. It is a very good substitute for the chip-dirt. It is obvious that this material is rich in the elements of food of trees. I believe in keeping fruit trees well fed, and that a large space around each tree should be given exclusively to the tree from which to draw its supplies. I never plant close to my trees, preferring to have them branch low, and to trim down rather than up.—B. W. JONES in *American Agriculturist* for March.

A NEW REMEDY FOR THE IMPORTED CABBAGE WORM.

Professor C. V. Riley says: "One of my correspondents, Mr. Charles H. Erwin, of Painted Post, N. Y., has accidentally hit upon so simple and yet, according to his experience, so perfect a remedy for the imported cabbage worm that I wish to give his experience as much publicity as possible, that it may be widely tested and, if possible, verified the coming season. It is, to sum up an extended experience which he narrates, simply ice cold water, or water but a few degrees

warmer than ice water, sprinkled upon the worms during the heat of the day. Mr. Erwin found that such an application in the hot sun caused them to quickly let go their hold upon the leaves, curl up, roll to the ground, and die, while the cabbages suffered nothing, but looked all the fresher for the application.

"Should this method prove as successful with others as it has with him, it is evident that we have here a remedy of very general application, and one which in cheapness and simplicity far transcends the Pyrethrum which, since I discovered its value for the purpose, in 1880, has been, on the whole, our safest and most satisfactory remedy against Pieris rapae. Where ice is readily obtainable, as in the more Northern States, or where cold springs obtain, Mr. Erwin's discovery will prove of very great value to cabbage growers, and will probably prove just as useful against some of the other cabbage worms."—*Scientific American.*

WILD FLOWERS.

BY AUGUSTUS WATTERS.

Oh! dainty baby foresters
That hide in silent nooks,
That linger by the cowpaths
And peep into the brooks;
Your dimples bring me back again
The merry days of old,
When every wood was fairy-land
And buttercups were gold.

By mossy rocks and nodding ferns
You lift your timid eyes,
And by the wounded maple trees
In smiling groups arise.
No more the shrieking winter winds
Affright the naked woods,
But all the scented aisles are gay
With Flora's dappled hoods.

Again the daisy's snowy sails
O'erspread the grassy seas,
Again a thousand tiny masts
Bend low before the breeze;
And daffodils, in scented robes,
On sunny knolls are seen,
And dandelions, like little suns,
Shine out amid the green.

Though years have sped since first for me
You made the meadows bright,
And many a sunset-tinted dream
Has faded into night,
Still do I hail with boyish love
The violet's balmy breath—
Still joy to see the crocus burst
From winter's icy death.

I trace the tints of deathless Hope
In all your tender beauty,
Ye tiny bards that sing to man
Mid stony paths of duty,
That whisper of a paradise
The toiling years shall give,
When grief, and hate, and death shall die,
And only love shall live!

HYDRANGA PANICULATA GRANDIFLORA.—This shrub deserves much more attention than has been usually bestowed upon it. It's an easy growing plant, very profuse bloomer, bearing extra large showy panicles of pure white flowers—sometimes tinged with pink as it ages—holds its blossoms an exceedingly long period, blossoms in fall when no other shrubs are in flower, and its blossoms make nice dried parlor ornaments in winter. We consider it one of the best, and too long neglected. It deserves a place everywhere.—*Palmer's Monthly.*

THE DAHLIA IN THE GARDEN.—The Dahlia is, no doubt, destined to be more prominent in good gardens than it ever yet has been. The tall, handsome plants with large double flowers will occupy conspicuous places where they will show to advantage. The bedding or dwarf varieties will be raised in masses in beds and on the borders of shrubberies; the bouquet and single varieties will be valued as cut flowers. Thus there is a special value to each class, and blooming,

as they all do, in the autumn, they are without rivals in their season.—*Vick's Magazine.*

MOST PROFITABLE STRAWBERRIES.—This season's experience will teach our strawberry growers the advantage of planting late ripening varieties. To secure good paying prices those sorts should be grown which ripen after the main crop from the South has been marketed. So long as the South continues to ship this fruit in large quantities the earlier varieties should be left to that section and only grown here for home market. Among the late ripening sorts are Sucker State, Sharpless, Crescent, Cornelia, Jumbo, Windsor Chief, Mt. Vernon and Cumberland.—*Farmer and Fruit Grower.*

CODLIN MOTH.—Mr. Moody, of Lockport, states that farmers of Niagara County spray their apple trees with water containing a very little Paris green in suspension, with marked success in preventing injury from this insect. He uses a force pump with the liquid for spraying, placed upon a farm waggon. An attachment connected with the rear wheel of the waggon, operates the pump and keeps the liquid stirred, so that a single man is enabled to drive the team and syringe the trees. Upon trees sprayed with the mixture two or more years in succession, the codlin moth is almost unknown.

ADVICE TO FRUIT GROWERS FOR HARD TIMES.—"It will certainly do no good to grumble and complain of hard times, trying to make ourselves believe that times are worse than they really are. Let us rather bring to bear on our respective pursuits increased skill, energy and perseverance. We must be prepared for these periods of depression, 'hard times,' for they are sure to come sooner or later, and generally sooner. The preparation we need to make is to become first-class cultivators. Poor farming, poor fruit-growing and gardening, will always fare badly in hard times."—*Vick's Magazine.*

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TRANSCRIBER NOTES

Misspelled words and printer errors have been corrected. Where multiple spellings occur, majority use has been employed.

Punctuation has been maintained except where obvious printer errors occur.

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[The end of *The Canadian Horticulturist, Volume 8, Issue 7* edited by D. W. (Delos White) Beadle]