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The
Canadian

RORTICULTURIST.

AN ANNUAL
 (DEVOTED TO)
 THE
 FRUIT
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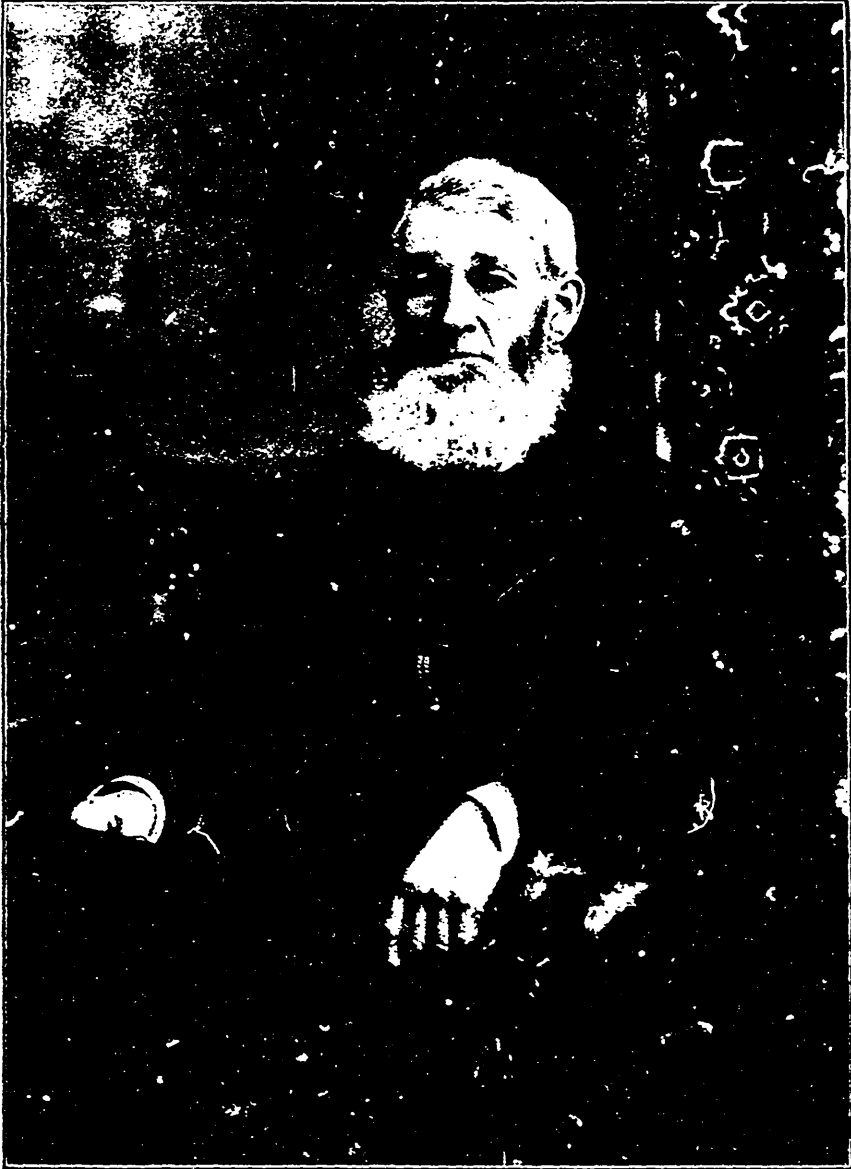
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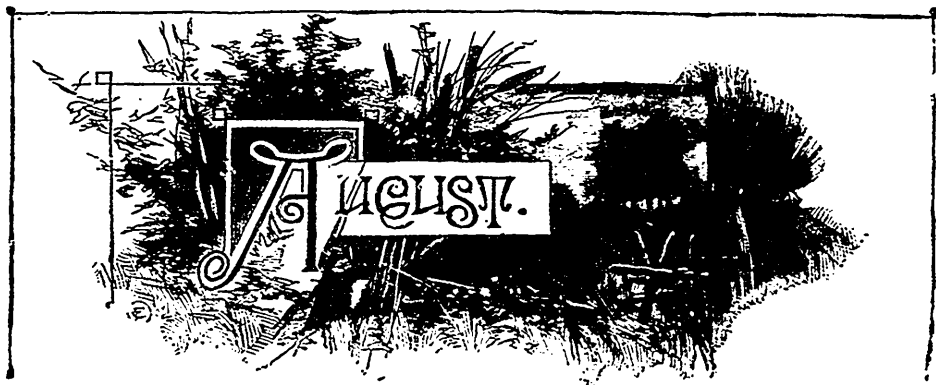
*James Van Dine
Columbiana.*

THE
Canadian Horticulturist.

VOL. XIII.

1890.

No. 8.



SOME PROMINENT CANADIAN HORTICULTURISTS—XI.

THE LATE JOHN CROIL, OF AULTSVILLE, ONT.

FRIEND after friend departs,
Who hath not lost a friend?
There is no union here of hearts
That finds not here an end.



HIS year seems full of calamities. Railway disasters, cyclones and the grip have mown down thousands of our fellows, and among them some whose loss is keenly felt by all students of horticulture.

The Society of American Florists has lost a prominent member in Mr. Peter Henderson; the Western New York Horticultural Society its first and only president, Mr. P. Barry; the Montreal Horticultural Society its worthy vice-president, Mr. Chas. Gibb, and now our own Society has to mourn the loss of one of her highly valued directors.

Mr. John Croil was a native of Glasgow, Scotland, where he was born in the year 1824. He received a good classical education at the Grange Academy, Sunderland, England, and at the age of nineteen came to Montreal, where for four years he engaged in mercantile life. But finding the close confinement unfavorable to his health, he decided upon a country life,

and purchased a farm in Osnabruck, situated on the banks of the St. Lawrence, and built himself a home which he appropriately named "Sunnyside." Here he planted six acres of an orchard, largely of the Fameuse, which became noted as one of the finest in the section, and this, with his garden, gradually engrossed his attention, until of late years. His chief delight was in the pursuit of horticulture. He has been a director of our Association since the year 1877, during which time he has worked faithfully in the interest of our department of industry. His frequent and spicy contributions to this journal and to our reports are a proof of this statement. Only a short time before his decease, he agreed to give a paper at our Summer Meeting on the "Use of Artificial Fertilizers in the Garden;" but on the 26th of June his work in his terrestrial garden ceased, and he was called to take his place among the flowers and fruits of the Celestial garden.

Dr. Ault, of Aultsville, writes:—"His illness only lasted three days. He died of inflammation of the bowels. He had been working very hard, getting his garden in order, in fact beyond his strength, so that he rapidly failed under the attack."

Though he was a modest man, and when last November a request was made of him for some notes of his life for use in our sketches of Canadian Horticulturists, it was only the briefest that he would give. He said, "You say, send me some notes of your life, and I will put *it* in shape. Of course *it* refers to the life. Quite kind. All I can say is that it will take all your complimentary pen can do to make it worthy of even the smallest public notice; the only redeeming clause in my history, perhaps, being the consciousness on my part of work, no doubt well intended, but very imperfectly done."

In May last, Mr. Croil sent us some lines on "Sunnyside," written by the Rev. J. J. Cameron, M.A., of Woodlands, saying that he considered them altogether too flattering to himself.

We cannot do better than close this sketch by quoting the lines referred to :

Oh, Sunnyside! Sweet Sunnyside!
Thy charms I would declare,
As nestled by St. Lawrence' side
You breathe its bracing air.

Bedecked with varied hue, thy flowers
Dispense their fragrance round,
While feathered songsters from thy bowers
Chant forth melodious sound.

Thy trees in graceful beauty wave
Before the gentle gale;
Thy verdant banks the waters lave,
Refreshing sea and dale.

Thy grounds are charming to behold;
Thy shaded walks I love;
Thy beauties tongue can scarce unfold;
Thy image heaven above.

Thy happy home, embowered 'mid trees,
An old historic pile;
'Mid winter's storm and summer's breeze
The passing hours beguile.

As time has flown, what joy and gloom
Thy ornate walls have seen;
What hallowed mem'ries haunt each room
Of all the past has been!

What songs of joy were often sung
To cheer the social hour,
While joyous notes of music rung
With thrilling, soothing power.

What hours of sorrow, too, were passed
When, worn with anxious care,
The heart at last found peaceful rest
In humble, earnest prayer.

Some have come, and some have gone, Their forms no more we greet;	[won, Some have run the race, the crown they've God grant they all may meet.	Fair Sunnyside! Loved Sunnyside! God bless its honored host! May peace within thy walls abide, Fair virtue be thy boast.
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Long may our genial friend enjoy
The home his hands have reared;
May heaven's sweet peace without alloy
By ties and time be shared.

THE SUMMER MEETING.

THE old town of Niagara, once of considerable importance, both from a civil and a military point of view, but latterly of little importance owing to the removal of the county offices to St. Catharines, is now once more coming to the front as a fruit district. Having received from here the first president, it was only fair that the Ontario Fruit Growers' Association should hold one of its meetings in this old historic town.

To a stranger the approach is full of interest, whether you come by boat from Toronto past those two forts which, like sentinels, stand at either side of the river, to the old pier; or by the "Observation train," down the American side, by a cut along the rocky bank of the river; or on the Canadian side, down the mountain near Queenston, where you have one of the loveliest views imaginable of this whole fruit section, with the town in the distance at the angle where the lake and the river meet, and, near at hand, the monument to the bravery of Sir Isaac Brock, who so heroically fell in the defence of his country.

The officers of the Association were received most kindly by the officials of the local Fruit Growers' Association; and the president of that society, Major Courneen, made us an address of welcome in the most suitable terms. Nor were they satisfied with mere words of expression of welcome, but they furnished enough carriages to give us all a two hours' drive among the peach orchards of that section, which are far more extensive than our preconceived notions had led us to expect. It appears that in the township of Niagara alone there are at least four thousand acres of land devoted to peach culture, or about one-fifth of the whole amount of arable land in the township. So well adapted indeed is this land to peach culture and so little have the trees suffered with either blight or yellows, that it is no wonder that little else in the fruit line is planted, and that almost every farm is being devoted to the peach as the most profitable industry. Among others we were shown the fruit arm of the late R. N. Ball, once an enthusiastic member of our Association. He had planted over sixty acres to peaches, and this is now being managed by Mr. Leslie Nelles, of Grimsby. The crop all through will be very light this year, but should a year of full bearing

come, it is doubtful whether sufficient boat accommodation could be secured for the immense number of baskets which would be shipped.

Among the gentlemen who received us cordially, and showed us through their gardens, were Mr. Pafford, the Mayor, and Archdeacon McMurray. The latter, though he has attained the honorable age of four score years, is still an enthusiastic member of our Association, and a most successful gardener. In his garden he has about a half acre of grapes, many being foreign varieties, such as are usually grown under glass, which yielded him last year the sum of \$150.00. He gives them protection in the winter by laying them down and putting a few shovels of earth over the young wood. Mr. Pafford has also had success with such varieties as the Black Hamburg, Golden Chasselas, etc., and even grows figs by giving them winter protection, cutting down to the ground each stem as soon as it becomes too stiff to bend over in the autumn. His fig trees had on many figs in all stages of growth.

One important work accomplished at this meeting was the Ontario Fruit List, which was referred to as in progress at our winter meeting. This has now been completed, as well as another of equal importance, viz: District Fruit Lists, giving the varieties of apples suitable for planting in the various agricultural districts of Ontario. These will be published in our next annual report, and also, if possible, copies will be sent to all the agricultural societies in Ontario, in advance of the publication of that report.

Mr. Billups, a well informed entomologist, residing at present at Niagara, exhibited a very fine collection of the Beetles, composing the family of Curculionidae, both Canadian and foreign. It surprises an uninitiated person to be told that there are hundreds of species of Beetles belonging to this one family. Mr. Billups gave us a life history of the plum curculio, and demonstrated that this insect continues its work of depositing its eggs during a large part of the summer, and therefore vigilance against its attacks should not be too soon relaxed. He was of the opinion that the effectiveness of Paris green against the curculio was mechanical, the parent beetle having a dislike for dust. He thought that road dust even might be effective in preventing the placing of the eggs upon the young fruit. The writer remarked that he had found hellebore even more beneficial than Paris green on the plum trees, those trees sprayed with the latter having dropped all their fruit, and those with the former having a fine crop still hanging. Mr. Billups maintained that the secret of its usefulness was probably the presence of a dried powder upon the fruit, and not its poisonous nature.

Many other interesting subjects were taken up, such as "How to make the best of ten acres of ground," "How to handle apples best for the British market," "Peach culture," "The Pear, its history and culture," "Humbugs in horticulture," "How to treat gooseberry mildew," "Profits

of grain and fruit growing compared," etc., all of which will appear in full in our next report. It will be our aim to place this report in the hands of the Minister of Agriculture at an early date, so that it may precede the other public printing, and thus reach our members at an early date, instead of coming out so late that many of our readers will be unable to give it attention.

THE APPLE CROP.

WEEK by week the prospect for apple growers is becoming blacker and blacker. The *Fruit Trade Journal* of New York city has an article entitled "The Ruined Fruit Crop," which, while deploring the scant crop of other fruits, particularly specifies the apple as being a great failure in New York State, and that in consequence a large part of the farmers, whose chief dependence was in their orchards, are much distressed, especially as this follows a year of a similar misfortune. The *Montreal Trade Bulletin*, under the heading "The Apple Crop," says that a buyer has just returned from the south, where he went in search of a car load of early apples, but so great is the failure in that quarter also that he had to return without being able to secure them. The same condition of affairs is reported from Michigan and other apple districts. *Popular Gardening* gives, in the July number, an estimate of the apple crop based upon reports received from the various States, and, using a scale in which 5 indicates a very heavy crop, 4 lower than the average, 3 average, 2 under average, 1 poor, and 0 a total failure, makes out the following as a very fair estimate for the whole country:

Apples, early.....	1'9	Plums..	1'6
Apples, late.....	1'9	Quinces	1'9
Cherries.....	2'0	Raspberries	3'5
Grapes.....	3'4	Blackberries	4'0
Peaches.....	1'0	Strawberries.....	3'2
Pears, early.....	1'4	Currants... ..	2'6
Pears, late.....	1'4	Gooseberries.....	2'7

From this it is evident that a very poor crop is expected on this continent, and, as the dropping of the fruit still continues, except perhaps in the case of the Northern Spy, there is little hope that the result will prove better than the anticipation.

Reports from England and the continent of Europe seem to be almost as bad as those from America. According to the *Fruit Trade Journal*, published in London, Eng., there will be very few apples or pears in England. Indeed, in some parts the crop will hardly pay for harvesting. The trees have been affected by blight and stripped by caterpillars, and the blossoms, owing to frosty nights occurring when they were open, have set very

little fruit. Conflicting reports have been received from the various apple-growing districts of Holland, from a summary of which one half of an ordinary crop is calculated upon. A report from Antwerp states that the Belgium crop also is very uncertain, and that not more than half a harvest can be estimated upon from that country. It is therefore probable that apples will this year be higher priced than last year.

LATE OR EARLY RIPENING OF FEARS.

SIR,—I should be very agreeably disappointed to find the Longfield apple keeping so well as is stated in your July issue, p. 207. I have had it in fruit three or four years, and find it in good eating order quite early in the fall. There can be no reliable test of the keeping of any apple in small quantities. I find they act quite differently in barrels, and as yet I have not had Longfield in that quantity. Few people, even fruit growers, understand the principles underlying the keeping of apples. The Russians are said to keep in good condition many of their varieties which have not yet proved long keepers in America. I attribute this in part to their shorter summer and the early on-coming of cold weather in the orchard latitudes of that country. But probably that is not all. I find that even the September apples, like Oldenburgh, only need to be gathered as soon as colored, and while still quite hard, and placed in a cool cellar, to prolong their season all of four weeks. Attention to gathering apples in the morning while cool, or in cloudy weather, makes a considerable difference, particularly if they have to be kept in barrels. Baskets are better for fall fruit. I have found that a little skill alone is needed to have the Wealthy apple in fine eating in October, or by a different treatment to hold them firm and sound until March. Gather them rather late in September, store them in bulk in a warm place and their rich odor will inform you truly that they are in eating order by the last of October. Gather them as soon as colored, in the morning, transfer them in barrels at once to a cool cellar, of which the windows are closed by day and opened by night as late as is safe, and they will keep until the cellar begins to warm up with the advance of spring. But, for long keeping, only sound and unbruised fruit must be used, and it must be handled like eggs.

Newport, Vt.

T. H. HOSKINS.

LAYING DOWN PEACH AND PLUM TREES.

I HAVE just read the notes on growing plums in the cold regions by laying down for winter protection, and wish to say that the East European method is much better than that practised by Mr. Hamilton and Mr. Sharp.

When young and easy bent down, attention is given to making the most possible growth upward by trimming up the stem. When the trees have attained a height of stem of from four to five feet, the stem is laid down permanently. The next spring the top is bent upward and kept perpendicular by tying to a stake. The next fall, and continuously thereafter, the laying down is done by cutting loose from the stake and bending over to one side. The spring in the four or five feet of prostrate stem will permit even a small boy to lay over the top and pin it down for covering with earth or litter. In parts of Iowa we are now growing the tenderest and best peaches and plums in this way.

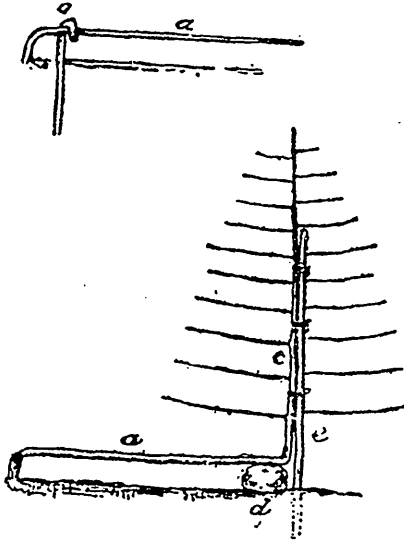


FIG. 55.

The only care needed is to keep the prostrate stem from rooting. If it

becomes rooted, the top becomes much stiffer and difficult to get down without injury. The rough sketch will show the prostrate stem and top attached to stake.

Iowa Agricultural College.

J. L. BUDD.

PEACH YELLOWS.

THERE has been for a long time an opinion held by some prominent Massachusetts fruit growers that peach yellows were curable, and now comes the eighth bulletin of the experiment station of the Massachusetts Agricultural College, bearing testimony in the same direction. It seems that experiments have been made since 1875 by Prof. Goessman and by Prof. Maynard, the latter of whom is the writer of this bulletin, and as a result both these gentlemen are convinced that the disease is curable. The yellows is claimed to be the result of such causes as lack of proper food supply, injury by cold, injury by borers, injuries by accident, etc. Out

of an orchard of nine hundred trees in the college orchard, fifty were unmistakably affected with the yellows, and every one of these were injured, in either their trunks or their main branches, from ten to sixty per cent. While not professing to have discovered anything about the real nature of the disease, Prof. Maynard is confident that it can be prevented, and indeed often cured, by careful cultivation in early spring only, and by applying a complete fertilizer in the fall or early spring. The fertilizer which he particularly recommends is the following: Equal quantities of muriate of potash, and nitrate of soda, with about four times the weight of ground bone, applied in March or April, from five to ten pounds to a tree.

We are inclined to be a little dubious about the statement that all trees affected with the yellows will be found to have been subject to one of the causes enumerated. We had an orchard of three thousand peach trees at Maplehurst a few years ago, and about two thousand of them died with the yellows, and we feel certain that a large proportion were not affected by any of these predisposing conditions. However we are inclined to attribute some virtue to the liberal application of potash fertilizers to the peach orchard. An orchard of eight hundred trees is now in an excellent state of health and vigor, and cases of yellows are very rare, and, when they do occur are of course, at once rooted out. These have been very liberally treated every year with wood ashes, and as a result, no doubt, are in their present vigorous condition.

INSECTIVOROUS BIRDS.

THE following birds are to be classed among the most helpful kinds in the general warfare against insects: Robins—cut and other earth worms. Swallows, night-hawks and purple martins—moth catchers. Pewees—striped cucumber bugs. Wood thrushes and wrens—cut worms. Cat birds—tent caterpillars. Meadow larks, woodpeckers and crows—wire-worms. Blue-throated buntings—canker worms. Black, red-winged birds, jays, doves, pigeons and chippies—strawberry pests. Quail—chinch bugs, locusts. Whip-poor-wills—moths. Hawks, all night birds, owls, etc., tanagers, and black-winged summer red birds—curculios. There may also be mentioned the following insect pest destroyers: Nut crackers, fly catchers, chimney swifts, indigo birds, chipping and song sparrows, black birds, mocking birds, orchard orioles.

PACKING FRUIT FOR LONDON.

(Extract from "British Trade Journal," June 1, 1890.)

NOW that powerful corporations are busying themselves with the cultivation of fruit in the Colonies and in Central America, with a view of shipping direct to London, general interest attaches to the result of the competition in fruit packing recently instituted by the Victorian Government. A prize was offered for the best packed box of apples consisting of twelve varieties, eight of each kind, to be shipped from Melbourne to London, the prize to be given to the firm or the fruit grower whose consignment should arrive in the finest condition. The boxes were addressed to the Agent General for Victoria in London, Sir Graham Berry; and on the 19th ult. they were opened and examined. Unfortunately the competition was limited to two boxes, one having been sent by Mr. S. A. Nielson, of Richmond, Victoria, and the other by Mr. Draper of Arthur's Creek. Sufficient, however, could be gathered from the two methods of packing adopted to afford a valuable lesson to all engaged in the trade. The first, Mr. Nielson's, was undoubtedly superior, and generally successful, although the selection made as regards the variety of fruit was not happy. Of the ninety-six apples which he sent only five were decayed; in four of these (Adams' Pearmain) the decay was but slight. The apples were gathered on March the 15th last, and packed on the 20th, and dispatched in the cooling rooms of steamers. They were first placed singly in ordinary paper bags. They were arranged in layers in the boxes, and the intervening spaces were carefully filled with paper shavings, a sheet of paper being laid between each layer. The box was in two compartments, divided by an upright partition, preventing too much lateral pressure when tilted on its side. Thus there was little risk of crushing or bruising in course of transit. On opening the case the apples were nearly all found in an admirable condition as far as appearance went; and the color was remarkably bright; but the flesh was in many cases very dry and tasteless. The "Jonathan" variety was one of the best. It is of a rich crimson color, and fairly crisp and pungent in flavor. On the other hand the "King of Pippins" was juiceless and insipid, and of poor quality, unfit for an eating or dessert apple. The "Hoover" seems a good baking apple, which, if imported cheaply, would sell well during the early summer months. The "Ben Davis," though rich in color, has a pulp quite too rich for the English palate. "Rymers" are also uneatable on their arrival here, however mellow and palatable they may be at the Antipodes. "Chamberlain's late Scarlet" turned out well, being juicy and of good skin and bright color. Another apple arrived much like wool. The second box had the apples wrapped separately in tissue paper and that was all. The result was that not a single specimen came out uninjured, and in

many cases they were quite rotten. The experiment serves to show that in no case must such packing as paper or wood shavings be omitted in packing apples. Probably the soft thin shreads of wood fibre now made by machinery would serve the purpose admirably, and be in the end better and more durable than paper. They have, moreover, the advantage of being readily and cheaply made from many of the woods in which the Colonies abound. It remains, of course, to be seen whether other kinds of fruit—such as grapes—could be packed in the same way. There is no doubt that fairly good quality, placed in large quantities on the London market early in spring or summer would command a sale, unless the prices were prohibitive. Just now, at the end of May, the London fruiterers' shops are redolent with the delicately tinted Tasmanian apples. These attract, but the consumption is confined, by reason of the prices, to the wealthy few. The vast multitude of buyers is not yet touched.

FALL vs. SPRING PLANTING.

FROM the purchasers' standpoint, does it pay to buy fruit trees in the fall? Are there any advantages gained by purchasing in the fall equivalent to the disadvantage of laying out of your money for six months for an article that cannot be made any use of till the spring? If there are none that can be shown, that of itself is a sufficient objection to fall purchasing. Then, what are the advantages claimed and set forth by the advocates of fall purchasing? First, if the purchaser be a farmer, as is the case in the majority of instances, he is told that by securing his trees in the fall he will have them on hand in the spring soon as the season opens and can get them planted and out of the way before his other work demands his attention, and that by an early planting they will get the full benefit of the spring rains to give them a fine setting, and as a result an early start. On the other hand, if he does not get them set out early he is told he can leave them lying in their winter bed till the season is well advanced, and they will then lose no time, as they will have started to grow and, the weather being warm, will rush right ahead soon as planted out. Both of these arguments are fallacious and deceptive, as I think can be shown alike from the standpoint of common sense and from actual experience.

In the autumn season nature prepares the tree for the approaching winter. First evaporation is suspended, then the flow of sap from the roots ceases, the leaves separate and fall off, the bark contracts and tightens about the tree, the pores of the outer covering close up and the tree is ready to resist the penetrating cold blasts of the winter season. If the tree be dug up for fall delivery the process of preparation is very different to this. The leaves are stripped off by the nurseryman before evaporation has ceased, or any

preparation has been made to resist the winter's cold. The tree is sent out in this condition ; it is buried in the earth beneath the frost for the winter ; it absorbs from the soil all the moisture that it can contain, and if, at the first approach of spring, it is taken out of its winter bed in this state and exposed to the cold piercing winds and keen night frosts it is going to have a severe struggle for life. To subject a young tree to this treatment is like taking a child right from the bath tub, and, whilst the pores of the system are all open, exposing it to a cold and chilling atmosphere. The child could not stand such treatment without receiving a shock to its system ; no more can the young tree. If it be a pear or an apricot tree it will almost certainly die ; if a plum it may live ; if an apple tree it will most likely live, but it will show evidences of its harsh treatment through life, in what is known as black heart or other kindred defects.

On the other hand, if the tree be allowed to lie in its winter bed till the season is well advanced and the days become warm and sunny, its fate will be none the less precarious. Before being taken out the buds will have formed and swelled, ready to bursting open ; planted out in the warm sunshine they will immediately burst forth, and in less than two weeks you may have a growth of over an inch in length. But you will not likely get any more growth that season ; for, having exhausted the vitality in the tree itself with no corresponding growth at the root to sustain a continued top growth, the latter must stop and the tree becomes stunted ; and, in spite of every effort on your part to revive its growth it will remain in that condition throughout the season, and the winter will come upon it before it has sufficiently established itself to withstand the frost and storm, and it will die the following spring. The cause is not far to seek. The tree, as before mentioned, had become flushed with sap from absorption ; when set out in the warm sunshine this absorption was stimulated into abnormal growth, and as there was yet no warmth in the ground to promote a growth at the root, the growth at the top must stop when the abnormal vitality of the trunk is exhausted and there is no preparation made at the root to sustain and continue it. To insure a continued and healthy growth in a tree that growth must first begin at the root. This is nature's method, and any interference at variance with her natural operations is certain to be followed by undesirable results, and any tree that has not established itself by firm root growth during the first season after transplanting, in only an exceptional case will it come safely through the winter to do so the second season.

Apart, then, from any monetary consideration, fall deliveries are, in my opinion, decidedly against the purchasers' interest. The very high percentage of mortality, if I may so term it, among pear and plum trees in the County of Perth, I attribute to fall deliveries, and a large percentage of the unhealthiness in both young and older apple orchards, I attribute to the same cause. For example, four years ago a neighboring farmer purchased

a dozen apple trees, which were delivered to him in good order by myself. After keeping them "heeled in" all winter he planted them out early in the spring as recommended. A day or two after a severe storm of sleet set in from the south-west, followed by a keen frost. Every one of those trees lived, but from the start they presented a very unhealthy appearance. On examining them in the month of August following, I found on the south-west side on many of them what I supposed to be frost bites. The bark in spots had become quite dry and hard, and sunken away from the living part of the tree. These spots are now nearly or quite overgrown but they will ever remain diseased spots in the trunks of the trees, affecting them to a greater or less extent throughout their whole system. In my own personal experience I have planted, during the past six years, fourteen plum and pear trees received in the fall, of that number two only are living. During the same time I have planted thirty-three received in the spring, out of which only four have died, and I was strongly suspicious that these four were fall dug when they came to hand. As a class, I have a special regard for nurserymen, and the business in which they are engaged has always had a peculiar attraction for me; yet I have still to meet the nurseryman who can instruct nature in her methods, or improve upon them, and the tree left undisturbed in the soil in the fall, prepared by nature in her own way for the approaching winter, and dug up in the spring for transplanting, is, all things considered, the most profitable tree to purchase, and the only safe tree to have anything to do with.

Mitchell, Ont.

T. H. RACE.

PEAR LEAF BLIGHT.

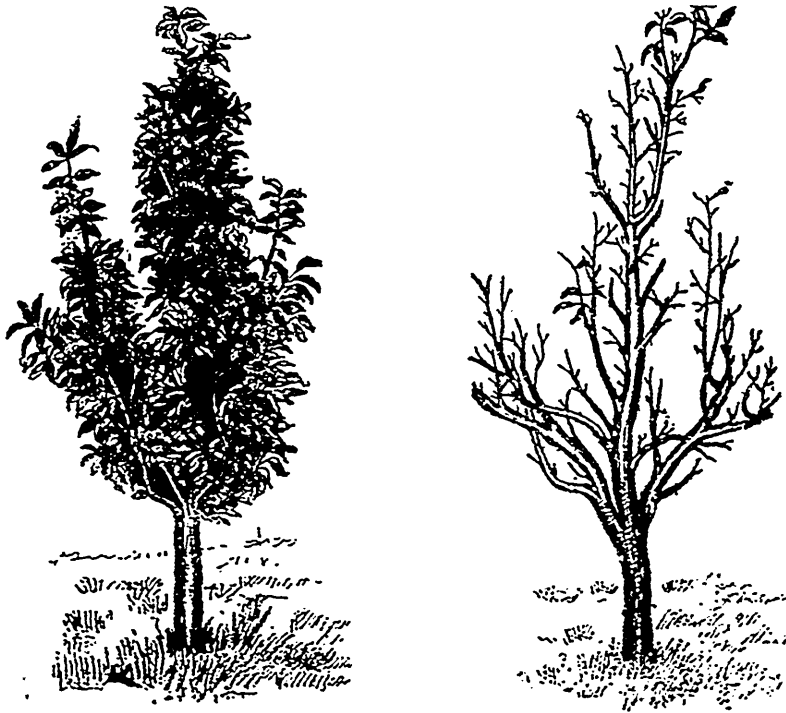
SIR,—Why do the leaves of the pear tree turn black at this season of the year, and drop off? Is it part of the pear blight?—H. WILSON PALMER, *Frankford, Pa.*

AS it appears that this difficulty is very widespread, appearing not only in the vicinity of Philadelphia, but also in Illinois, New Jersey and Ontario, it deserves more than a passing notice. The damage caused has often been very considerable, as trees badly affected become almost wholly defoliated, and this interferes with the growth of the new wood, and consequently with the maturity of the fruit.

Its presence may be first noticed by the appearance of small, dull, carmine red spots early in spring, and which turn to a dark brown color and then drop off. Even the fruit is itself often attacked, showing first spots which are carmine red, and afterwards become dark colored; the skin then takes on a rough surface and often cracks deeply.

The fungus is known as *Entomosporium maculatum*, and is much the same as that which attacks the quince. Probably it is also related to the one which has played such havoc with our apple orchards this year, though

on this point we do not speak with confidence. The spores live over the winter on the fallen leaves, which, therefore, it would be wise to destroy where they are known to be affected, were it a practicable thing to do. No doubt the best remedy is the use of some fungicide such as the Bordeaux mixture. This should be applied with a spraying pump early in spring,



56.—BORDEAUX MIXTURE ON PEAR TREES.

just before the leaves begin to swell, and again with a weaker solution of the same when the leaves are about half grown. For the first application the usual formula may be used which is as follows:—Dissolve sixteen pounds of sulphate of copper in twenty-two gallons of water; in another vessel slake thirty pounds of lime in six gallons of water. When the latter mixture has cooled pour it slowly into the copper solution, care being taken to mix the fluids by constant stirring. The weaker solution for the second application may be made as follows:—Six pounds sulphate of copper in sixteen gallons of water and six pounds of lime in six gallons.

VALUE OF FRUITS AS FOOD.

HESTER M. POOLE in her new book, "Fruits and How to Use Them," quotes a number of authorities in support of her theory that fruit is one of the most valuable articles of food that we possess. The athletes of ancient Greece were nourished by dried figs, nuts, soft cheese

and heavy bread. The food of the Moorish porters in Spain consists of brown bread and grapes. The apple is given first rank as an article of food, and next to it is the grape. It is asserted by the scientist C. V. G. Napier that persons using a farinaceous and fruit diet feel no inclination for alcoholic liquors: "I have noticed that a taste for spicy condiments, butcher's meat and alcoholic liquors is associated, and that a taste for plain flavored vegetables, fats and oils is likewise associated. I have known persons in the habit of taking alcoholic stimulants daily, when eating meat, who find they must give them up entirely when living without meats, their action under those circumstances being too irritating to be endured without great inconvenience." If this is true, the best way to promote temperance is to induce the people to partake more largely of fruit. Mrs. Poole thinks that woman would better her position by giving her undivided thought to the cultivation of fruit, and she calls attention to the fact that in one state alone there are 80,000 superfluous women. These have to support themselves in some way, and why not do it by raising and canning fruit?—*Turf, Field and Farm.*

THAT HUBBARDSTON APPLE.

I WOULD have replied to Mr. Williams' interesting letter on page 176 of THE HORTICULTURIST—so that it might have appeared in the July number—but being away from home could not do so. I am inclined to think, from Mr. Williams' description, that I have not been getting the true Hubbardston, as the apple he describes is similar to the one I have been receiving from Prince Edward County. I might add further that it is very smooth and regular in form, and fully three-fourths the size of a well-grown King. If this is not the true Hubbardston, I always thought it was, and am thankful to Mr. Williams for his information. It might not be out of place to state that I got a considerable quantity of "La Rues," or "Baxters," from the same section three years ago, and they proved a most valuable apple to sell by the barrel, but rather too large to retail. They have been enquired for every season since by those who bought of the lot above mentioned. I would have liked to have said a few encouraging words to my northern friends about some plums and apples that are "promising well," but as last winter was milder than usual, I might be speaking encouragingly too soon, and will wait for another season.

None of your readers have yet given me the information I asked for as to the quality, etc., of the "Crimson Pippin." This, to my astonishment, is among the promising varieties. No. 327, or Yellow Arcad, is fruiting with me this season for the first. It will apparently be an extra early variety, as the fruit is larger than the Yellow Transparent standing beside it. Canada Baldwin so far has never killed back an inch, but seems slow in coming into

bearing. If none of my northern friends have yet tried the *Weaver Plum*, I think they might safely venture on one or two. It fruited with me last year for the first, and is the first *meaty greenish plum* I have been able to grow. The quality is excellent, apparently a grand acquisition to our small list of fleshy plums. But I see I am doing the very thing I promised not to do, so I will close before I get my friends into trouble.

Renfrew, July 4, 1890.

A. A. WRIGHT.

THE MERITS OF WOOD ASHES.

IN an essay read before the American Horticultural Society at the Cleveland, Ohio, meeting a few years ago, Mr. J. M. Smith gave an account of the means employed for the prevention of the evil effects of a prolonged drought. Among these means a free use of wood ashes was named as one of the simplest and most effective.

Recently Mr. Smith has made a comparative test of the effects of wood ashes and barn-yard manure on a scale large enough to show results that are more than an "indication." Two acres lying side by side were treated exactly alike in every respect except that one was manured with unleached wood ashes, and the other with stable manure. Mr. Smith reports the results of the trial to the *Prairie Farmer* as follows:

The acre fertilized with ashes yielded fifty-one bushels the most, and if there was any difference in quality it was in favor of those that had the ashes. Now, the fair inference would be that the ashes were much the better manure for potatoes. Let us look a little further: The last half of May and the first half of June were wet and cold, and so far the two acres seemed to keep just about even. After June 15th the weather became very dry, and there was little rain upon the plants until they were ripe. Very soon after the ground began to get dry it could be plainly seen that those manured from the compost-heap were suffering from want of rain, while those manured with ashes were growing very rapidly. This continued until they were ripe.

The simple fact is, potatoes or strawberries manured with ashes stand drought that would be ruinous to crops fertilized with any manure I have ever tried. To this fact I attribute the failure of the compost-heap acre to hold its own with the acre upon which ashes were used. I have tried the experiment many times, always with precisely the same result, provided we had a dry season during the growth of the crop. I do not know but the rule will hold good with all farm and garden crops, but with the above named there is no doubt. I do not underrate ashes as manure. I have used them in preference to any fertilizer I could get for potatoes for many years.

ZINC IN EVAPORATED APPLES.

A SAMPLE of evaporated apples, analysed by Dr. Peter Collier, of the New York Experiment Station, was found to contain in every 1,000 pounds the equivalent of one and one-half pounds of sulphate of zinc, which is a well-known active poison. Dr. Collier says it is reasonable to suppose that the continued use of these dried apples would lead to very serious consequences. This appears like a rebuke to the flippant, careless manner in which some fruitmen, and even horticultural societies, have tried to pass lightly over the action recently taken by the Hamburg (Germany) authorities against American evaporated apples. Our people most interested in this question have hardly thought it worth their earnest consideration, assuming the inconvenient proceeding on the part of our foreign customers to be merely founded upon spite or unfriendliness, and have been showing an inclination to drop all further inquiry. We mention Dr. Collier's discovery to show the urgent need of further and careful investigation of our present methods of evaporating fruits. This should be attended to without delay, and before another evaporating season arrives.—*Popular Gardening.*

 POTATO GROWING vs. APPLE GROWING.

I HAVE been so very busy (as well as absent from home a part of the time), that I had not carefully looked over your June issue until now. First, I want to thank you for the good portrait and notice of Mr. Gibb. When, in the good time coming, true merit is rightly understood, it will be such men, rather than politicians and soldiers, who will have memorial structures erected in their honor

I understand, from what my valued friend Mr. A. A. Wright says, that he thinks I am not just to the apple as a money crop, in placing it no higher than the potato for profit. Of course values vary in different localities and markets, but New England produces many more apples, even of the best grade, than the home market will take, while we import a great many potatoes in some years even from Europe. Careful growers, even so far from cities as I am (236 miles to Boston), can *average* \$50.00 per acre net profit on their potato crop. This is fully as much as we can do on apples, with the drawback that we get a full crop only on alternate years. Of course we have an occasional failure with the potato, but not nearly so often. I sold all my potatoes last year at fifty cents per bushel at the farm, and although it was also a bad year for apples, I did not average as much, taking all

grades, for my apples. A net *profit* of \$50.00 an acre is 200 per cent. on the cost of good potato land at the present low prices of Vermont farms. And yet "farming don't pay."

Newport, Vt.

T. H. HOSKINS.

P.S.—Reading this over I fear you may get the impression that I made \$50.00 per acre on potatoes last season. I got less than half an average crop, and came out just even at fifty cents per bushel. No profit.

T. H. H.

SMALL ORCHARDS.

ONE of the mistakes of the times is the popular belief that everything in a business way must be big. This idea has grown out of our haste to grow wealthy and from superficial calculation, such as, if one acre pays \$100, 100 acres would pay \$10,000, and 1,000 acres would pay \$100,000. Men seldom make such money out of very large orchards, and, while a source of envy to small holders, they are often, in fact, just holding on or running ahead on borrowed capital. The men who make money and get rich out of horticultural pursuits are generally those who do not attempt more than they can look after personally. From ten to eighty acres are the sized tracts which pay the highest per cent. of profit, if they are properly conducted. The idea that a living cannot be made out of a small place has retarded many from going into a business in which they might now be making an independent living. There is a vast amount of waste from one cause or another; the taxes are up, the cost of cultivation is great, and the amount of money invested in machinery, stock, etc., is a considerable item. The fighting of insects and partial or entire failure of a crop upon a very large place means, in many cases, ruin, because the expenditures have been so great and the per cent. of profit so small in proportion that it is difficult to recover from such a blow.

The small holder has correspondingly small expenses, has little trouble on account of incompetent help, and the lost motion is a small consideration. He can superintend the work himself and save the waste. His expenses being much less and the profits much greater in proportion, and the time at his disposal greater, calamities do not fall upon him so heavily. The trouble with many of our fruit growers, who complain of poor prices and hard times, is that they are trying to do entirely too much and are too high-toned to raise in connection with their fruit that which they use daily upon their tables. Many of them have neither a cow, pig-sty, pasture-land, chicken-yard, vegetable garden or berry patch; in fact, they look upon all economical measures as beneath their notice. Everything used in the family or stable must be purchased out of the profits from the fruit, and if there are no profits there is nothing with which to purchase, and the money must be borrowed.

—Anderson (Cal.) *Enterprise*.

🍷 New ◦ or ◦ Little ◦ Known ◦ Fruits 🍷

LETTERS FROM RUSSIA—IV.

THE SAPIEGANKA PEAR OR AUTUMN POLISH BERGAMOTTE.

GIVE in your journal a description of this pear, not on account of any particular prominent qualities which it possesses, but because I am of the opinion that on account of its hardiness it may be successfully grown in Canada.

In its home in Lithuania, old and large trees are met with which have endured many severe winters. In the Tamboff Government it is the most hardy of all pears there grown, and for this reason the Sapieganka, can be positively considered a hardy variety.

The fruit is of middle size, of Bergamot type, the skin is smooth, yellow and has a red cheek on the sunny side. In Lithuania it ripens on the 1st of September, in the Tamboff Government in October, and keeps in the cellar two months. The flavor of the flesh depends upon local conditions, for though it is tasteful enough in the warmer districts, it is sometimes harsh; and when grown in the north it is juicy and buttery. The fruit is adapted for the table, drying and other home uses. This pear is recommended by Russian horticulturists as being adapted for cultivation in market garden.

JAROSLAV NIEMETZ.

Rovoro, Wolinia, Russia.

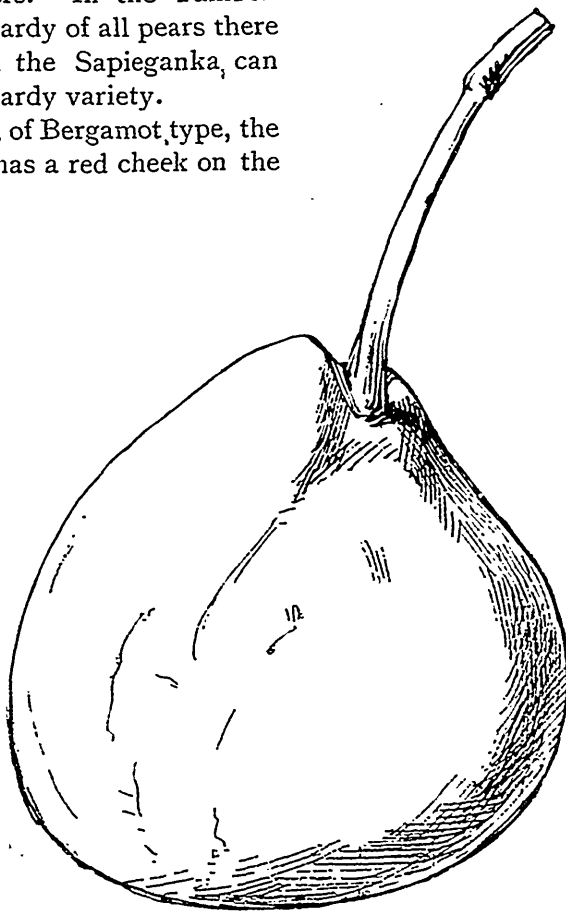


FIG. 57.—THE SAPIEGANKA PEAR.

RED BIETINGHEIMER.

It is with much satisfaction that I am able, after seven or eight years' test, to pronounce this apple iron-clad in Northern New England. It has gone through all the winters unharmed in a single bud, and two, at least, of them were among the severest on record. While the Oldenburgh is productive, handsome and salable, there is decidedly a call for a better dessert fruit among our September apples. The St. Lawrence is a large, handsome and good fruit, but is a shy bearer. The Zolotoreff, among the Russians, is

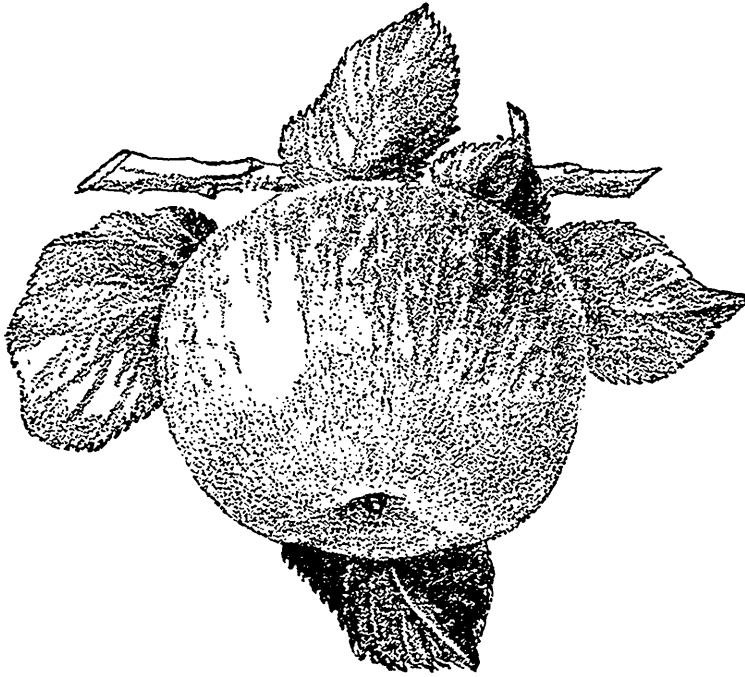


FIG. 58.—RED BIETINGHEIMER.

better than Oldenburgh and quite as handsome, but its ribbed form is against it. The Titus, mentioned last month, is very acceptable, but I am inclined to believe that we shall find the Bietingheimer superior to any of these showy fall apples for market. There is no mistake about the value of large, handsome apples at this season. There is a great call for them at the street stands, on the cars and in the markets. President Barry has strongly championed the merits of this new German candidate for our American suffrages, and withal has treated its Russian rivals rather too scornfully. But we cannot have too many good things, and I take pleasure in hailing this apple as one likely to prove very profitable as a market fruit.—*Dr. Hoskins in Orchard and Garden.*

THE NEWER STRAWBERRIES.

It might be expected that we would make some positive statements regarding the merits of some of the newer strawberries, when it is known that we have some sixty kinds under test at Maplehurst; but the more we experiment the more we find the need of caution about making statements regarding their merits. A new fruit that under certain conditions gives wonderful promise often proves a failure under ordinary conditions.

The JESSIE, for instance, is a magnificent berry, measuring four to five inches in circumference when receiving extraordinary treatment in points of cultivation and manure, but when treated as we usually do our Crescents it is not satisfactory. Allowed to grow in wide, matted rows, with ordinary man-

uring, we find that the first few berries are large and in keeping with its general reputation, but the balance of the crop consists of small, imperfect ones, and the yield is therefore scant.

The BELMONT is a berry of marked characteristics, large, firm and, with high culture, fairly productive. It is one which we would like to test on a larger scale.

The BUBACH appears to be all that is claimed for it, and deserves to be planted on a larger scale and tested in field culture. The June number of *Popular Gardening*

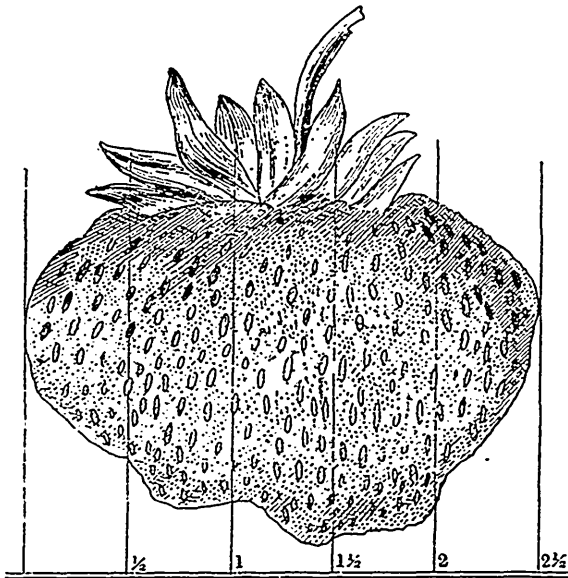


FIG. 59.—THE BUBACH STRAWBERRY. ACTUAL SIZE.

pictures a large sample of this berry which we reproduce. It was grown upon a plant two years of age in moderately fertile soil. It was considered by the grower a remarkably huge berry, but a writer in the July number, says that the Bubach frequently attains the size represented. He says: "The writer this season has picked dozens of just such berries, some of them even larger, and all of immense size."

It is a No. 1 berry for all purposes, and for market there seems as yet nothing to compete with it. It is a most vigorous grower, never rusts or blights, always a good bearer of berries, and seems to succeed everywhere.

Of the many others, such as Michael's Early, Lady Rusk, Great Pacific, Haverland, Warfield, etc., we must decline giving any personal opinion till we

have tried them on a larger scale. We note, however, that at La Salle, according to the journal above mentioned, the Warfield has proved itself a magnificent berry, and is described as being a magnified Wilson, "a great producer of plants, with enormous, healthy foliage and plenty of very large fruit, which has some of the characteristics of the Wilson, such as appearance, texture and flavor."

THE WILLIAMS STRAWBERRY.

AT our meeting at Niagara, a wonderfully fine seedling strawberry was exhibited for name. Samples of the same berry had been sent the secretary by express, about a week previously, by Mr. David Greig, of Cainsville, Ont., accompanied by the following letter :

SIR.—I send you by express to-day a few strawberries as a sample of a local seedling that is creating quite a sensation in this section at present. It was on this place when I purchased it, but its merits did not seem to be much known until last season, when I had it on the Brantford market in quantity; since then the verdict is that it is the coming berry for this section.

It was raised by a Mr. Williams of Brantford township, from Crescent seedling, fertilized by Sharpless. It is an enormous bearer of very large berries, which must be allowed to ripen before picking, or will show a little of the white tips of the male parent. Planted beside the Sharpless on this soil, which is a rich sandy loam, it will yield four times as much in weight of fruit to the acre, and will carry well to a distant market in an ordinary season, but has ripened soft this season from the great rainfall. Grown in the same field with the "Jessie" it gives a much heavier crop, and its berries are quite as large as those of "Jessie" and the plant much hardier and will stand an amount of bad usage that would kill tender varieties.

If you think it worth bringing before your fruit committee, I wish you would do so, and if you would like to test it at Maplehurst I will send you plants in fall or spring. I had a great demand for plants of it this season, but only in this section. I think it should be widely distributed, as I find there is more money in it than in any other variety that I know. It has two names, viz., Williams' Improved and Prince of Orange.

Cainsville, Ont., June 25, 1890.

DAVID GREIG.

The samples were wonderfully fine, being large, of a good high color, firm and well shaped. These would not keep until the meeting so that it was fortunate that a fresh box of them was brought to us at Niagara, by a Mr. Lee, of Virgil, with the same object, viz., a name. No better proof of its good quality is needed than the rapidity with which this boxful disappeared from the table, after judgment had been passed on its merits. The committee, having learned that it had originated with a Mr. Williams, in the township of Burford, decided to name it the Williams, after its originator. The berry is creating a great sensation wherever it is known, and may, after all, be the coming berry so long sought for.

Mr. Greig, writing later under date of the 11th July, says further: "This berry has far exceeded all others for length of season, bearing, heavy cropping, size of berry and fine appearance in the market." And again, in response to enquiry whether the plants could be secured for distribution to our members, he wrote: "I am willing to sell you a sufficient number of the Williams strawberry to give four to each member of the Fruit Growers' Association. Mr. Lee who showed the berries at your summer meeting is

the man of whom I purchased this place in 1887. He took 500 plants from here to Niagara. He had plants from the originator (Williams) to test on this place; so this may be called the home of the Williams strawberry. I am glad it is so highly valued, and would like to see it distributed as it deserves. I think it a great acquisition."

THE GRAPE-FRUIT.

COMPARATIVELY little is known in this country of the grape fruit, or pomelo, which is now rather widely grown in Central America. The pomelo tree is a native of China and Japan, and was first brought to the West Indies, by Captain Shaddock. Thence it was taken to Florida and California where upwards of forty distinct varieties are now in existence. The grape-fruit is of the *Citrus* family and somewhat similar to the orange in appearance, though rather large and coarser. The pomelo can be grown more easily than the orange, and, coming as it does at the close of the orange season, it is in a fair way to becoming popular in the States. The fruit grows in clusters, two, three or four hanging together from the stem, from which peculiarity it has derived the name grape-fruit, by which it is generally known. A comparatively small tree will, it is said, often bear as many as two thousand pomelos at a time. These are cut down in the same manner as oranges, and wrapped separately in tissue paper ready for the market, where they fetch from a penny to sixpence each. The quality varies as much if not more than does that of oranges. Those with smooth, clear skins are considered the best. It is a singular fact that though widely grown in Central America this fruit is not systematically cultivated to any very large extent, many of the trees being planted more for ornament than use. If properly treated, the yield would be much better than it is to-day, and would give a very fair amount of profit to the grower.

JULY STRAWBERRY REPORT OF OLD AND NEW VARIETIES.

EVERY year, in going the rounds of the berry trade, we give away samples of the different varieties to be tasted, commencing with what we judge to be the poorest. Much to our surprise, when we come to what we call superior flavor, they still give the same adjective—"good"—by which to express their judgment. Much chagrined to think that our favorites called forth the same meed of praise as those we esteemed much inferior, we made another effort to elicit stronger praise, and the reward was only "The fact is, they are all good."

It may be that many of our readers think all strawberries are "good," but we want them to know also that some strawberries are *better* than good, and to this end we maintain large trial beds in order that we may report from a personal knowledge of each and every variety.

Every day during the strawberry season we took special notice how all varieties maintained their former reputation—our former opinion of the following still holds good:—Eureka, Mrs. Cleveland, Jessie, Bubach No. 5, the plants are faultless, berries large and plentiful, and suited to the "taste" of the most fastidious.

The next in value are Warfield No. 2, Pearl, Haverland, Daisy, Miami. From correspondence of other strawberry growers, the most of these varieties do well over a large area of our country.

Then there is another class of growers. They are so conservative, they won't plant any variety but those "scraggy" things, such as Wilson, Crescent, Green Prolific and that class of berries worth *two or three cents a box*.

In closing this paper I would recommend the readers of the HORTICULTURIST to try some of all the varieties in this paper; also the Crawford, a seedling of our strawberry friend of that name, it is large and beautiful, and good flavor. There are several seedlings tested here that are worthy of mention, viz., "Saunders," which is being tested in several places; also "Woolverton," these both are tested in Ohio and Michigan Experiment Station and in other places, and the reports of them are very satisfactory.

London's Fifteen, Twenty-two, Thirty-three and Sixty are worthy of testing, especially his Fifteen, it is so large, of good form and flavor, and superior to many, both in plant and fruit. It is now being offered for the patronage of the—well, persons like the *writer*—who enjoy testing every variety of the strawberry to see what they amount to in his own locality.

Some of Townsend's seedlings (not introduced) are very promising here, viz., his No. One, Two, Three, Ten, Nineteen and Twenty.

If spared, in my next "Report" I will give what are my opinions and that of other prominent strawberry growers of the new varieties planted this season.

Granton, Ont., July 14, 1890.

JOHN LITTLE.

* Forestry *

HEIGHT OF TREES.—A SIMPLE WAY TO ASCERTAIN IT.

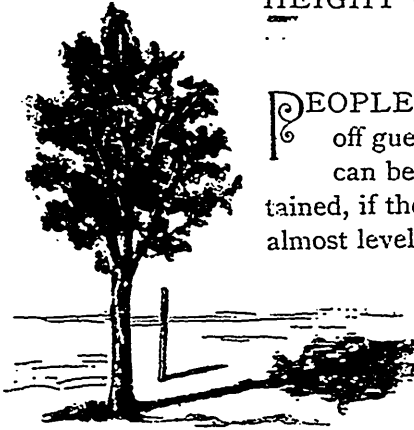


FIG. 60.—MEASURING TREES.

PEOPLE often make incorrect statements and far-off guesses concerning the height of trees. This can be averted and the true measurement ascertained, if the ground in which the tree is growing is almost level and the sun casts a shadow, as shown in the illustration. Measure the shadow from the base of the tree to its tip. Then measure the shadow cast from a vertical ten-foot pole. As many times as the shadow cast from the pole is contained in that cast from the tree, just so high the tree will be. For instance, the pole

is ten feet, its shadow cast in mid-forenoon or mid-afternoon is five feet; and the shadow of the tree, measured at the same time is twenty feet; $20 \div 5 = 4$. This number multiplied by ten, the height of pole, gives forty feet as the height of the tree.

NORWAY AND WHITE SPRUCE.

ROBERT DOUGLAS, the best authority on the subject, claims that our native White Spruce is superior to the Norway Spruce in vitality. After the Norway Spruce has reached the age of thirty years and assumed a grand size it begins to decay, first, by loss of its foliage near the trunk, and which gradually extends towards the extremities of the branches, and then its leader dies, and the annual lateral growth is very small, and the whole tree takes on a rusty, unhealthy appearance, its disfigurement increasing until death ensues.

The White Spruce, *Abies alba*, is a much longer lived tree; it is a slower grower than the Norway Spruce, but continues in vigor long years after the latter has lost all claims to beauty. In planting it is best to group these two trees together in such a manner that a good effect will be retained when, on account of old age, the Norway Spruce shall have been removed.—*Vick's Magazine*.



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

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

RE-PACKING APPLES IN BRITAIN.

MR. A. MCD. ALLAN gave his views at Niagara regarding the possibility of handling our apples in Britain to better advantage than hitherto, by carefully re-packing them before offering them for a sale. His attention had been called to this subject when at the Colonial Exhibition in England. He had seen so many apples arriving "wet and wasty" and selling at a loss. He was of the opinion that by re-packing such fruit in smaller packages they could be sold at a profit to the shipper, where now there was only loss.

By the use of cool chambers on ship-board he believed it would be possible to export even such early apples as the Duchess of Oldenburgh. He doubted whether it would pay to export pears to England, unless in case of unusual scarcity in England, as the pear was an important crop with European fruit growers. The Bartlett pear, as grown in Canada, was a very superior fruit to the same as grown in England.

THE WAGER PEACH.

MR. MORRIS, of Fonthill, states at Niagara that, in his experience, the Wager and the Mountain Rose were the two most profitable peaches to grow in this district for

market. We have had most favorable impressions of the Wager. Last year it was the only kind which was really laden with fruit; and the color is good, and the season just when there are not many fine peaches to compete with it. Still we must withhold opinions until after a longer trial.

SUMMER PRUNING THE RASPBERRY CANES.

A VERY successful grower at Grimsby does not believe in summer pruning the raspberry at all, unless possibly a little pinching of the ends to make them stocky. His plan is, thin out the canes so that each will grow strong and stout, and to do all the pruning in the spring following. At that time he takes his grape pruning shears and shortens the cane down to four or five feet in height, or in case of any injuries showing the presence of the tree cricket, he cuts them off below the point affected. These are then burned and the insect destroyed. He even cuts off all side branches, and depends wholly upon the stout stalk to send out bearing shoots all down its whole length.

The eminent success which he has had in this way inclines us to give his method a thorough trial. His bushes are at this date (July 15th) laden down with their weight of fruit, and he claims that his fruit will be

much larger than if he had encouraged side branches on the growing cane instead of on the bearing cane, as he has done.

In the case of the blackberry, there is no question that the summer pruning is the only plan, both to keep the bushes within bounds, and to make them bushy with an increased quantity of bearing wood. We shall be pleased to publish the experience of other small fruit growers on this subject.

FRUIT ACCOMMODATION AT THE INDUSTRIAL.

We are pleased to learn that, through the instrumentality of one of our directors, Mr. W. E. Wellington, the Industrial Exhibition

Association has agreed to erect a building which is to be devoted entirely to the exhibition of fruit. This will be a great boon to exhibitors, and much increase the interest of the Association in the eyes of horticulturists. Of late years exhibitors of fruit have been much pressed for room, and much of the space, which had been provided for the display of flowers, has been occupied with fruit exhibits, giving the whole show a very crowded appearance. Now, although this is not an abundant fruit season, yet no doubt there will be a large exhibit in this line, and we are glad that the Association is properly estimating the value of the horticultural products.

Question ° Drawer

A BARREN APPLE ORCHARD.

64. SIR,—I have an apple orchard about fifteen years old in the County of Prince Edward, and for some reason it fails to bear fruit in anything like the quantity it should. The soil is rich and deep, the trees are thrifty, and I cannot account for their barrenness. I just came into possession this year, and, on enquiry, I learn that it has never borne to any extent; some of the trees would be the better of trimming, but I do not think that trimming would make them fruitful, as some of the trees are trimmed and in good shape, and yet unfruitful. What do you advise?—P. A. M., *Odessa, Ont.*

Since our correspondent gives us so very few of the conditions, it is impossible to give a positive reply. Very often an apple orchard which has been highly cultivated and manured spends all its strength in making wood growth, and it is only upon receiving a check of some kind that fruitfulness will result; this is frequently the case with young orchards, even up to the age of twelve or fifteen years. We would advise, in such a case, seeding down the land to clover for a few years, withholding barn-yard manure and giving the trees about half a bushel of wood ashes a year, not near their trunks, but

spread broadcast as far as their limbs extend.

There are other causes of barrenness such as an enfeebled condition of trees from long continued neglect of cultivation, of manure, and of pruning. The bark-louse is sucking the life out of many of our orchards, and the borer is tunnelling their trunks. Besides some varieties, such as the Baldwin, have been subject to some sort of fungus disease, or blight, which has made them unfruitful.

GRAPE VINE EXCRESCENCES.

65. SIR,—I have met with the Knot on the grapes. I shall inspect for this further. I send you some samples which I have taken off of vines. The Champion is the most susceptible so far as I have learned. Two gentlemen say it is a fungus, positively; one of them says he has cultivated grapes for twenty years, and has seen it for years, and always cuts it at once; he further says he does not fear it as it is nothing like the Plum Knot.—J. M. DENTON, *London, Ont.*

A year ago large pieces of grape vines, affected similarly as this sample, were sent in to this office by Mr. George Fisher, Freeman, who had also corresponded with Prof. Fletcher, of the Experimental Farm, con-

cerning them. It appears that it is not a fungus at all, but a disease, due to climatic influences which has been long known by French vineyardists. In Bulletin 8 of the Botanical division of the U. S. Department of Agriculture, we find the following description of it:—

This is a disease which the French have named *Broussins*, the Germans *Krebs*, and the Italians *Malattia dei tubercoli*. The first name, "Broussins," meaning excrescences, is descriptive of the disease, and is the one we will adopt. Prof. Viala, in his work on the *Maladies de la Vigne*, pp. 441, 442, has clearly described the disease in question. His description is very complete, and the cause to which he attributes the malady appears most reasonable, and we cannot do better than to translate in full what he has written:

"Under the action of the frosts of autumn and winter, and especially those of spring, peculiar malformations are developed upon the roots, the root crown, the side branches and the shoots left after pruning. Upon the roots they appear as little nodules the size of a pea, more rarely as large as an egg, which are soft and spongy when moist, but firm and hard when dry. They have a warty surface, being formed of smaller nodules, which run together where they unite with the root. Upon grafts the adjacent layers of generative tissues sometimes multiply to an unusual extent, giving rise to a spongy swelling, having the form of Broussins. But it is especially upon the young branches and side shoots that these formations are most frequent. '*Broussins*' usually appears at the insertion of the shoots upon the side branches, but they also occur over the whole length of the inter-node or even several successive nodes, entirely changing their normal appearance. There are formed several masses of irregular excrescences composed of a large number of shapeless nodules. The wood thus covered is often enlarged to four or five times its proper diameter. The bark is torn and often stretched in narrow strips over the irregular groups of nodules. The latter are soft and spongy, but become very hard when dry."

BARREN STRAWBERRY PLANTS.

66. SIR,—In the year 1887 I bought one dozen strawberry plants, the Itaska and Jessie kinds. I planted and secured all the plants possible from them. In the fall I had about one hundred plants which I set out; they grew, and I had a fine bed of them, but no fruit. My soil is a clay loam, well cultivated. I applied plenty of wood ashes, but no use. Please say what is the reason? I am sending you a sample of what they are at present; they stand full of bloom; ought to have one hundred quarts off this bed. Please answer in the next HORTICULTURIST number.—J. GARTON, *Toronto, June 21, 1890.*

We fear there is a tendency with the Jessie to become unfruitful after the first year of bearing. Will any of our readers give their views?—(Ed.).

THE FOUR-STRIPED PLANT-BUG.

67. SIR,—Enclosed find some striped flies that are destroying all my currant bushes, and in fact nearly everything in the garden. The leaves of the currant and gooseberry bushes look as if a fire had passed over them. I think they had first attacked the Spearmint. They are also very bad on the sunflowers, and were even on a few hills of potatoes that were near the currants.

Do you know what they are, and what would be best to use to get rid of them?—W. S. SHORT, *722 York Street, London.*

These insects have come to hand in good order, and been mounted for our cabinet. Scientifically they are known as *Poecilopapsus lineatus*, and are thus spoken of in Prof. Saunder's work on "Insects Injurious to Fruits:" This is a bright yellow bug, about three-tenths of an inch long, with black antennae and two black stripes on each side of its wing covers, the outer one on each side terminating in a black dot. It punctures the young leaves of the currant bushes on both their under and their upper surfaces, causing small brown spots, not much larger than pin-heads, but these are sometimes so numerous and closely placed that the leaves become completely withered. The insects are very active, and when approached drop quickly to the ground or fly away. They begin to feed in May or June, and continue for a month or two, often disfiguring the bushes very much and retarding their growth. When very troublesome

they may be captured by visiting the bushes very early in the morning, and while torpid with cold brushing them off into a pail partly filled with water, on which a little coal oil has been poured.

THE RED RUSSET.

68. SIR.—Will you kindly inform me through the *HORTICULTURIST* if you know any parties who grow the Red Russet. We are trying to introduce it here. It originated on the farm of Mr. Sanborn, Hampton Falls, N.H. It is a very vigorous tree, upright, spreading and productive. Young wood, clear reddish brown fruit, large, roundish conic yellow shaded, with dull red and deep carmine in the sun, and thickly covered with grey dots, with a slight appearance of rough russet on most of the surface, stalk rather short and thick, inserted in medium cavity surrounded with russet calyx nearly closed; segments, long recurved in a narrow uneven basin. Flesh, yellow, solid, crisp, tender, with an excellent rich sub-acid flavor, somewhat resembling Baldwin. Very good, January to April.—Yours truly, F. S. FAIRFIELD, *Orono, Ont.*

We have been growing the Red Russet apple for some years at Maplehurst, and have found it a satisfactory apple for dessert purposes. The tree is a good bearer, though somewhat more subject to the borer than some other varieties. The fruit is seldom affected by scab, and is usually of even size and an especial favorite as an eating apple.

SALT AS A FERTILIZER OR FUNGICIDE.

69. SIR.—Will you please inform me as to the effect salt would have sown now broadcast in a vineyard. Whether it would act as a preventive of mildew? If so, in what quantity should it be used per acre?

Some of my neighbors have used sulphur, but the results have not been satisfactory.

Please answer as soon as convenient, as the disease has already made its appearance.—J. H. P., *Niagara Falls South.*

As a fertilizer, salt has no direct value as soda is not an essential element in plant growth. Indirectly, however, it does act upon plant growth, and chemists explain it by saying that it effects the decomposition of substances already present in the soil, as, for instance, lime and magnesia. They tell

us further that salt and lime react upon one another in the presence of porous bodies, forming carbonate of soda which is very efficacious in promoting the decay of humus. In the case of asparagus, salt may be used to good advantage as a fertilizer, though on the other hand some plants are injured by it.

Whether it would act as a preventive of mildew is an open question, as we have neither our own experience nor that of others on which to base any conclusions. Strong brine is destructive to many fungi when placed in contact with them, but how it could be used for this purpose on the grape vine we do not see, neither do we believe that it would be of any value.

As to the quantity that may be used, it should not be applied more heavily than at the rate of five or six hundred pounds to the acre.

Powdered sulphur is the best known remedy for the powdery mildew of the grape. Its effectiveness consists in the fact that at a certain temperature the flowers of sulphur emit fumes which are destructive to the powdery mildew. These fumes are formed most rapidly, when the temperature is above 77 degrees Fabr. Where the mildew is very serious, several applications need to be made during the season. It is not necessary that it should be applied directly to the affected berries, but if sown upon the ground under the vines it will suffice.

GIRDLING THE GRAPE VINE.

70. SIR.—On page 199 of the July number of the *HORTICULTURIST*, a paper is published on the "Girdling of the Grape Vine"; before doing anything in the matter I want more light on the subject—now, whether is the girdling done by cutting into the bark with a knife or by tying something around the vine—if the operation is done by cutting into the bark, should it be done any deeper than the outer bark, and if done by tying, of what material is it to be done? In northern Ontario, if girdling can be done safely without injury to the vine, it will be of great advantage. Kindly favor me with a reply at your earliest convenience.—JAS. ROSAMOND, *Almonte, July 14, 1890.*

The operation of girdling the grape vine may be done either by removing a ring of

bark or by some ligature wound around it. The former is the usual method. It consists simply of removing a ring of bark from half to three-quarters of an inch in width not simply the outer bark but the inner also, to the wood. The sap is thus prevented from returning, and, as a result, the fruit grows to a larger size and ripens earlier.

It has been found simpler, however, to cut small pieces of wire and fasten these tightly about those fruiting branches which are to be removed at the next pruning season. This can be best done by means of a good pair of pincers.

Girdling of the vine, to be effective, should be performed early in the month of July.

PARIS GREEN vs. LONDON PURPLE.

71. SIR,—Please state in the next issue of *HORTICULTURIST* the relative merits of London purple and Paris green as insecticides, which is the more safe and reliable? Can some of your experienced members tell how soon after spraying fruit trees a rain would render the work non-effective, and what quantity of rain? Would merely enough to drip from the trees be enough?—JOHN KILLAM, *North Kingston, N.S.*

Both these poisons owe their effectiveness to the arsenic that enters into their composition. The London purple is cheaper and

somewhat more soluble in water, but being a refuse product from the manufacture of aniline dyes, it is very inconstant in its composition. The Paris green, on the other hand, if pure, can be relied upon as containing a constant proportion of arsenic. For this reason it is generally considered preferable for use in the orchard.

Since the Paris green is insoluble in water and is only kept in suspension by constant stirring, it is deposited upon the fruit trees in small particles by means of the spraying. A good rain, therefore, would wash it to the ground.

RICHARDIA OFFSHOOTS.

72. SIR,—I received in due time the lily bulb and immediately set it in rich earth. It has developed seven separate stalks about seven inches in height, six of which have the dotted leaf and the other plain green. They appear to be too crowded to do well. Should any of them be detached and set out separately, or are they intended to remain in a cluster?—D. G. CAMERON, *Strabanc, Ont.*

It would be better not to disturb your *Richardia Lily* during the summer by removing the offshoots. In the autumn the foliage will die off, and at that time or in the spring they may be the more safely removed. Each of these suckers will then form a new plant.

Open Letters

HARD LINES.

SIR,—With pleasure I renew my subscription for C. H. I enjoy the reading of it. The article by P.E. Bucke on the Raspberry is too highly colored, rocts. per quart is more the go. I am pleased to see the set back given to Mr. John Donaldson on the Gravenstein. I have a farmer friend here that can believe little he sees in our journal, on account of such high colored statements as have been published concerning the profits to be made on fruit. He says the whole lot of you have fruit trees to sell. I think if you spoke oftener of wages to be earned, instead of profit, it would be better. Farmers around here cannot make fair wages. Your letter to me, dated April 29, 1889, is before me, in which you say you are sorry I should have left a good trade to engage in fruit culture. I know of no good trade nowadays; machinery has ruined most

trades. Take a man with a family of five or six children, with nine or ten dollars per week, and he never knows when he is going to do a week's work. Some part of the machinery breaks down, engine driver takes sick, your family sick, or you may be a half minute behind the bell in the morning at seven o'clock, that means lose one hour, you are put on short time and fifteen per cent. reduction of wages at the same time. You close down for seven weeks at a stretch, you have tools to buy, Sick Benefit Society dues to pay, etc. You will see there is not much left to live on after rent and fuel. I worked nearly ten years at London furniture factory, never had three holidays in the time, worked all spare time in garden or on my shanty, never smoked or drank and lived economically on brown bread, rice, oatmeal, fruit and vegetables. I do the same now, only the struggle for existence is harder still, for work is scarce and produce cheap.—L. P., *Whitchurch, Ont.*

* Our • Book • Table * * * * * *

BOOKS.

HOW TO MAKE THE GARDEN PAY is the title of a new book issued during the present year by Mr. William Henry Maule, of Philadelphia. A copy of this work was presented to us by the author, Mr. T. Greiner, at our Summer Meeting at Niagara. It is got up in the most attractive style, full of illustrations, and deals with such subjects as the following in an interesting and practical manner: "Farmer's Kitchen Garden," "Success in Market Gardening," "Manures for the Garden," "Hot-beds," "Forcing Houses," "Early Plants for the Home Garden," "Insect Enemies and Fungus Diseases," "Seed Sowing," "Cultural Directions for the Growth of the Various Kinds of Vegetables," etc., etc.

This work appears to be one of special value. It is more and more evident that more money can be made out of the garden than out of the farm, if one thoroughly understands how to manage it. We can commend this work to all gardeners.

ANNALS OF HORTICULTURE IN NORTH AMERICA for the year 1889, a witness of passing events and a record of progress, by L. H. Bailey, Ithaca, N.M.

The appearance of two such works as "The Horticulturist's Rule Book" and "Annals of Horticulture" in one year prove their author to be a man of great industry as well as great ability, for although both are to a certain extent compilations, yet no one who does not himself thoroughly understand the matter, can make a compilation that will be really valuable. The Horticulturist's Rule Book is one that will be of constant use to the fruit grower in his practical work, while the Annals of Horticulture is of special value to the horticultural student. The price of the books, bound in cloth, is \$1.00; in paper, 60 cents.

REPORTS AND PAMPHLETS.

NEW YORK AGRICULTURAL STATION, eighth annual report, 1889, Peter Collier, Director. REPORT OF THE AGRICULTURAL STATION OF THE UNIVERSITY OF CALIFORNIA, by E. W. Hilgard, Director, Sacramento, 1890. CALENDAR OF QUEEN'S UNIVERSITY, Kingston, Ont., year 1890-1891. TORONTO INDUSTRIAL EXHIBITION, September 8th to 20th, 1890. Prize list. H. J. Hill, Toronto, Manager and Secretary. SUMMER RESORTS reached by the Grand Trunk Railway. Season of 890. Compliments of William Edgar, General Passenger Agent, G.T.R.

CLOUDS.

(8) H, beautiful clouds with fleecy wing!
What pleasure ye to my memory bring
As I watch you in the azure skies
With uplifted spell-bound eyes.

Till, in fancy inspired, I upward soar
To a phantom ship, by a golden shore,
And sail o'er a beautiful ether sea,
Where the "White Island of the blest" may be.

On mountain side, I've sat for hours
Gazing on palaces and towers,
Sapphire thrones of beauty rare,
And grim old "castles in the air."

Till the spirit of a storm sublime
Drove ethereal warblers from my clime;
Threw a pall o'er my outward being,
And all my air-borne inward seeing.

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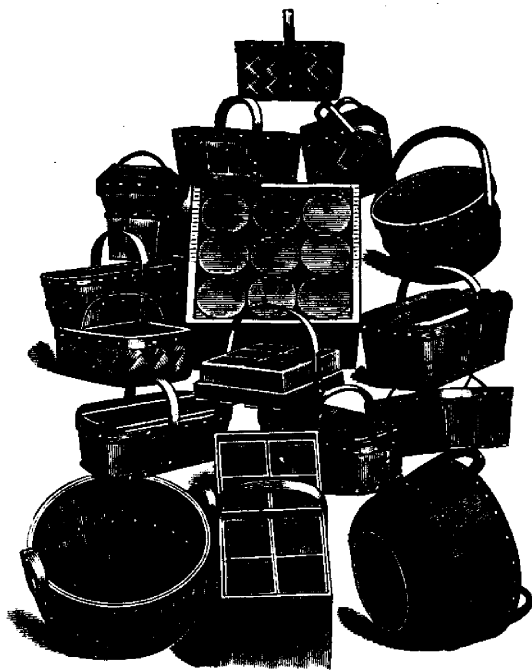
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Back numbers will be furnished from January, and the report for 1889, which is in hand, will be mailed to each as soon as the subscription is received.

Address,

L. WOOLVERTON,

Editor Canadian Horticulturist.

1890

1890

TENTH ANNUAL CIRCULAR
OF THE
NIAGARA DISTRICT
Fruit Growers' Stock Co.
(LIMITED).

IN presenting you with the Company's Tenth Annual Circular we take this opportunity of thanking you for the liberal patronage extended to us in the past, and would most respectfully solicit a continuance of your shipments to our Agents this season.

We beg to apologize for the delay in issuing this season's circular, which delay was caused partly by the reorganization of the Company, through which the Company has more than doubled its number of stockholders, thereby largely increasing the stability of an institution which has always been admitted by the Fruit Growers of our province to be one of the most reliable and beneficial institutions yet established. We have already added one additional agency to our list, viz., Kingston, with a prospect of establishing one in Winnipeg if the fruit crops (which have not up to the present time maintained the promise of a few weeks ago) of the present season will warrant the Company in doing so. It is one of the prime objects of our Company, by establishing so many agencies, to cause the distribution of our fruits over as large an area as possible, thereby preventing "gluts" in our principal markets and maintaining prices.

The usual commission of ten per cent. for selling will be charged by the Company, and cheques will be issued every two weeks (or more frequently if desired) on the Imperial Bank, St. Catharines. To avoid errors and unnecessary delays in rendering "Sales Accounts," please write your Name and Post Office Address plainly upon each tag, and mark the number of packages in each shipment to each agency. Any shipper wishing to use a number instead of his name can do so by notifying the Secretary, who will forthwith allot him one.

We learn that some fruit growers and shippers have a wrong idea in reference to our Company, believing that only Members of the Company or Stockholders have a right to consign fruit to our agents, or that permission has to be obtained from the Company to consign to them. Now we would say, for the information of such, that no such requirements are necessary. We solicit consignments from all shippers, and would be pleased to make every fruit grower and shipper a patron, promising on our part to use every endeavor to handle promptly and carefully all consignments and to render Account Sales with the least possible delay.

The Agencies of the present season are well equipped for doing a large business in a most satisfactory manner. Our agents are all experienced men, capable of filling the positions they occupy, as a glance at the following list of Agents will substantiate.

LIST OF AGENTS, AND AGENCIES NOW OPEN.

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Shipping tags for all or any of the above agencies supplied free of charge upon application to the secretary or to any of the directors. A supply can also be had from any of the following stockholders, viz.: E. D. Smith, G. W. Cline, Winona; A. M. Smith, Roland Gregory, W. H. Bunting, J. H. Broderick, Andrew Haynes, St. Catharines; at express office, Winona; J. M. Clement's store, town of Niagara; INDEPENDENT Office, Grimsby; Express Office, Beamsville,

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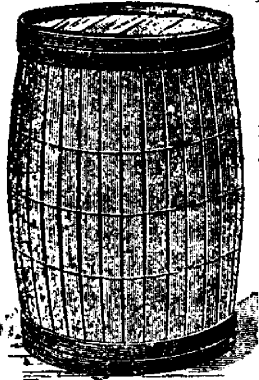
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