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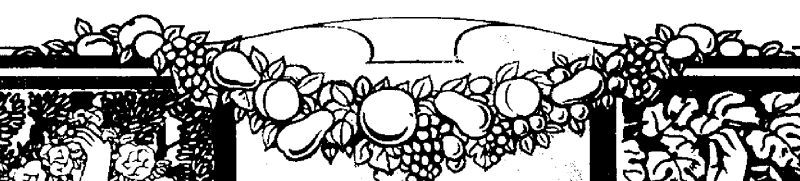
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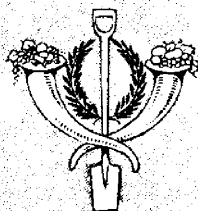
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THE CANADIAN HORTICULTURIST



A JOURNAL
DEVOTED TO
FRUITS
AND
FLOWERS



EDITED BY
L. WOOLVERTON, M.A.
GRIMSBY, ONT.

PUBLISHED MONTHLY BY THE ONTARIO FRUIT GROWERS' ASSOCIATION.

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GARDEN OF BOBOLI, FLORENCE.

THE CANADIAN HORTICULTURIST.

VOL. XXII.

1899.

No. 9



SOME GARDENS OF ENCHANTMENT AND RENOWN.

"Nebassar's Queen

Fatigued with Babylonia's level plains
Sighed for her Median home, where Nature's
hand

Had scooped the vale and clothed the mountain
side

With many a verdant wood; nor long she pined
Till that uxorious monarch called on Art
To rival Nature's sweet variety.

Forthwith two hundred thousand slaves up-
rear'd

This hill—egregious work, rich fruit o'erhung
The sloping vales and odorous shrubs entwine
Their undulating branches.



SOME time between 590 and 561 B.C., would seem to have been the most probable date of the erection of the famous Hanging Gardens of Babylon. (Fig. 1639.) The lowest stage of these gardens covered between three and four acres. It is not known what their height was. Two ancient writers agree in making their height that of the walls of Babylon, but there is much difference

of opinion as to what the height of these latter were. According to the lowest calculation found in the pages of ancient writers they were seventy-five feet high. Whilst this estimate was probably much too moderate we must consider the statement of Herodotus, that they were 360 feet in height, an exaggeration. The mound Babel, which of late years has come to be generally considered their wreck, is still 140 feet high, though for centuries it has been used as a quarry by the Arabs.

As to the general external appearance of the structure there seems to be two main opinions. One that it was like a lofty, wooded pyramid with several terraces, each smaller than the one below; the other, that as in the Roman amphitheatre, the several tiers of arches were so built that the line of the outer wall from base to summit was perpendicular. All seem now of the opinion that arches



FIG. 1639.—HANGING GARDENS OF BABYLON.
(Attempt at reconstruction.)

of brick formed the main support of the building. Probably some use was made of piers and columns too. Flights of stairs led to the summit of the building. Each flat contained stately apartments for all sorts of purposes. The walls of these were perhaps adorned with color glories—battle and hunting scenes glowing in yellow, red, brown, and blue. A great mass of earth covered the top of the terraces. When this soil was laid even and smooth it was planted with trees, shrubs and flowers,

“And then were gardens bright with sinuous
rills,
Where blossomed many an incense-bearing tree,
And forests ancient as the hills.”

Not inappropriate as at first sight, would seem is the comparison of this plantation, in its later days at least, to a primeval

forest. Quintus Curtius asserts that some of the trees grew to be more than twelve feet in diameter. In the days of Amyitis the trees must have been smaller, but the ground was probably more profusely decked with flowers. Aromatic plants most likely grew there, and if the native flora of the country was not denied a place among the vegetable novelties from abroad, the date palm with its crown of splendid leaves and charming amber clusters of fruit hanging down several feet in length, adorned the slopes. The pomegranate with its scarlet flowers, the graceful acacia, the mournful willow, the long feathery rods of the tamarisk, the cone-like cypress, the orange and the apple tree, very likely brightened its groves. In the burning climate of the country, the shade and cool-

ness of the place was delicious. The water for the gardens was supplied from a canal from the Euphrates, and was raised by a screw hidden away in a room within the structure. Mr. Rassam a few years ago found, at the mound Babel, four “exquisitely built granite wells,” still some 140 feet high, which he concludes were the pipes used in irrigating the Hanging gardens. Huge rocks were elevated to the gardens to give a mountain like appearance.

Passing on to Roman times we find that this iron race delighted in their gardens, to show their mastery over nature by a display of engineering skill. Lucullus suspended hills upon vast tunnels and brought in the sea for moats and

SOME GARDENS OF ENCHANTMENT AND RENOWN.

fish ponds in the making of his pleasure grounds. Reproached by a stern moralist of the age for his degenerate indulgence in the luxury of a house for summer as well as a winter residence, this celebrity smilingly replied, "Do you think me less provident than the storks and cranes who have their summer abodes, as well as those suited for the cold weather." The Topiarian art or the clipping of trees and hedges into representations of birds, beasts, vases, and even fleets of ships was another characteristic of the gardening of this age. The Emperor Hadrian's villa with its grounds some seven miles in circumference was perhaps the most ambitious of Roman gardens. In one part of this park was an imitation of the lovely vale of Tempe in Greece, whilst another portion was designed to represent the lower regions described by the poet Vergil.

During the dark ages garden craft had to find its home in the monasteries. Beauty had to be sacrificed to military ends in the mediæval castle, and there was little room within its walls for such a luxury as a garden. When the use of cannon rendered the walls of these strongholds useless, they were replaced by princely mansions and villas, with an ample setting of garden charms. The gardening art blossomed forth anew in the 15th and 16th centuries in the Italian cities, now treasuries of vast wealth, whose princes and cardinals found in this a congenial outlet for the display of their riches. Our frontispiece, taken from an old Italian engraving, represents part of the Boboli gardens laid out about the year 1550, at Florence. The quaint looking screens that figure so prominently in this are cut in greenery, and the tall spire-like trees marshalled in formal lines in the back ground, are not Lombardy poplars as

we of this country would be likely to suppose, but cypress trees.

The Italians took great pains to make their gardens harmonize with the architecture of their palaces. The garden was a suite of open air apartments as much a part of the home as the house itself. The main features of the grounds were the terrace, the grove, the fountains, the reservoirs and the flower garden. They were places of greenery and water, commanding splendid views, for they usually nestled against a hill side. The English horticulturist Evelyn, visiting Boboli in the 17th century, says that there was much topiary work there, and that he saw there a rose grafted on an orange tree.

Splendid gardens were not found in this age in the old world only, but if we can give any credence to the very doubtful authority of Spanish waters of the time on our own continent also. These authors may have drawn very largely on their own imagination when they described the glories of the Coricancha, or Place of gold, the magnificent temple of the Sun at Cuzco, in Peru. The gleam of the soil of the garden there, in the rays of a tropical sun, must have been dazzling, for it was composed with small pieces of fine gold. The graceful stem leaves and tassels of Indian corn were imitated here in gold, the plants rooted so firmly that the strong winds prevalent there could not loosen them. Other plants with leaves of silver, and flowers of gold figured in some gardens of Peru, and doubtless were to be seen here. A flock of twenty sheep of pure gold was grazing in this fairyland, and the shepherds guarding them were of the same bright metal.

Illustration Fig. 1640 is of a labyrinth, which up to the year 1775, existed in the gardens of Versailles in France. The



FIG. 1640.—ANCIENT LABYRINTH IN THE GARDEN AT VERSAILLES.

winding path was flanked on either side with grotesque imitations of animals intended to represent the beasts of Aesop's fables. The gardens of Versailles were extremely formal in character. They still exist, but modern critics who have written disparagingly of them should remember that to form a just idea of their merits they should have been seen when thronged with all the splendid life of the court of the Grand Monarque Louis XIV. They were admirably adapted to the purpose for which they were to be used drawing-rooms for summer days for the gaily clad courtiers and ladies. Ten thousand people lived in the palace, so the lawns could seldom have been deserted. Versailles was entirely the creation of Louis XIV. If he did not "make the desert smile," he at all events through his gardener, Le Notre, turned a pestilent marsh into a superb pleasure ground. He was extremely fond of gardening, and at some periods of the year spent whole days in watching and superintending work in his gardens and his different buildings, and took as much interest in the minute

detail of direction as if he had been a landscape artist or an architect. The cost of the palace and park of Versailles according to Voltaire's estimate, now considered the calculation most nearly approaching the truth, was something like one hundred millions of dollars, and to this must be added the worth of the labor given by the peasants, who were forced under the law of the corvée to toil without any pay. At Versailles and its adjoining parks of Trianon and Marly, there were at one time employed no less than 22,000 men and 6,000 horses.

The making of Versailles was a tragedy. A diary of a French notable contains, under date of 31st May, 1685, the following entry. "There are now more than 36,000 peasants at work in and



FIG. 1641.—LOUIS XIV.—From a rare portrait in the Archives at Ottawa.

about Versailles for the King. The half-starved and half-clad wretches die by dozens under the strain of the cruel tasks imposed on them." In October of 1687, Madame de Sevigné wrote as

SOME GARDENS OF ENCHANTMENT AND RENOWN.

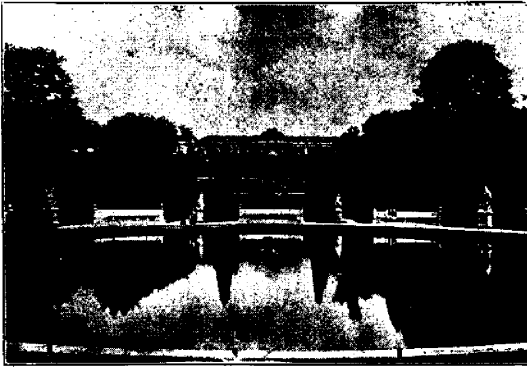


FIG. 1642.—THE GARDENS AT SAN SOUCI, GERMANY.

follows: "The King wished to spend Saturday at Versailles, but it seemed as if Providence willed that he should not, for the buildings are in no condition to receive him, and there is a prodigious mortality of workmen so that carts full of the dead are carried off every night as they are from the Hotel Dieu, (a famous hospital.)" In contrast to this dark picture of a tyrant's oppression, we would place the story of the old wind-mill at Sans Souci the garden represented in our next cut, which shows royalty in a brighter light. This famous wind-mill stands close in the rear of the palace erected by Frederick the Great of Prussia, and still belongs to the descendants of the sturdy miller who refused to surrender it to that monarch when the latter wanted to pull it down, and include the site in his own gardens. The original mill was a very small one, but Frederick having lost his lawsuit with the miller, with great generosity built a larger mill for his opponent. More than a

century later the owner was forced by adversity to think of selling the property and offered it to King William. The Crown still generous, settled on the owner of the mill a sum sufficient to maintain him on his property.

Our last cut is of a landscape garden in Japan. The Japanese are very successful in making in their gardens imitations on a small scale of natural scenery. Miniature mountains, lakes and dwarf trees figure in their com-

positions. A famous and novel conception is the gardens of a Buddhist ecclesiastic which illustrates the legend of the nodding stones which bowed down to the earth when they heard the words of the Monk Daito, an early missionary of the Buddhist religion. Some Japanese gardens such as Ginkakuji, or Silver Pavilion and Kinkakuji, or the Golden Pavilion are some three or four hundred years old. One will see there trees a century old not more than a foot high, and many other sights strange to Western eyes.

Maplehurst.

A. E. MICKLE.



FIG. 1643.—A JAPANESE GARDEN.

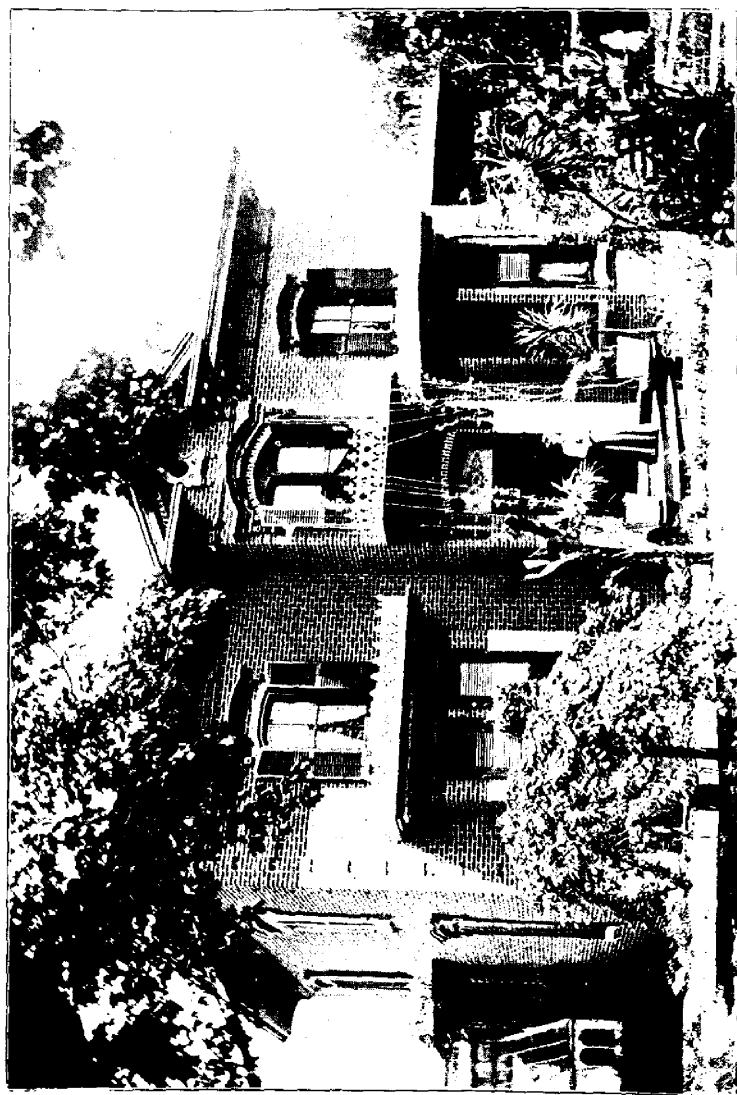


FIG. 1644 — RESIDENCE OF H. H. BURNHAM, ESQ., PORT HOPE.
(Front View) Photographed by A. Purshaw.

A TOWN RESIDENCE.

PORT HOPE with its diversity of hill and dale, its meandering stream and its inclining streets with their wealth of shade trees on either side, has many fine residences and grounds. One of the most attractive of these, and the most observed, perhaps, because situated on the main street of the town, and only three minutes' walk from the central business portion, is the residence of H. H. Burnham, Esq., the President of the Port Hope Horticultural Society.

Because so situated, the grounds, though by no means contracted, are not so extensive as they would have been had they been more suburban, but the best has been made of every yard of space. In fact, Mrs. Burnham, to whose fine taste, artistic skill, assidu-

ous attention, and passionate love of flowers the grounds and house surroundings owe their beauty, has successfully solved the problem of garden decoration. By a well planned arrangement of walks, terraces, lawn space, parterres, and statuary—here a group of cacti, there a mass of bloom, here a creeper, there a climber, here wild bushes and a bank of ferns, there well trimmed shrubs, here a basket, there a vase, and taste and beauty everywhere—this villa attracts the attention and delights the eye of every passer-by. Seen by hundreds every day it no doubt exerts a silent influence in the interests of horticulture, which it would be hard to over-estimate.

A. PURSLOW, *Port Hope.*

PRINCIPLES OF PRUNING SHRUBS

AS FORMULATED BY MR. CHARLES BALTET.

1.—Prune when dormant plants of those species which flower during the growing season on the young, herbaceous shoots. This is Winter Pruning, or Dry Pruning.

2.—Prune in full growth, as soon as the flowering period ends, the plants of those species which, when the sap starts, expand their flowers on the branches of the year or older ones. This is Summer Pruning, or Green Pruning.

In both cases the desired end is that the floral elements shall come well constituted at the blooming epoch. Summer pinching or shortening strengthens, or causes to branch, the long shoots which should flower in winter or the following spring, and thus increase the show of flowers.

Pruning is long when more wood is left on the plant, short when more is cut away, combined if the two operations are applied at the time on the same shrub, a system preferable to alternating.

Without rules to follow, long pruning or the absence of pruning should be preferable to exaggerated mutilations. Everywhere and always the trimming of trees and shrubs is recommended by thinning the branches that grow too dense, their rejuvenation by the suppression of old, sterile, wornout stems, and replacing them with vigorous shoots, and, finally, the cares of neatness, clearing away scaly or mossy bark, the suppression of dead wood, broken pieces, suckers and the withered remains of flowers.



FIG. 1615. RESIDENCE OF H. H. BUSHAW, ESQ., PORT HOPKINS. (SIDE VIEW)

NOTES ON THE GRIMSBY FRUIT DISTRICT.

TO the enthusiast in horticulture the Niagara district offers an endless variety and an almost inexhaustible field of interest. Especially is this true when the enthusiast is less favored than the fortunate dwellers of our sunny vineyards and happens to be a dweller in the north. To one of the latter who drops in upon you perhaps only once a year, or less, the progress you are making in your methods of cultivation, and general advancement as a fruit district, are much more noticeable than to one of yourselves who are engaged in the operation. I, for example, can see great changes for the better every successive visit I make to your district. If competition be the life of trade in commercial lines, so must competition and the spirit of rivalry tend to greater perfection in the operation of fruit culture. Only a few years ago there were conspicuously but a few model fruit farms and farmers between Hamilton and St. Catharines. Now there are many, and their number is increasing every year. There are yet a number of laggards to be seen, but the discriminating competition in the fruit markets must in time drive them, if the spirit of rivalry does not shame them into better and more progressive methods.

Last December while making a visit to my old friend Mr. M. Pettit and his family and marking the great improvement which he had made in his fine fruit farm in the course of three or four years, I visited especially the home of Mr. W. M. Orr to note his methods of fall cultivation in the several departments of his farm. A few weeks ago I made a second visit to observe, as far as they would show, the result. Mr. Orr is among the most systematic and

thorough fruit farmers on the Grimsby road, but to a novice it is not easy to see how a beginner could adopt his methods and follow them until returns began to come in without considerable capital to start with. Mr. Orr does not demand two crops from his land at the same time, nor does he believe in taking anything from the land during the years in which the orchard is in its preparatory stage, whether it be in peaches, pears, plums or apples; but on the contrary he believes in cultivating and feeding the soil from the time the trees are planted without taking any crop from it till the trees are in bearing. This belief he puts into practice, for we noticed on his farm orchard plots of both plum and pear trees two years, three years and so on up to thirteen years, all treated after the same fashion.

Last fall Mr. Orr had nearly all his plots covered with a growth of rape. This served to arrest the leaves as they fell from the trees and they helped to thicken the covering. This covering Mr. Orr claimed protected the roots of the trees during the winter, besides acting as a mulch for the soil, and was ploughed under early in the spring. This ploughing was followed by a sowing of crimson clover, or some other green crop to be turned under early in the fall and treated as before. Mr. Orr is firm in his belief that the trees, in the increased quantity and superior quality of their fruit, pay for all this preparation after they come into bearing, and in a very few years more than make up the value of any root or other crop that might have been taken off the land. I stated in the *HORTICULTURIST* two years ago that the finest samples of plums that came into the northern market came from the farm of Mr. Orr, and

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looking over his farm this season I am convinced that his methods of cultivation and care of his trees has much to do with it. Besides the labor that he puts upon the soil Mr. Orr gives due attention to washing, pruning and spraying his trees, and I never saw anything look finer or cleaner than all his orchard plots did a few weeks ago. All his plum trees six years planted, and from that to thirteen years and over, were as full as they could bear; and a young pear orchard five years planted, treated as above and looking fully as well as the plums, Mr. Orr says is already giving a fair return for labor and land value. One thing is certain that Mr. Orr has his farm as clean as it can be; is giving it a thorough system of cultivation and is taking nothing from it but his fruit crop. As to how well and how much the latter pays for expense, labor, and land value, and at what age the trees begin to pay a fair equivalent, and at what ratio they increase from the paying point, Mr. Orr alone may be able to say.

Another matter of interest on Mr.

Orr's farm is his apple orchard planted on the mountain side where cultivation is impossible. Here the trees seemed to thrive well enough but did not appear to be bearing very well. The under growth I suggested might be against them and we thought the situation an ideal one for sheep grazing. Mr. S. D. Woodward, of Lockport, places great value upon sheep in the apple orchard; so do many farmers about here in my own county. But Mr. Orr's reply to my suggestion was that he had tried sheep and could not protect them from dogs. This seemed to me a strange state of affairs in a civilization such as you enjoy in the Niagara peninsula. Such a state of things could not exist with us up in these back townships, and why should they with you. With that defect remedied and Mr. Orr's mountain side apple orchard stocked with sheep his fruit farm might well be considered an ideal one.

T. H. RACE.

Mitchell, Aug. 15.

THE EMERALD PLUM.

SO long ago as the year 1889, the late Warren Holton, of Hamilton, well known in fruit growing circles, sent us a sample of a new seedling plum, which he called "Early Green." In an accompanying note he said, "considering its size, fair quality and in particular its early season (1st August), in ripening, I think it may prove worthy of cultivation."

About August 1st, 1899, ten years

later, we received another sample of this plum under the name of Emerald, which we had little difficulty in identifying as the same. The accompanying engraving shows this plum in natural size, the color is greenish yellow, form roundish, of good size and excellent quality, coming in before the better varieties of Japan plums, and not being subject to rot—this plum will no doubt be of considerable value.



FIG. 1646.—THE EMERALD PLUM, (natural size).

FERTILE AND STERILE GRAPES.

PROF. S. A. Beach of Geneva Experiment Station, has been making a study of the self fertility of the grape. It has been noted that some varieties, when planted alone, failed to set fruit. Barry, Herbert, Brighton, Eumelan and some other varieties, when set alone in vineyards, or in blocks remote from other sorts, proved shy bearers, producing only a few bunches of a straggling character, or were complete failures. These same grapes, in vineyards not favorably located, but composed of mixed varieties, gave heavy yields of large and compact bunches. The cause of these results has been the subject of investigation for some time and has been under experiment. One fourth of the varieties have borne perfect compact clusters in the bags; more than one-third produce clusters not quite perfect but still marketable; about one-sixth of the varieties produce a few fruits, but not large enough to produce salable bunches; and nearly one-fourth of all tested produce no fruit whatever where cross pollination is prevented. The following is a list of classes 3 and 4, as tested, which will not fruit well when standing alone, and should therefore be planted beside other grapes which bloom at the same time.

CLASS 3. CLUSTERS UNMARKETABLE.*

Adirondack	Marion
Alexander	Nectar
Amber Queen	Noah
Brighton	Northern Musca-
Canada	dine (?)
Daisy	Norwood
Denison	Pearl
Dracut Amber	Roenbeck
Eumelan	† Ross (Gov.)
Geneva	Thompson, No. 5

Gold Dust	Thompson, No. 7
Hayes	Vergennes
Lindley	Woodruff

CLASS 4.—SELF-STERILE. NO FRUIT DEVELOPS ON COVERED CLUSTERS*

Amber (?)	Hercules
America	Jewel
Aminia	Juno
Barry	Massasoit
Black Eagle	Maxatawney (?)
Blanco	Merrimack
Burnet	Montefiore
Creveling	Oneida
Dr. Hexamer	Red Bird
Eaton (?)	Red Eagle
Eldorado	Requa
Elvibach	Rogers No. 5
Essex	Roscoe
Faith (?)	Salem
Gærtner	White Jewel
Grein Golden	Wilder
Herbert	Wyoming

The method used was simple but the amount of work required great. Vines of the different varieties in apparently healthy, productive condition were selected, and two or more well formed flower clusters on each vine were inclosed, before the flowers opened, in manila paper bags, as shown in the figures. When the flowers open, as

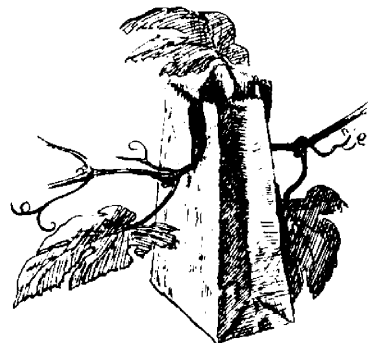


FIG. 1647.—BAG IN POSITION OPEN.

SKETCH OF THE WORK OF MR. H. H. STEWART.



FIG. 1648.—BAG CLOSED WITH WIRE LABEL.

they do perfectly although bagged, they can receive pollen from no other variety ; that is, they must become self-pollinated, not cross-pollinated.

If they produce fruit under these conditions the variety is self-fertile ; but if, repeatedly, in different years and in different vineyards, the flowers bear no fruits or but a few straggling berries, the variety is self-sterile, or practically so.

SKETCH OF THE WORK OF MR. H. H. STEWART.



FIG. 1649.—MR. H. A. STEWART,
HAMILTON, P. E. I.

President P. E. I. F. G. A.

WE have pleasure in reproducing in our columns this month the portrait of H. A. Stewart, Esq., President of the Fruit Grower's Association of Prince Edward Island. Mr. Stewart was born at Hamilton, P. E. I.,

on March 20th, 1850, and is consequently in the prime of life. He has always taken an active and prominent part in all movements in his native province, having for their object the advancement of agriculture, and the subordinate science of horticulture. Before a Provincial F. G. A. was properly launched, he was the President of the Prince Edward County Association, which did much good pioneer work for the general association. Mr. Stewart is one of the most advanced agriculturist and horticulturists of his native province, where lately agriculture is followed with such success in all its improved phases ; he is also active in the organization which brings the cultivator within reach of the social, fraternal and economic advantages of the age. Since 1897 he has been President of the Agriculture Insurance Company of P. E. I. Mr. Stewart is a man of splendid presence, a good speaker, a clear and forcible writer, and a true lover of his country and Province. Under him the F. G. A. of P. E. I. is making a steady progress.

UNPROFITABLE PLANTATIONS.

FRUIT growers are a long time in learning that the principles of success in other lines apply with equal force to their business. Every fruit farm has acres of orchard which yield no profit because not properly utilized. One of the first lessons to be learned is, *the soils that are suited to the various fruits.*

The apple is easily satisfied, and will grow on a great variety of soils—from heavy to light—but on light soil there is often too much wood growth and too little color. The best results so far as our observation goes, are obtained in clay, or where a clay subsoil is covered with a few inches of sandy loam. Such soil, if well tilled and enriched, gives highly colored and large sized Baldwins, Spys and Cranberry Pippins, which on light sand are irregular in size and quality, and the King, unproductive on the latter soil, was fairly productive on clay. The pear and the plum, especially, demand a clayey soil, well tilled, for the best success, and in such soil they will be much more fruitful than on a light sand; and the pear especially will take on a finer color. This we have noted especially in the case of the Bartlett, the Flemish Beauty, and the Clairgeau.

It is astonishing what endurance the pear and the plum have of even poor soils. An apple orchard was planted at Maplehurst on a poorly drained clay soil, with "hard pan" subsoil. The apples were worthless—too small to pay for gathering. Pears planted in the same soil were a success.

The cherry and the peach, on the other hand, most fastidiously demand a sandy loam, well drained, and will not thrive on clay.

The cherry tree is particularly

fastidious over soil. On sandy soil, well tilled, it makes extraordinary wood growth, young branches of the sweet cherry class, such as Napoleon or Spanish, often making two feet of stocky new growth in the months of June and July. In sod, if on sand, therefore, the growth is good, and many foolishly allow their trees to go untilled, when cultivation would double their returns.

On heavy soil the cherry is not usually a success.

Peaches at Maplehurst planted on clay loam and well cultivated, made poor growth, and much sickly wood. The fruit was small, though highly colored, and after one or two crops the trees began to lose their vitality and die by degrees; while those on high sandy loam, grew with great vigor and lived to twenty and twenty-five years of age. A neighbor, Mr. George Smith, who keeps a Jersey herd and fertilizes heavily, has a fine Early Crawford orchard on sandy soil, which yielded an average of seven baskets per tree of magnificent highly colored peaches, and pay an almost incredible income per acre, while other orchards of the same variety, on unsuitable soil, are an actual loss to the owner. The peach orchards of the Niagara and Essex districts also are planted on sandy soil.

The grape will succeed on either sand or clay, but we have noticed that on sand there is more mildew, more wood growth, and less fruit than on heavier soil. Pattison, a grower on clay, claims that his Concords ripen a week earlier than others planted on sand, and are sweeter in flavor.

On uncultivated land the grape is almost barren. It is a gross feeder, reaching out its rootlets eight or ten feet in every direction in loose soil, and

SPRAYING FOR MUSTARD.

quickly responds to generous treatment.

The currant grows vigorously on sand, but fruits more heavily on clay, if well tilled; and the gooseberry is almost a failure on sand, especially the finer varieties. On clay, especially if on a northern aspect, as for example on the north slope of the Niagara escarpment, where there is moisture, shade and drainage, even the large English gooseberries, such as Lord Dufferin, Whitesmith, Crown Bob, etc., succeed remarkably well, while on the sand on the level land below they are worthless.

Raspberries and blackberries do best on deep rich, moist sand, which does not hold water in winter. On such soil the Cuthbert often grows canes eight feet high, and yields wonderful crops of huge berries. The same soil is most suitable for strawberries.

With these data in view the young

planter should plant wisely, and many who are making no money should consider whether the points here made do not explain the reason.

Much of the best sandy loam in the fruit growing sections of Ontario is planted to apples, land that would bring a fine income if planted to peaches, cherries, raspberries, strawberries or garden truck, such as tomatoes, cauliflower or celery, but which now rarely yields enough to pay the taxes. We know Baldwin orchards on sand, which only average one crop in ten years, and one where the subsoil was hard pan that only yielded two or three good crops in forty years, and is being made into fire wood. Had the planter known something about soils suited to fruits, he might have saved himself a life of disappointed hopes.

SPRAYING FOR MUSTARD.

By Frank T. Shutt, M.A., Chemist, Dom. Expl. Farms.



ONE of the most persistent weeds that farmers in many parts of Canada have to contend with is Mustard, commonly known in Europe as Charlock. Though an annual, it is most difficult to eradicate from fields in which it has become established, owing to the fact that the seeds—of which a large number is formed—are endowed with a strong vitality and are preserved, by the oil they contain, from decay until favourable conditions for sprouting occur.

Pulling the Mustard when it appears among the grain, or keeping the weed from seeding by working the land (as under a hoed crop) are the two methods which have hitherto been in vogue to exterminate this pest, and when the

work is done thoroughly they may be considered satisfactory and efficient. The former, however, is always costly, and the latter is sometimes not convenient. When, therefore, it was announced in the *Agricultural Press* that spraying with certain solutions of sulphate of iron and sulphate of copper had been tried successfully in England and France, it was deemed advisable to make similar experiments here. We should then be in a position to furnish information at first hand on this subject.

The fields of the Experimental Farm being free from this weed, it became necessary to make the trials upon an adjoining farm, and for this purpose a field of barley was selected which showed

THE CANADIAN HORTICULTURIST.

a considerable amount of Mustard. The size of the plot treated in each case was one-tenth of an acre, and the quantity of solution uniformly supplied to each area was five gallons, or at the rate of 50 gallons per acre. The date of spraying was June 26th, the grain being from 15 inches to 20 inches high, and the Mustard practically the same height and just coming into flower. The chief data may be briefly stated as follows:—

Sulphate of Iron, 5 per cent.: No effect upon barley. The leaves were practically all stripped from the stems of the mustard, but the weed was not killed, as evidenced by the new leaves subsequently starting, the plant flowering and the seed-pods filling out and maturing. The leafless stems were quite green a fortnight after the spraying, and were apparently furnishing nourishment to the seed.

Sulphate of Iron, 10 per cent.: A slight scorching of some of the leaves of the barley was to be noticed. A fortnight after the spraying this was not discernable, and, though this spray may have *slightly* retarded growth, it is not probable that the yield of grain was affected.

Though the effect upon the mustard was more pronounced than in the foregoing instance, as noticed by the "spotting" on the stems, it was not sufficiently strong to prevent flowering and the ripening of the seeds, a large proportion of which proved, upon testing, to be vital.

Sulphate of Copper, 2 per cent.: A certain amount of injury to the leaves of the barley resulted, evidently retarding growth to a somewhat greater degree than the 10 per cent. Iron Sulphate solution. At the end of two weeks, however, this effect had practically all

disappeared, and it became doubtful if there were any permanent injury to the grain. The mustard very quickly and markedly showed the effect of the spraying, both the stems and the leaves dying without allowing the plant to seed. Two weeks after spraying, a few living mustard plants were found in the plot, but it is believed they had escaped the solution, owing to the height and overshadowing of the barley.

Sulphate of Copper, 5 per cent.: This solution damaged the barley in a much more pronounced manner than the preceding solution; in all probability it somewhat lessened the yield of grain, though, as the ground was very uneven in character, no comparative data on this point could be obtained.

The mustard was all killed; an inspection two weeks after the spraying did not reveal any living plants.

In order to ascertain the effect of these solutions upon this weed at a younger stage of growth than that just reported upon, mustard seed was sown in rows in a plot upon the Experimental Farm. When the mustard plants had reached the height of six to nine inches they were sprayed, as follows: July 20th—*Sulphate of Iron, 5 per cent.*: Not all killed; the few survivors possessed green stems and in time sent out new leaves. It is extremely doubtful, however, if the plants will have sufficient strength to flower. *Sulphate of Copper, two per cent.*: All the plants died within a few days.

July 22nd—Further sprayings were made. *Sulphate of Iron, 5 per cent.*: The stems were stripped of all their leaves, but in the course of a few weeks fresh leaves had appeared on many of the plants. *Sulphate of Iron, ten per cent.*: Though somewhat more severely attacked than by the five per cent.

NOTES OF STRAWBERRIES.

solution, there was sufficient vigour left in many of the plants to send out new leaves, after a few weeks.

Sulphate of Copper, two per cent. : Only a very few of the older and more vigorous plants escaped destruction, probably not more than three to five per cent. This solution is evidently strong enough to kill all mustard plants six inches in height and less.

Sulphate of Copper, five per cent. : All the plants killed.

From the above data, I make the following inferences :

1. That a two per cent. (2%) solution of Sulphate of Copper, (that is, 2 lbs. in 10 gallons of water) is, all things considered, the most effective, safest (as regards the grain crop) and most economical to use. The spraying

should be done thoroughly, and for that purpose 50 gallons per acre will be required. If a heavy rain follows the spraying within 24 hours, the operation will be required to be repeated.

2. That, in order that the work may be effective, spraying should not be delayed after the mustard plants have reached a height of six to nine inches. If allowed to grow taller than this, stronger solutions would be necessary and in larger quantity, as the grain would then largely protect the mustard.

For many valuable suggestions and much assistance in the work I am indebted to Mr. W. T. Macoun, Horticulturist of the Experimental Farm, who concurs with me in the deductions drawn from this investigation.

NOTES OF STRAWBERRIES.

CLYDE was as productive, fine form, uniformly large size and good quality as ever, but its continued great productiveness from year to year is developing a weaker growing plant not exactly a weak plant but not enough foliage stalks for its great number of fruiting stems, and to bring this variety to its highest state of perfection it will need to be mulched with horse stable manure in the winter, or else have some nitrogenous commercial fertilizer put on in the spring before fruiting to make a little heavier foliage to shade the enormous crop of berries that it carries. From some few soils this berry seems to be a little too light in color to please all markets, but for my own fruiting on a variety of soils and from general reports received, it is one of the most productive and satisfactory berries that has ever been grown.

GLEN MARY is very vigorous in plant

growth ; dark green foliage and enormously productive of large size, deep red berries of high quality and is proving more satisfactory even than in former years. I have been fearful in the past that there would be too many irregular berries in this variety, but this year they were all of uniform, globular shape and no mis-shapen ones at all, and it can be counted as A No. 1, either for home use or market.

PRIDE OF CUMBERLAND, although a little later in ripening than Glen Mary, has the same vigor of plant, great productiveness, equally good, dark red color, perfectly globular, very firm berries of high flavor. I count it the most productive, fine appearing and firmest shipping, medium to late season berry for long distance markets of any we have in the country.—J. H. H. in American Gardening.

NOTES ON CURRANTS.

THE NORTH STAR CURRANT.—We have fruited this currant at Maplehurst since 1896. At first we were inclined to condemn it as being too small a berry, but during our four year's acquaintance with it, our estimate of its value has been gradually growing higher, until in 1899 its great productiveness, bright beautiful color and lateness have given us a much more favorable impression of its value. Originating in Minnesota, it may naturally be expected to have greater hardiness than varieties originating farther south. The plant is very vigorous and very productive, and the fruit grows in long compact bunches, with an inch or so of naked stem as a handle. The fruit hangs in fine condition as late as September 1st, a point in its favor for Southern markets.

CURRANTS.—On the subject of currants, J. S. Stickney, speaking from twenty years' experience, "recommends deeply trenched soil ; would not manure too heavily ; too much wood, too little fruit ; prune severely in fall or spring, also in summer for renovating old plants ; eight acres of Prince Albert produced

900 bushels, that netted \$200 ; long Bunch Holland not good—too dry and sour ; Fay not good ; is looking for a new variety ; Pomona recommended as good, better, best ; Wilder highly recommended." Mr. Reed says Pomona, Wilder and Knight's Improved are the same. Mr. Stickney and also Mr. Barnes recommend London Market. Berry boxes in sixteen quart crates recommended for currants.—Report of Minn. Society.

THE WHITE IMPERIAL CURRANT is about the most satisfactory white currant to be found. We consider it one of the most satisfactory fruits for table use. It lacks the sharp acid taste of the red currant, which is quite objectionable to some people, but has a mild, pleasant flavor, which is very enjoyable. Perhaps the finest of all currant jelly can be made by using White Imperial with just enough of the red currant mixed with it to give a light red color. It, probably, would not pay to raise white currants for market, but they are very satisfactory for home use.—R. N. Y.

PICKLE MILDEW. — Bulletin 156, Geneva, gives some pointers of interest to pickle growers. A few years ago this crop was considered quite a profitable one until the downy mildew appeared, and caused nearly all the growers to lose money. In 1897 it was proved by repeated experiments that repeated sprayings of Bordeaux mixture

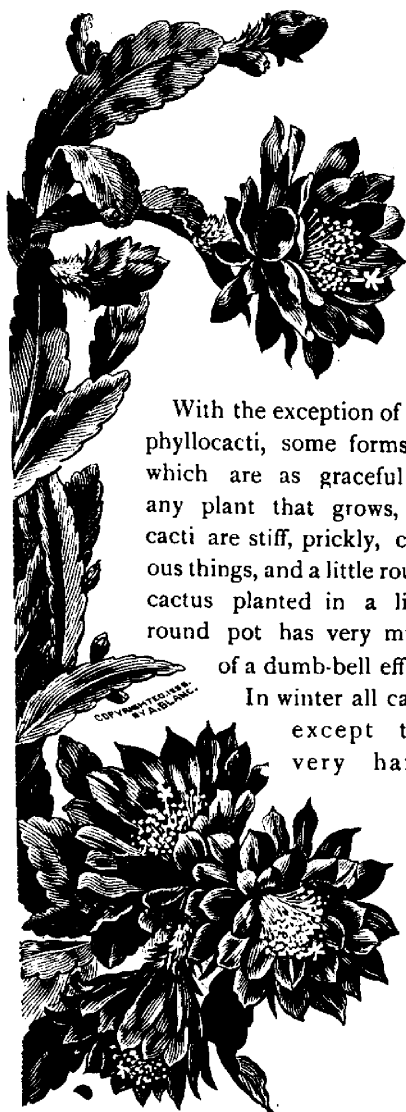
will prevent the mildew and save the crop. The spraying begins about July 20th, and continues every eight or ten days until frost, costing from 2½ to 3½ dollars an acre for each application. This seems quite an expense, but since the yield is increased in value from \$22.50 to \$73.75 per acre by the outlay, it is evidently a safe investment.





Flower Garden and Lawn. K

THE SUMMER TREATMENT OF CACTI.



With the exception of the phyllocacti, some forms of which are as graceful as any plant that grows, all cacti are stiff, prickly, curious things, and a little round cactus planted in a little round pot has very much of a dumb-bell effect.

In winter all cacti, except the very hardy

ones, must be grown in pots or boxes, but in summer it is pleasant to relieve their stiffness by bedding them out in this picturesque mound fashion. Thus they are more easily cared for, and that the mound is much prettier than the potted group will be shown by contrasting the two pictures.

I have never been afflicted with the cactus craze, and perhaps this is the reason why so many complimentary plants, cuttings, etc., have been sent

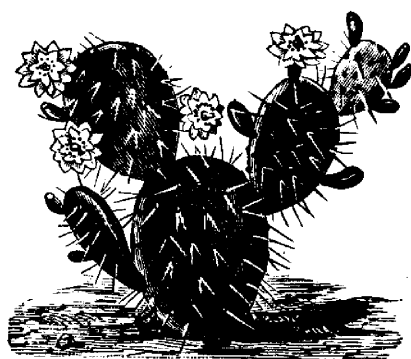


FIG. 1650.—OPUNTIA.

me. I am always glad to get the prickly things out of the way into some such an outdoor arrangement, and summer treatment of this kind seems to suit the plants well.

The broad-leaved phyllocacti are handsome and harmless enough to keep at closer range, and they do not like the full, hot sun so well as most other sorts;

sometimes it blisters, cracks or yellows the leaves.

The secret of success with cacti lies in giving them thorough drainage, plenty of water when flowering or growing, then thoroughly resting and ripening them by withholding all water except what nature gives them, through the flowerless season. More cactus cuttings and plants fail from over-watering and lack of sunshine than for any other reasons. Most cacti are hardier, too, than we think. Unless flowering, they can be left in an unheated room through all except our most severe winters. The opuntias and some of the pretty red-berried echinocacti are entirely hardy without protection out of doors here in Western Carolina.—American Gardening.



FIG. 1651.—CACTI IN MEXICO.



DICENTRA SPECTABILIS is one of the finest of the hardy herbaceous perennial plants in cultivation and should be in every garden. Nothing is prettier than its graceful racemes of rosy crimson flowers, among its leafy stems in the early summer, and indeed it has been largely planted in our Province. It is suitable for planting along the margin of shrubberies, or on the borders of walks, along with other perennial flowers. Grows to a height of from 9 to 24 inches.

In the Niagara district, on the mountain side, there are two native *Dicentras*, which are very beautiful and are great favorites with school children, who call them "Boys and Girls." Botanically they are: *D. Canadensis* (girls) with greenish-white fragrant flowers, and under ground shoots on which grow small round yellow tubes. From these it gets another common name, Squirrel Corn. The corolla is heart shaped but the spurs are very short and rounded, giving an excuse for likening the flower to a girl's dress. The other is *D. Cucullaria* (boys) of which the flowers are whitish, and have longer spurs, which so diverge as to remind one of boys' clothes, and which gave rise to another common name, Dutchman's Breeches. The flowers are clustered on the raceme, and are much sought after in spring for table decoration.

ORNAMENTAL ASPARAGUS.

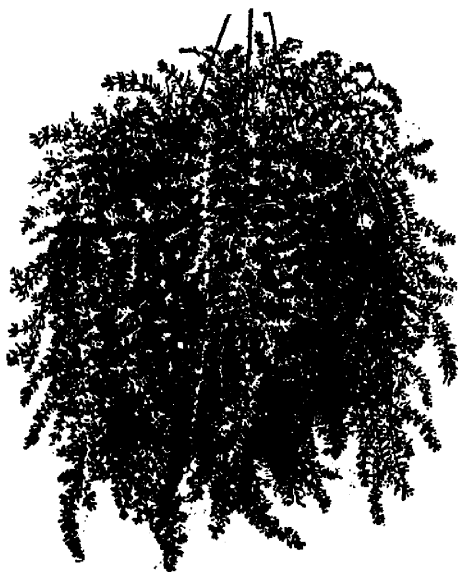


FIG. 1652.—*ASPARAGUS SPRENGERI*.

THE Ornamental Asparagus open up a new line of ornamental plants for house culture. Unlike many such plants they do as well in the ordinary window as when grown in a greenhouse, making rapid growth, and holding their attractive green color well. They do not require a great deal of sunshine, but thrive best where begonias and primroses do well. For that reason a north or west window can be utilized which will be of little use to flowering plants. Like ferns a damp atmosphere suits them perfectly, but unlike ferns they will do well without it. A daily spraying with clear water will furnish just the dampness they need.

Asparagus plumosus nanus, also called the climbing Lace Fern, is usually considered the handsomest one among them. The shape and form of the leaves remind one of the fronds of the finest fern, the texture delicate and lace-like. It grows in the form of a vine, and the branches often grow to great

length, but should one prefer not to have a vine it can be easily made to grow in bush form by pinching out the ends of the branches. This is really the most ornamental way to grow the plant, as it is then a perfect mound of green, lace-like leaves, drooping on all sides of the pot. The leaves arch gracefully, and are from ten to fifteen inches long, tapering from a width of ten or twelve inches down to a point, making one of the most beautiful plants for table decoration that can be found. The branches are fine for cutting, and remain in perfect condition for weeks if the water is changed frequently. I had several cut sprays for mantel decoration last season, and they remained in perfect condition in an ordinary room for five weeks. Hardly a leaflet fell during that time, and the color seemed as fresh and bright as when picked. Charcoal was kept in the water, which was renewed every second day, and this probably helped to keep it so well.

A. Sprengeri is adapted for a basket plant, being of drooping habit, and though the foliage is also fine and a vivid green it is entirely unlike that of the other variety. The sprays grow to a length of four or five feet, but if a shorter growth is desired the ends can be pinched back and the plant will then grow bushy, often entirely hiding the basket in which it grows. If one has no place for a hanging basket, the plant can be grown in a pot placed on a bracket. This is often the better way, as it can then stand in a saucer and be sure to receive all the water it needs, while a basket often suffers for want of water. Both of these plants grow freely all the year round, and cannot fail to please everyone.—Park's Floral Guide.

CLIMING VINES.



FIG. 1653.—CLIMING VINES AT MAPLEHURST, 1899. (*From a Photograph by Miss Brodie.*)

IT is time that our Canadian farmers began to study a little of landscape art. They have long enough confined their attention to the plough and the harrow, and now surely they can spare a little time for the decoration of their lawns. It is a very simple thing to hunt up some of our native Virginia Creepers, and plant them to cover the unsightly stables, or to trail over the back verandah. In some parts of our country they grow in great profusion, climbing up the old forest tree trunks, and hanging in festoons from tree to tree. They are easily moved, for roots spring out at every node, and a plant seldom fails to grow. Even cuttings made in August may be planted, with good hope of success. Figure 1653 shows a side view of Maplehurst, with a Virginia Creeper, and Clematis Virginiana, another hardy native creeping

up in company, and showing the pretty little cymes of white flowers of the latter sett off quite prettily by the dark purple berries of the Virginia Creeper. The effect is charming and the pretty creepers thus almost covering the wood work seems to cause the house and the grounds to have a more living connection, and blend into a harmonious whole.

The Park and Cemetery says :—

The work of improving the appearance of public grounds and private premises facing the railway rights of way is just as important, perhaps even more so, as improving the station grounds proper, and is rather more difficult of accomplishment. This is especially true of private grounds, for there are more individuals to be dealt with.

In the outset as many old buildings and fences as possible should be re-

AUTUMN WORK IN THE GARDEN.

moved, and after that the greatest immediate good will follow a generous use of vines. A Virginia Creeper, *Ampelopsis Quinquefolia*, set against the base of every building, no matter how old and delapidated, and at intervals along every fence, will alone do wonders in altering the appearance from passing trains, but the effect will be greatly improved by using a variety of hardy vines such as *Clematis paniculata*, *C. Jackmanni*, *C. Virginiana*, *C. graveolens*, Trumpet Creeper (*Bignonia radicans*) and where hardy, *B. grandiflora*, Bitter-

sweet (*Celastrus scandens*), wild Roses and wild Grapes.

Small trees and shrubs should also be freely introduced to shield the grounds from the passing public as well as to screen unsightly objects.

By this means a double good will have been accomplished, the general appearance of the place will be raised to a higher plane, and individual back yards transformed into habitable gardens while the chances are in favor of other good results following in the wake of this, as of every kind of unselfish movement.

AUTUMN WORK IN THE GARDEN.

IF good results are desired, the fall work in the garden, while not so interesting as the work in the spring, is fully as important.

The hardy border should first be cleaned up, by cutting and clearing away the stems and tops of all herbaceous plants, and the beds given a good mulch of well-rotted manure or compost, made up of leafmold and manure. Where this cannot be had, street sweepings can be used, but must not be put on over two inches deep.

Hardy roses may be protected by heaping leaves about them and over the ground around them, with a little soil thrown on top to prevent the leaves from blowing away. Tender roses may be protected in the same way; but instead of using earth to prevent the leaves from scattering away, better to have a lean-to, made of boards about eighteen to twenty-four inches high, which also sheds off the rain and snow. Care should be taken to leave it open at the ends, or one side, to admit air.

Shrubs should be pruned by removing such thin branches as will not bloom.

Hydrangea paniculata should be heavily manured, and in the early spring all thin branches cut away, and the other wood of the past season's growth cut back severely, fully one-half. This treatment will result in a vigorous growth and produce large clusters of bloom.

All clematis can be cut back within two feet or less of the ground, and a covering of rotted manure and leaves placed around them and over the ground.

Grapevines may now be trimmed to advantage, much better than late in the spring.

Fruit trees should be pruned by removing all "water sprouts" and interfering branches, always cutting them off close to the trunk or limb. All dead limbs should be removed from shade trees, and where the top is too dense remove some of the thin inside branches. Examine all trees for nests and larvæ that will produce caterpillars.

The lawns should now receive attention by topdressing with compost, old manure or street sweepings, spreading it over as evenly as possible

The cannas, dahlias, gladioli and

caladiums should now be safely housed in a dry, warm cellar not heated by a furnace. If your cannas and caladiums begin to rot during the winter, shake off all the dirt, and cut and scrape away the

decaying parts. Then dust over thickly with fine charcoal, which may be had from any tinner or cornice maker. Cover with dry earth — Landscape Gardener.

BASKET PLANTS AND VASES.

THE times have greatly changed with varieties grown for hanging plants since 1850. The cultivation of many delicate kinds like Lobelia, Sweet Alyssum, Mimulus, Cupid sweet pea, Ivy geraniums, etc., have entirely succeeded the Dusty Miller and Strawberry geranium, but the Oxalis is still grown, and properly cared for is fine for this purpose. Lobelias of any variety are admirable for both basket and vases, as are the above mentioned sorts. But few are cognizant of the Lobelia Erinus thriftily grown alone; for then it becomes a mass of delicate green foliage, interspersed with lovely blue flowers. Emperor's star has a white centre, and each by itself is best. The double petunia grown with asparagus tenuissimus, and Ivy geranium, Plumosus nanus, Abutilon Mesopotamicum with centrosema and pilogen and climbing meteor rose, make the most charming vase if rightly trained.

The trailing lantana (*delicatissima*) is worthy of a trial for baskets. It is of very compact growth, profuse bloomer of pinkish lilac. This too is fine to edge a vase on one side, with lobelia on the other.

Then the Japanese Fern Ball is an acquisition; it may be so neglected as to entirely wither away, but water will revive it. It is unlike the resurrection plant in that it grows leaves. But this

resurrection plant, so called because it spreads itself when wet, is of little use except to be strung up with moss and mimulus or some other plant to flourish in. I believe in a resurrection that is more permanent. Let us cultivate good roots to our plants, and expect corresponding results.

I am of the opinion the Memorial rose will be of great ability and beauty grown in a vase. Somehow the tree rose gives one the impression little children do when over-dressed, befrumped and befuddled with lace and ribbons. If we cannot purchase a vase, we can manufacture one. I found in my travels one day an old cover of a meat warmer, heavy Britannia ware, I took it home and gave it a coating of tar on the inside, sawed off a shapely round post, and made a circular bottom of two inch plank, nailed it together, gave another coat of tar, painted the outside, and have a vase that answers every purpose and looks like something better, when arrayed as even Solomon never was. By the way, this cover came from Montreal, I learned afterwards, and the bottom part I obtained and used for small pots, intersected with moss. Doubtless, more are to be found in the province of Quebec.

M. A. HOSKINS.

Newport, Vt.

THE AMARYLLIS AND SOME RELATIVES.

FROM the time that, as a child, I stood in wonder before my mother's king lily, I have loved the amaryllis. Not until many years later did I learn that the name of the king lily was *Amaryllis Johnsoni*, and it was after many experiments and repeated failures that I succeeded in the culture of these rich and rare bulbs. I know of no specialty which gives so much satisfaction at so little labor as the amaryllis. I use a very rich compost of well rotted manure, black earth and sand. The large bulbs are set in six inch pots, and smaller bulbs in four-inch pots. Into the bottom of each pot goes a handful of charcoal, and then the mold. I set the bulbs so that about one-fourth shows above the soil; then I water them and set them in a warm, light place. A good bulb will throw up leaves and flower stalk almost at once; some send up the flower stalk first. As soon as they begin to grow thriftily I set them in the sun and give them plenty of water. New bulbs planted in the spring will bloom about August. After they have bloomed I gradually dry them off and set them in the cellar in the fall, to rest until November. I have found this the great secret,—the resting of the bulbs. When I bring them up I give them sun, plenty of water, and liquid fertilizer once a week. They will bloom twice during the winter for me, the last time about April or May. Then I gradually dry them off until in July they are put under the rose bushes to rest. In the fall they come into the house to bloom, and this year were put into the cellar along in March,—and so on, alternate rest and vigor. I only repot once in two years, but I give them much fertilizing and water when they are growing. Some

bulbs will throw up two stalks, each bearing six flowers, and a grander sight cannot be imagined.

The familiar *Johnsoni* is a rich red, with a white stripe. It is a good color, but is small in size of flower and bulb. It is almost universally called King Lily, although it is by no means king of the amaryllis tribe. Its mate is *Amaryllis Regina*; it has short, stubby leaves, instead of the long ones of the king, and the flowers are large, pale red with a white centre. We call it Queen Lily. The King, because of its richness of color, rather kills the Queen if they stand in bloom side by side. But alone, Queen lily is beautiful.

The *Crinum ornatum* is the real king of amaryllis. It has a big bulb which sets on top of the earth, with short, fleshy leaves and snake like roots. It will do well in the garden as a summer bulb, but I treat it as a pot bulb. The flowers are borne upon a stout stalk and are very large and numerous. The color is a lovely pink with a broad fiery band of scarlet through each petal. A grander lily can scarcely be imagined. It is the grandeur of lilies which makes them such favorites, and when you add fragrance to them, such as *Crinum Moorei* possesses, you have a wonderful combination. This *crinum* is white with a pink stripe, and very sweet.

It is hard to select a favorite from the amaryllis, but my *A. aulica*, which is a rich deep red, almost black, is of such magnificent size and rich coloring it may well be termed a favorite. The color is seen in no other flower.

The *Empress of India* is the costliest of all the amaryllis, but it repays its cost. The flowers are enormous, of a deep scarlet, banded with orange. It is a royal plant without question.

THE CANADIAN HORTICULTURIST.

Amaryllis formosissima is a rich velvety crimson with a green band through the centre, and it gives one a sense of luxuriant pleasure to look upon it.

The pure white, fragrant *amaryllis* is called *Ismene*. Pale beside its more gorgeous relatives of royal coloring, it is nevertheless valued because of its fragrant daintiness.

The *zephyranthes* belong to the

amaryllis family. I have a large pot filled with a dozen or two bulbs for summer blooming. The red, pink, white, and yellow flowers are very dainty.

Some day I hope to see a clear yellow *amaryllis*. All shades of red and the white we have,—a yellow would be the touch of novelty in this wonderful family.—*American Gardening*.

GERANIUMS FOR WINTER BLOOMING.

GERANIUMS do very much better than bulbs for me in the window in winter, and bloom almost constantly. Some of mine are five and six years old; others were slipped last summer. All intended for winter-blooming are kept in pots the year around. The six-year-old plants are now in quart pots. During the summer they stand on the east side of the house, where they get the sun a part of the day. I trim them well back, cutting off every bud, and do not allow a bud to remain on them during the summer. Late in July or early in August I repot them, giving good but not rich soil, and using a size larger pot if needed. Trim

back again, giving them water enough to keep them in good condition. Early in September they are placed on the veranda. Late in September they are placed in their winter home. They get accustomed to the indoor air before the fires are started, and never lose their leaves, as is usually the case if brought directly from outside into a heated room. Mine bud and bloom at once. Experience has taught me that to bloom in winter a geranium needs a small pot, not too rich a soil, and a good summer rest—that is, a non-blooming period. *Mad. Bruant* is a lovely geranium.—*Park's Monthly*.



GLADIOLUS FREAKS.

REFERRING to the article on page 271 of your July number, I am pleased to notice the interest of Mr. Latchford in the natural tendency to variation in plant form, due entirely to hybridity.

Having originated by cross fertilization over 250,000 varieties of the Gladiolus from the choicest parentage obtainable, many curious variations have resulted from the blending of this mass of diverse chemical constituents.

Duplication of petal is not uncommon, nor is it confined specially to any variety, although there are varieties that show a greater tendency in this direction.

Another form peculiar to some varieties in the Burbank section, is that of the flowers growing evenly around the spike like the hyacinth.

One distinct hybrid between a red and a white, divided the plant area between the contending forces, and bloomed all red on one side of the spike, and all white on the other.

Another on the same line of influence, instead of opening regularly from the base of the spike, opened the alternate flowers, that is from one to three, and

from two to four, the forces of development clearly working on parallel lines.

A most unique case of variation appeared in a variety of Lemoines novelties, the true ground color of which was an intense scarlet. The variations, consisted of a clear division of the flower to the mid-rib of the lateral petals, the upper half becoming a delicate cerise carmine, the lower remaining normal. The next season the whole flower assumed the new color.

Gandavensis "Tamerlan" has long been obtainable in America, but has been superseded by newer and more beautiful varieties carrying the same peculiar markings. The plants of the newer hybrids also have greater vitality and increase rapidly.

"Multipliant" is a beautiful variety, but like most Gandavensis is materially lacking in vitality. This variety gave me the only twin seedling I ever saw or heard of. The division showed the first season from seed, and the two plants have since proved to be one variety.

H. H. GROFF,

Simcoe.

THE JAPAN IRIS.

THE glorious flowers of the Japanese iris will repay a little extra trouble in planting the roots. We have one splendid bed before us as an object-lesson. In preparing it last fall the soil was dug out for two feet and the trench filled nearly to the top with dry leaves. The rich loam spread above the leaves packed them down so that with about a foot of soil upon the leaves the surface of the bed was still several inches lower than the surrounding surface. Later in fall we spread five or

six inches of fresh fertilizer from cow-stalls over the bed. Next spring before and during the time of flowers we kept the bed soaked with water. The leaves held the moisture below the light soil without allowing it to sour, and oh, what grand flowers we had! Near to this bed we have English and native iris in large clumps. The form of these I shall always like best. Kaempfer's iris is bigger and brighter, but not bonnier. —Vicks Magazine.

PLANTING LILIES.

A CARDINAL point in the culture of lilies is to keep them under ground. Order the bulbs early, so that they need not remain long in the importer's storage room; plant them as soon as they are received, and never in subsequent transplanting allowed them to remain one minute longer above ground than is absolutely necessary. Frequent removals of lilies are to be deplored. The bulbs should not be disturbed so long as they flower satisfactorily. Root growth for another season begins as soon as the tops die down. The hardiness of lilies is usually over-estimated. As a general thing they suffer from shallow planting and often the necessary winter mulch is forgotten. Lilies should be covered at least four inches in a heavy soil, and from six to eight inches in a light one. I plant my lilies in pure sand, and mulch them after the tops die down with cow manure, over which later on is spread a thick layer of half-decayed leaves. The lillies are planted along the shrubbery border, with special "pockets" of sand hollowed out for them here and there. The foliage of the shrubs protects the roots of the lilies, and their buds and flowers here have leaves enough to form a good background. The shrub-roots also drain the soil all that is necessary. —Vicks Magazine.

IN planting lilies, as everything else, white flowers must not be overlooked; as Ellwanger says, "White is the lens of the garden's eye," and in a class so generally conspicuous for its glowing colors we need the snowy purity of the Madonna lily (*L. candidum*) or the stately waxen blooms of the tall annunciation lily (*L. longiflorum*). * * The use of tall-growing and showy bulbs is singularly effective in connection with shrubbery, the arrangement looks so delightfully natural, breaking as it does the monotony of similar sizes of shrubs or foliage. Certainly, the nearer we approach nature in arranging our gardens the nearer we are to actual harmony; it is rather hard to imagine how we ever could manage to reconcile our consciences to carpet-bedding. It should be a great comfort to the lily tribe to feel that they can never be tortured into an even mosaic, looking more like a few yards of linoleum than a flower-bed. But there are plenty of misguided people still living who admire this form of garden art (?) and until they wake to the error of their ways we shall continue to see bedding plants misarranged after the model of carpets.—American Gardening.

SWAINSONIA.—This plant delights in a compost of peat and loam, with good drainage. If peat cannot be obtained a fibrous soil will answer, prepared by piling sods, manure and sand, and allowing the pile to remain undisturbed until partially rotted, stirring well before using. Pot the young plants in this material, using three-inch pots, and pinch back the shoots and shift into larger pots as

growth progresses. Shade in the heat of the day during summer, and syringe regularly to keep down the red spider. If aphides appear fumigate with tobacco. Give support as needed. With good drainage, regular supplies of water, and attention to the above cultural hints, none should have reason to complain of non-blooming.—Park's Monthly.

FREESIAS.

FREESIAS to bloom by Christmas should be planted in August or September, as it takes them four or five months to reach blooming size. Freesias are seldom planted as early as they should be. I have been told by one who is very successful with freesias, that to keep the bulbs in good condition, they should never be thoroughly dried out, as they easily lose vitality. The soil cannot be too rich if one wants fine, large flowers. Soil which is composed of old, thoroughly decayed leaves and manure, with a very little wood ashes is good. Use deep pots, well drained. Put in bulbs about two inches apart, and cover fully an inch. Water sparingly until shoots appear. You need not put them away in

the dark for roots to form, but keep in any cool, shady place in yard or house. After the shoots come through gradually bring the pots to the full sunshine, and you will have strong plants, standing up erect. Keep well watered and grow in the full sunlight, as they are much more fragrant when grown in a sunny position. Also be careful not to wet the blossoms, as that will lessen their fragrance. Rich soil is said to give highly colored flowers.

To buy small inferior bulbs will only cause disappointment, as they cannot produce the fine blossoms that the large bulbs will. Put six or more mammoth bulbs in one pot, and you will be richly rewarded for all your trouble and expense.

THE JONQUIL.

THE species and varieties of *Narcissus jonquilla*, are popularly known as "Jonquils" and possess many points of similarity with the small flowered section of that very extensive genus. Although they do not present a great variety of colors, yet they are highly prized for their charming, golden, fragrant flowers, which are freely produced. They are perfectly hardy, and may be successfully grown by anyone in either the flower border, greenhouse or window garden. And as the bulbs can be procured at a very moderate price, they well deserve all that can be said in their praise.

The bulbs can be planted any time from September to December, although it is best to plant them as early as possible

In potting let three or four bulbs, according to their size, be placed in a four-inch pot, and if large masses are wanted, larger pots or pans, and more bulbs can be used. In potting let the pots or pans be properly drained, and use a compost consisting of two-thirds turfy loam, one-third well decayed manure and a fine sprinkling of bone dust. Mix well and use the compost rough. In potting fill the pots or pans to within three inches of the top, then set in the bulbs, keeping them a few inches apart, and then fill to within half an inch of the top. Water thoroughly and place in a cool, dark cellar to make root, watering when necessary.—Vick's Magazine.

✧ Our Affiliated Societies. ✧

FLOWER SHOW IN CAPE BRETON.—Mrs. George Kennan, of Breton Cottage, Baddeck, sends the following account clipped from Halifax Chronicle, of a flower show in Baddeck managed by a young ladies' club, which might do credit to the management of some of our affiliated Horticultural Societies.

"With a view to encouraging the cultivation of flowers and the ornamentation of homes and grounds with blossoming plants and shrubs, the Young Ladies' club, of Baddeck, decided about a year ago to have a flower show, with prizes for the best specimens of cut flowers and potted plants. Although a flower show was then a new thing in our village, and our flower growers had made no special preparations for it, the display of blossoms and plants was so good and excited so much interest that the club decided to have another similar exhibition this year. Inviting the co-operation not only of the towns people, but of flower lovers in all the surrounding country, the young ladies of the club went energetically to work in July, and on the 2nd of August had their show in complete readiness for public inspection. When the doors of Masonic hall were thrown open at two o'clock last Wednesday afternoon, the decorations of the spacious room and the extent of the floral display were a complete surprise, even to those who had expected most. The upper part of each side wall was appropriately ornamented with gardening implements, arranged in tasteful geometrical patterns; along the dado underneath ran a long shelf, banked with moss, which supported a dense fringe of blue speedwell, yellow Canada lilies and tall leafy perennials of various sorts. The stage was set with a garden scene, representing a flower border with achillea, panther lilies, Siberian fox-glove, larkspur and aconite, growing against and half concealing a rustic fence. Upon narrow green terraces, under and in front of the stage, were massed a hundred or more blossoming house plants, flanked by huge clumps of larkspur and spiky fox-glove seven or eight feet in height; and near the centre of the hall, in the shade of two leafy, white-stemmed birch trees, was an artificial pond, filled with blossoming water lilies and bordered by a dense growth of wild flag, interspersed with ferns, English and Japanese iris, the white and purple spikes of fringed orchis, and many other aquatic or moisture-loving plants.

On green tables, set around the sides of the hall at acute angles to the walls, were hundreds of vases and pots of cut flowers and blossoming plants, most of which had been entered in the competition for prizes. Among the flowers exhibited were roses of many kinds,

annual poppies in great variety, phlox' mignonette, eschscholtza, potentilla, calendula, alyssum, digitalis, ageratum, aconite, speedwell, white lupine, Young's evening primrose, clematis, lychnis, cornflowers, Canterbury bells, mallows, anemones, Cape hyacinths, nasturtiums, sweet peas, marigolds, herbaceous, spiraeas, hollyhocks, dahlias, annual chrysanthemums, and half a dozen or more varieties of lily, including elegans, Canadense and auratum.

Mr. J. H. Harris, of the Nova Scotia nursery, Halifax, who manifested a most cordial interest in the exhibition, not only sent a fine collection of cut flowers, including cannas, dahlias, Cape hyacinths and auratum lilies, but presented the club with a large number of small potted plants, to be distributed among people who had no flowers, the club, at the same time, offering a prize for the plant of this collection that should show the best care.

Flowers and potted plants were also sent to the show from places in the country as far away as Middle River and St. Ann's, and after having been carried twelve or fifteen miles in jolting wagons some of these country flowers took prizes.

At four o'clock on the first day of the exhibition a procession of pretty and tastefully dressed flower girls marched with flower baskets through the hall and around the square in which stands the Telegraph house and the Bras d'Or house, and in the evening there was a floral tableau, arranged to illustrate a poem read by Mr. Alexander Graham Bell, and written for the occasion by his father, Mr. Alexander Melville Bell, of Washington, D.C.

On the evening of the second day the decorated flower show posters, painted by members of the Young Ladies' club and already used as advertisements were sold at auction, and the Hon. J. J. McCabe announced from the stage the names of the prize winners in the flower competition.

Great interest in the show was manifested both by tourists and towns-people and the attendance on both days was very large.

PICTON.—We must commend the energy of the directors at Picton, who have just completed their arrangements for a summer flower shower. The following is the circular just sent out (Aug. 9th) to the members. The idea of a promenade concert is an excellent one, for the flowers give topics for conversation, and the music enlivens everybody. The plan of sending out a conveyance

OUR AFFILIATED SOCIETIES.

to collect the flowers and plants, and return them after the exhibition is a capital one; when the money is equally distributed instead of giving special prizes, the Society must do this to ensure a large exhibit. The following is a copy of the circular:—

PICTON, ONT., 9TH AUG., 1899.

The Society propose holding a Flower Show and Band Concert, in connection with the Citizens' Band, in the Crystal Palace on the Agricultural Fair grounds, on Tuesday evening, the 15th inst. It is expected that three bands will take part in the Entertainment, making a promenade concert, which together with the exhibition of flowers should make the evening a very attractive one.

The Directors respectfully request you to contribute all the cut flowers and potted plants you can, and ask your friends to do the same whether members of the society or not.

The flowers and plants should be at the grounds not later than 3 o'clock Tuesday.

If you will send an answer to the Secretary on the enclosed card, stating what you can contribute, a conveyance will call for your exhibit, if within the corporation limits, and will return same to you in good condition.

There will be competent persons at the Crystal Palace during the day to arrange the plants and flowers.

Please do what you can to make this Exhibition of flowers and plants worthy of our town.

J. ROLAND BROWN, *President*.
WALTER T. ROSS, *Secretary*.

PICTON.—The Picton Gazette gives the following account of the flower show held by the Picton Society, on Tuesday evening, Aug. 15th.

Whoever has studied the characteristics of the residents of Picton—and has noticed their love for flowers, and the care and pains taken by a large majority of them in adorning their dwellings and grounds with rare and beautiful flowers and plants—will not wonder that the first exhibition of the Picton Horticultural Society, on Tuesday evening, was in every sense a success—was, indeed, a most prominent success. There were, probably, somewhere about 700 people who availed themselves of the opportunity to view the flowers exhibited, and expressions of delight and appreciation were heard on all hands. Prominent among the exhibits were the oleanders and hydrangea shown by Mr. C. S. Wilson; a 25 year old palm shown by W. P. Despard;

a pomegranate shown by Mr. T. Ross, Secretary of the Society; and other beautiful and rare plants shown by several of our citizens. There were geraniums in abundance. The exhibit by Mr. A. M. Terrill, florist, was exceptionally fine. A feature of the show was a collection of flowers shown by members of the society from bulbs gratuitously supplied to the members of the Society by the publishers of the *CANADIAN HORTICULTURIST*.

The exhibit was a very fine one. When it is considered that no prizes were awarded, the exhibition being simply a friendly display, largely as an educational object lesson, to cultivate a taste for the growing of flowers, and thus contribute additional attractions for the home and fireside, its success must be very gratifying to those having the matter in charge. As the initial exhibition the promoters have achieved as much success as they could reasonably expect.

The officers of the Horticultural Society desire to thank the ladies, who so successfully and tastefully assisted in the arrangement of the exhibit; Mr. Dobson and Mr. Turner for their valued assistance; Mr. Carson for use of vases; and the public generally for their splendid patronage, which the society feels is indeed an incentive to future progress.

The Citizens' Band contributed a choice programme of music which was highly appreciated.

A large excursion party came down from Trenton, accompanied by the Trenton Band, and the music supplied by the amalgamated bands was very fine.

WOODSTOCK.—Financially, artistically and socially the opening of the Horticultural Exhibition in the Graham St. rink last night was a brilliant success. An immense crowd gathered in the spacious building and enjoyed to the utmost the flowers, the music and the refreshments. There was perhaps but one drawback—the oppressive heat. It was warm—very warm—and at times the crowd became so congested in front of the platform as to make breathing difficult. But everyone was very good natured, even under such trying circumstances, and the closeness of the atmosphere did not perceptibly mar much of the enjoyment. Neither the ladies nor the members of the committee had spared any trouble to make the occasion an exceptionally pleasurable one and everything possible had been done to contribute to the evening's success. The dreary old rink was transformed beyond recognition. The big, bare walls were covered with red and white bunting and Union Jacks hung round in glorious profusion. Across the ceiling, iron bars and wooden beams were changed into things of beauty with tiny, fluttering flags, asparagus ferns and festoons of colored wreaths. A large platform had been erected at one end of the hall, the decorations about which were particularly effective. Immense flags were hung across the back, conspicuous in the

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centre being that of Old Ireland. Strings of smaller pennants radiated from the centre of the platform to the sides, and in the back ground was a table laden with yellow flowers. A wheelbarrow covered with Japanese sun flowers, in the midst of which Miss Muriel Weir sat selling sweet peas, was a pretty sight. Indeed the artistic effect of the whole building did much credit to the ladies of the decorating committee, Mrs. W. C. Stewart, Mrs. Finkle and Mrs. Dugit. The flowers, plants and fruit on exhibition were much admired.

An excellent musical programme was rendered and was much appreciated by those who could hear it, and they were only those who were fortunate enough to crush somewhere near the platform. D. W. Karn was the efficient chairman of the evening. Madam Hausch (1st violin), Miss Gurli Hausch (2nd violin), Mrs. Orr (harp), and Mrs. Gurnett (piano), gave several splendid selections. The quartette is well balanced, the artists playing with excellent taste and refinement of expression, extreme care marking the variations of light and shade. Miss Powell's solo, "The Jewel of Asia" was heartily encored as was the duet by the Misses Murphy. Mrs. Merritt, with violin obligato by Mr. Tindale, rendered "Doris" with great sweetness and responded to prolonged applause with a piquant little encore. Everyone was glad of the opportunity of hearing Mrs. Ridley of London, Eng., again, her clear soprano voice showing to excellent advantage in Dudley Buck's "When the Heart is Young." Miss Hogg sang "Ma Honey"—a piece well suited to her contralto voice, in an effective manner. Solos also from Mr. Sykes and Mr. McLeod, familiar favorites, were well rendered and well received. Miss Muriel Weir, in a sparkling spanish gown scored one of the successes of

the evening by her beautiful dancing. The little lady was exceedingly graceful. Miss Bushby and Mr. White were the very capable accompanists.

A pleasing part of the evening's entertainment was the dispensing of refreshments by the ladies. Candies, ice-cream, cake and lemonade were sold for the benefit of the hospital, and a rushing business was done in the sale of toothsome wares.

The receipts of the evening amounted to about \$50.—Sentinel Review.

KINCARDINE.—The above Society has decided to hold its third Annual Exhibition in the Town Hall, Kincardine, during the day and evening of Friday, September 8th. To ensure success it is very necessary that you as a member should do your part towards the exhibition by a liberal display of flowers, foliage and flowering plants. You will please note that any healthy plant will be gladly accepted for exhibition. There must be a large display. A collector will call upon you on Thursday, September 7th, so please have your exhibits in readiness for him. The greatest care will be taken of everything. Mark your pots for identification. On Friday evening a promenade concert will be given in connection with the exhibition. All members contributing plants or flowers are entitled to one ticket of admission to the hall. General admission, 10 cents. The directors have decided that between the hours of four and five o'clock in the afternoon of Friday the school children will be admitted free. Some of the teachers must be in attendance with the children.

S. W. PERRY,
President.

JOSEPH BARKER,
Secretary.

THE rubber tree is a good pot plant, and it grows well planted out in the garden during the summer. As a rule, however, it is not advisable to remove it from the pot. A good soil for it may be composed of three parts good fresh loam, two parts leaf-mold, and one each of sand and well-rotted manure. This plant does well as a window plant, winter and summer, and is a good veranda or porch plant through the summer. It

makes its growth mostly in the summer, at which time it needs a liberal supply of water, but the pot it is in should have good drainage. The leaves should be wiped or sponged frequently to keep them clean, and prevent red spider or mealy bug finding lodgment. The leaves are quite capable of sustaining themselves, and there is no danger of their falling off until they become old and yellow.—*American Gardening.*



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

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

ADVERTISING RATES quoted on application. Circulation, 5,000 copies per month.

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

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

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

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

✧ Notes and Comments. ✧

THE BRANTFORD SOUTHERN FAIR. Geo. Hately, Sec.-Treasurer, issues a fine prize list of \$4,000 in cash, in a neat pamphlet form. The Horticultural Department is an especially full one.

IN GRADING ASTRACAN APPLES for experimental export we have made four grades, as follows:—(1) Small, meaning apples, measuring from 2 to $2\frac{1}{4}$ inches in diameter, which are the smallest that ever should be exported. These were perfect apples, of high color, and very choice for the dessert table. This grade was packed in our regular half case, $4\frac{1}{2}$ inches deep, and which contained just 120 apples. (2) No. 1, meaning apples, $2\frac{1}{4}$ to $2\frac{1}{2}$ inches in diameter, in same case, containing just 80 apples, and (3) A No. 1, meaning apples, from $2\frac{1}{2}$ to $2\frac{3}{4}$ inches in diameter, of which

64 go in a case. The later and firmer varieties will go in bushel cases.

THE BOSCH is a favorite late autumn pear with some growers. Bassette writes in R. N. Y. he has set an orchard of them, because of an old tree 40 years of age, which bore annually two bushels of choice fruit. He planted Sheldon and top worked Bosch upon it, because the Bosch is a poor grower.

THE KOSLOV MORELLO CHERRY seems to be remarkably hardy. Prof. Macoun in his recent report, says that in 1895-6, when cherry trees at Ottawa were killed out generally, this variety was an exception. It was sent out by the Ontario Fruit Growers' Association in 1890, 24 trees having been sent out by Jaroslav Neimetz, Winnitza

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Podolie, Russia. Only five of these have failed, the rest have borne fruit for several years, and we consider it very valuable.

A VERY USEFUL LADDER in the peach orchard is one made after the model shewn in the engraving. Where the land is at all level it is quite easy to wheel this ladder about from place to place, even with two or three baskets of fruit, and it is always safe to climb. So many of the step ladders in use are so heavy as to give one a back ache to carry them about, that it is a pleasure to find one which is easily moved.

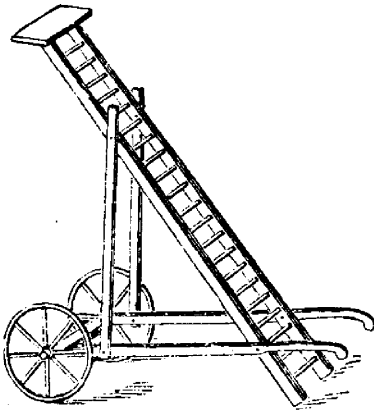


FIG 1654.—A USEFUL LADDER.

THE ENGLISH FRUIT CROP.—The *Gardener's Chronicle*, London, England, dated August 5th, gives very complete reports of the fruit crop, from 350 correspondents. The general consensus is that this year sees one of the worst fruit crops on record. Apples are under the average and bad in quality; and pears are worse still. The same may be said of the plum crop, one of the most important of the English fruit crops, no fewer than 199 correspondents out of 238 reporting the plum crop as below the average, and only 2 as over.

This gives us ground to hope for good prices for apples, pears and plums. The difficulty with us in Ontario is that we have not planted varieties for export, but only for our home markets. We should have just one favorite variety of apples for each season if we would succeed in our export trade in fruit, thus we could begin with the Astracan, and ship in succession Duchess, Tetovka, Alexander, or Wolf River, Blenheim, Crimson Pippin, Wealthy, Ontario and Spy, and thus cover the season with fancy apples.

COTONEASTER VULGARIS is proving itself one of our most satisfactory shrubs at Maplehurst, with its loads of red berries, which hang well into the winter. It deserves to be widely cultivated.

GRAPE YELLOWS.—A mysterious disease has appeared in the vineyards in some parts of the province, which seems to baffle the scientists. The leaves gradually turn white, the vine soon becomes unproductive, and finally dies away entirely. Several vineyards about Grimsby have been more or less affected with it, and many theories have been advanced to explain the cause. No definite conclusion has been reached.

GARDENING is an art too little understood by us in Canada. In the first place, we in Canada try to cultivate far too much land in proportion to their means, and therefore always a part is sadly neglected. We must learn some lessons from our foreign friends, who practice so-called "intensive" gardening, and who aim to make the most of every square inch of ground.

Prince Krapotkine, who has made a

NOTES AND COMMENTS.

careful study of the subject in France, gives a number of instances in the country districts around Paris, where comparatively ignorant farmers have made small market gardens enormously productive. One farm is mentioned by him of two and seven-tenth acres which produced annually 125 tons of market vegetables of all kinds. The owner of this farm, by building walls to protect his land from cold winds, by whitening the wall to secure all possible radiated heat, and by the constant and judicious use of fertilizers, has his little farm in a productive condition from the first of January till the last of December. By simple and inexpensive means he has practically located his farm in the tropics.

PROF. ROBERTSON called on the Grimsby fruit shippers on Thursday the 10th of August, to make plans for a continuation of the experimental shipments of tender fruit. Notwithstanding our urgent pleading for it, no grapes are to be forwarded this season, but shipments of early apples and pears will be continued as freely as possible, because in these there is considerable encouragement. This season pears are especially in demand in Great Britain, because of the failure of the English and French crop. It is proposed to ship chiefly to Bristol, London and Manchester, for these are the finest markets for our produce; Glasgow would be included, but sailings are less regular from this latter port.

It is advised that the cases be not filled too full, so as to avoid bruising the top layer in nailing on the lid, and excelsior or other packing is to be used to make the fruit tight.

The grading for this trade will be A. No. 1, apples over $2\frac{1}{2}$ inches in diameter; No. 1, over $2\frac{1}{4}$; and "Small,"

2 inches or thereabout. Pears will be graded similarly, only using $2\frac{1}{4}$ and 2 inch diameters respectively, while those over $2\frac{1}{2}$ inches will be extra.

Some limited experiments with Crawford peaches may be tried in Veneer grape baskets, to hold one dozen each. They will be packed in cotton batting. Tomatoes are just now too cheap in England to be worth shipping.

A CHEAP HEATER.—So many of our readers are amateur horticulturists, with little or no convenience for keeping their plants safely through the cold parts of our severe winters, that many of them will be pleased to see reproduced from *American Garden*, S. G.'s article and illustration of a cheap heater.

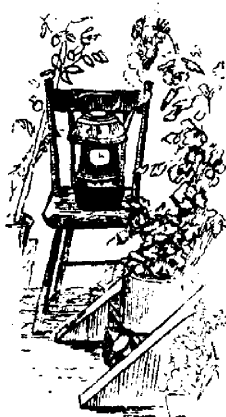


FIG. 1655.

The very picture of the enormous iron monsters advertised, with their many valves and doors, strikes terror to a timid soul, and she gives up the idea of having a greenhouse, for where is the money to pay even for a small heater? But take courage and examine the picture of my boiler, and see if you can't take your beloved plants through zero weather. My conservatory, 6 x 13 feet, with double windows, is connected with the parlor by a large arched door. In

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his room is an aldine grate. A register is in the chimney at the back of the conservatory, but the heat is not quite enough, so, I have a small oil stove, called the Economist, and a tin tea kettle. After lighting the lamp and filling the kettle the water will boil in ten minutes. Moisture gathers on the glass, and there is a pleasant heat. The plants flourish. I have abutilons, geraniums, carnations and ageratums in bloom, and the chrysanthemums are splendid. Ferns, too, and lycopodium are doing nicely. You have only to be watchful that the lamp does not smoke and the water does not boil out of the tea kettle, and your plant will flourish as well as in a more aristocratic greenhouse.

CONDITIONS FOR WINTER KILLING.

—A heavy peach crop in the Niagara District is rather strange after such a severe winter which killed the roots of the trees themselves in many cases. Sometimes the peach buds all succumb at a temperature of 10° or 12° below zero, while the trees themselves are unhurt, but this last winter they have endured 18° below zero without injury to the blossom. Bailey thinks that the *oœq spnqme* less hardy in proportion as they are more developed. This explanation is generally concurred in, so much so that of late it is becoming a practise to whiten the buds with lime in early spring to prevent their swelling under the influence of the sun which often shines with considerable power even in winter.

The winter killing of the trees themselves last February was no doubt due to the severe cold which continued steadily for about three weeks, without any protection for the roots of snow or other material. Evidently, the wise

thing is to mulch our tender trees well in the fall, or else sow a cover crop in mid summer, to be plowed under the following spring. This latter method is doubly remunerative, for besides the winter protection it is the surest method of enriching the soil and promoting wood growth. At Maplehurst we sowed Crimson clover three years in succession in the month of July, and ploughed it under in May, with a light dressing of wood ashes and bone meal. The portion treated was planted to Spy, Bartlett and Imperial Gage, trees which had a record for being unproductive, this season the finest apples and plums are being produced on these very trees.

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APPLES were last year exported to Helsingfors, on the Gulf of Finland, by the Imperial Produce Co., Toronto.

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FINE PRIZE LISTS have been issued by the Industrial Fair, Toronto, H. J. Hill, Secretary; the Western Fair, London, Thos. A. Brown, Secretary; the Prince Edward Agricultural Society, Thos. Bog, Picton, Secretary.

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THE SEASON OF FAIRS is close upon us, and no wide-awake fruit-grower should fail to inspect the exhibits of fruits whenever possible. Comparing notes in this way is the surest method of learning about the best and most profitable varieties. This is the especial duty of the intending planter, who has not had much experience, and who would make most serious blunders in planting if he did not first inform himself upon the characteristics and qualities of the kinds which he proposes to set in his orchard.

NOTES AND COMMENTS.

SMITH'S SEEDLING PEACH, NO. 1, referred to on page 367 of this Journal for 1898, continues to make a favorable impression. Ripening between the 15th and 25th of August, just between Hales and Crawfords, it fills a gap not filled with any dessert peach of equal quality and size. Samples brought us August 23rd from the original tree, which is growing in Mr. R. T. Smith's garden at Hamilton, averaged $2\frac{1}{2}$ inches in either diameter. The skin is cream, beautifully dotted and shaded with red, and may be peeled off with the finger; the down is very fine, soft and velvety; the suture is distinct and terminates in a small black apex. The flesh is white, tender, juicy, rich and delicious; the stone is perfectly free.

OUR REPORT. After long and patient waiting our subscribers are now receiving our report for 1898. But we

are confident that their patience will be rewarded when they review it, for it well possesses exceptional value. Combining four reports in one volume, (1) the Fruit-growers; (2) the Entomological Society; (3) the Fruit Experiment Station; (4) Supt. of Spraying; all bound in cloth, it certainly forms a volume of great value, well worthy a place on the shelves of the best selected libraries. The descriptive work on "Fruits of Ontario" is but in its initial state; it is a work that must take years to complete, if indeed it ever is completed. It is evident that we must have personal knowledge of each variety, both as to characteristics of fruit, and habits of tree, in order to give anything like an accurate description, that will also be of use to others. The writer invites the criticism of the readers of the CANADIAN HORTICULTURIST in respect to his work.

FRUIT DRYING.

There is a large shrinkage in curing green fruit, and comparatively few growers are advised of the actual loss by evaporation. The shrinkage varies with the quality of the fruit and also according to the humidity of the atmosphere in the localities where the drying is done. In the Sacramento and San Joaquin valleys and the foothills of California the following tables are approximately correct, as to the number of pounds of green fruit required to produce one pound of dried fruit:

Apricots, Moorpark, . . .	$5\frac{1}{2}$ to 1
Apricots, others, . . .	6 to 1
Peaches, Muir, . . .	$3\frac{3}{8}$ to $4\frac{3}{4}$ to 1
Peaches, Crawford, . . .	$5\frac{1}{3}$ to $6\frac{7}{8}$ to 1
Peaches, Salway, . . .	$4\frac{7}{8}$ to $5\frac{1}{2}$ to 1
Peaches, Cling, . . .	$6\frac{1}{3}$ to $6\frac{5}{8}$ to 1

The general average may be approximated as follows:

Apricots, all varieties, . . .	$5\frac{3}{4}$ to 1
Peaches, all varieties, . . .	6 to 1
Pears, all varieties, . . .	$7\frac{1}{4}$ to 1
Prunes, French, . . .	$2\frac{3}{4}$ to 1

The general cost of curing fruit ranges from 1 to 2 cents per pound. In the large plants where the investment is considerable and help is hired, the average cost of preparing and curing apricots is 2c. per pound, and on peaches $1\frac{1}{2}$ c. per pound on the cured fruit. The cost of cured fruit per pound at different cost price for fresh fruit per ton, allowing for varying shrinkage, is as follows:

FRUIT.	FRESH.	CURED.
Peaches, . . .	20	$6\frac{1}{2}$ to 7c.
" . . .	25	$7\frac{3}{4}$ to $8\frac{3}{8}$
" . . .	30	9 to $9\frac{3}{4}$
Apricots, . . .	20	$7\frac{1}{4}$ to $8\frac{1}{4}$
" . . .	25	$8\frac{1}{4}$ to 9 $\frac{1}{4}$
" . . .	30	$7\frac{7}{8}$ to $9\frac{7}{8}$
" . . .	40	$10\frac{1}{2}$ to $12\frac{1}{2}$

—Fruit Trade Journal.

✧ Question Drawer. ✧

Shaffer and Columbian.

1103. SIR,—What is the difference between Shaffer's Colossal and Columbian raspberries? Is the parentage of this variety known? J. M. B.

Shaffer originated with George Shaffer, of New York State, in 1869, and was introduced by Chas. Green, of Rochester. The late T. T. Lyon thought it a hybrid between our two natives, *Occidentalis* and *Strigosus*.

Columbian resembles *Shaffer* very much both in fruit and foliage. It is said to be a seedling of the Cuthbert, grown near Gregg.

Both these varieties are vigorous growers, and the berries very large, purple, in color, and excellent for canning.

Aphis on Honeysuckle.

1104. SIR,—I enclose a leaf from an English "Honeysuckle." The plant is infested with a bug of some kind and we find it covering the vine. Will you please inform me what it is and how to get rid of it?

The insect is a plant-louse, which has produced the honey-dew noticeable on the leaves, and the remedies recommended on the C. E. F. spraying calendar for the apple aphid will be effectual for this one.

J. FLETCHER.

Central Experimental Farm.

Oyster Shell Booklouse.

1105. SIR,—I am sending you a twig cut from a neighboring orchard. Can you tell me what it is? Is it or is it not the dreaded San Jose scale? The tree from which the twig is cut is literally covered with parasite. If it is as destructive as it is ugly, and I presume it is, will you please tell me how to destroy it? Will anything short of burning the tree destroy, and how can I prevent it spreading?

H. H. KING.

Port Hope.

This is not the San Jose scale, indeed it has very little resemblance to it, being of an entirely different shape, the latter is round with a tiny dent in the centre, the former is the shape of an oyster

shell. Then, too, the San Jose scale is almost microscopic.

This is the Oyster Shell booklouse, unfortunately only too familiar to Ontario apple-growers. Indeed very few of the older orchards are free from it, and some of them are almost ruined by it. Under each of these oyster shaped scales will be found masses of eggs, varying from 20 to 100, which hatch out in early June, and creep forth to a fresh part of the bark, where they begin sucking and soon become fixed, subsisting upon the sap of the tree. The best means of destroying these scale insects is by spraying with kerosene emulsion. Perhaps the best time to apply it is about June 1st, when the young lice are moving about.

Woolly Aphis.

1106. SIR,—Would you kindly give me a remedy to extinguish the woolly aphid, through your valuable paper. I have tried pure coal oil No. 1 spray (lime, sulphur and salt), also Paris green in bordeaux mixture, but they are thriving better and spreading more every year, and I do not wish their company whatever, although it is very lonely here.

N. BUTCHART.

Port Moody.

This insect, known to entomologists as *schezoneura lanigera*, is of the same species as the apple root louse. It very commonly affects the common thorn bush in Ontario, from which it spreads to various other fruit trees. Under each patch of white down will be found one large female with her young, and late in the autumn she deposits eggs for the following spring, which are almost microscopic. Both young and old derive their nourishment from the sap of the tree, thus weakening its growth. An excellent wash is made of soft soap reduced to the consistence of paint by the addition of a strong solution of washing soda in water; spraying with kerosene emulsion will also be found efficacious.

* Open Letters. *

Gooseberries.

SIR,—I should think this would be a good section of the country to raise gooseberries for market. I have a very large gooseberry growing in my garden, I have had it for over twenty years and it never fails to give me a good crop of berries. Mildew is a thing unknown to me, I have never seen it, I do not know the name of the berry in question. I sent you six of them by mail in July, to see if you could give me the name of them. I don't know if you received them. I am also testing some other varieties, viz.: The Downing, Pearl, Whitesmith, Triumph and Industry. I intend to give these all a fair trial. I don't raise any fruit for market, but I am testing several kinds of fruit.

A. BRIDGE,
West Brook, P.O.

Hardy Roses.

SIR,—In July number of the HORTICULTURIST, rose growers are invited to give a list of hardy roses suited to cold districts. I am able to speak from experience, having wintered about fifteen varieties through last season, which was the coldest for many years, the thermometer going down to 28° or 30° below zero.

The following have proved very satisfactory to me; Madam G. Luizet, Jacqueminot, Paul Neyron, John Hopper, Magna Charta, Earl of Dufferin, Marshal P. Wilder, King of Sweden, and Gen. Washington. This list gives a variety in shade and delicacy of perfume worthy of a place in any garden. All roses are the better for winter protection and will repay the grower for the trouble of laying down. I bend them down, lay a sod on the tops and cover with straw. I would advise amateurs to purchase H. P. roses on their own roots, they prove less troublesome as you are always sure the new growth is flowering stock. I have wintered tea roses outside here with fair success, but they need more care and should be completely covered with sods. I have added some new plants to my list which I may be permitted to report on in the future.

W. A. BROWNLEE.

Report of Plants.

SIR,—I will, in the following give a short report of some of the plants and trees received since the year '73.

'79. Salem grape still living, bears well, rather late for this section, still ripens fairly well.

'75. The F. Beauty pear is doing well, get-

ting to be a large tree, bears heavy, but black spots and cracks open badly.

'76. The Glass plum is a fine smooth bark, thrifty tree, hearty, and is a moderate bearer, ripens late.

'77. The purple raspberry is still on the place, a good bearer, the yellow one is thrown out as worthless.

'78. The hybrid grape (Burnet) is a farce at the best, though strong grower, too late, coarse, sometimes bearing two kinds of berries on the same bunch, divided into two periods of ripening. The small berries are about the size of a Delaware, ripen about a week earlier than the remainder of the bunch, which are a large berry; no use.

'79. The Canadian Hybrid apple is a splendid winter apple; lost my tree; mice girdled it, though it bore a few good crops.

'80. Congress Pear; tree did not grow, but from grafts taken from it I now have a lot of big bearing trees, extreme bearers every year, fruit enormous size, high flavored, little tart.

From the year 1880 I will only report in bulk. The winter St. Lawrence apple tree is dead, too weakly to live, caused by having bad, dried up roots. but from grafts taken from it I now have a large bearing tree of excellent winter fruit. The remainder of the trees and berry plants, and so forth, are nearly all dead or thrown out as worthless, excepting the two last plums are living. The Improved Lombard plum of this spring is the best tree I got for a long while; it's making a good growth; I hope to have good luck with it.

Report on fruit in general apples in our section are a very light crop. Pears ditto. Early cherries such as Richmond, were well loaded, but the trouble is, people don't plant enough of that kind of trees, cherries would again do well if more trees were planted. Plums are a small crop, still enough for home use. All kinds of berries are plentiful.

D. B. HOOVER,
Almira, Ont.

The Plant Distribution.

SIR,—I would say discontinue the plant distribution amongst the members or readers of the CANADIAN HORTICULTURIST, and lay out the money to something that will make the Journal more showy by adding well got up lithographs of the best new as well as old fruits; our aims should be in the interest of fruit culture, the plants are very often worthless by being crippled and dried up before they reach their distant receivers.

D. B. HOOVER,
Almira, Ont.

A Report From Ireland.

SIR,—I do not think much of the Gault raspberry you sent me. It seems to be a small, poor blackberry, inferior to what we have wild here in our roadside hedges. I should much like to hear your opinion or that of some of your correspondents who have tried them, on the Honeyberry. Now I think setting fruit in my garden, and the Iceberg White blackberry, which I think is one of Luther Burbank's raising, though I did not have it from him.

W. E. GUMBLETON.
Belgrave, County Cork, Ireland.

Fruit in Lake Huron District.

SIR,—The very cold weather we had the latter part of February and first part of March did a great deal of damage to the wheat fields, but no injury to the fruit, large or small, that I can see in this section. I see that Mr. Race of Mitchell states that raspberries were winter killed in that part; here no harm was done to any varieties. We had a good crop of strawberries, gooseberries, currants and raspberries; also a fair crop of cherries, but the birds take a lot of the early sorts; in fact we cannot get any to ripen. I find the Rockport is exempt from their attacks. Plums are a very good crop and very free from the curculio; pears are a very light crop, and apples, the most valuable of all fruit, are of fine quality. This year they are very clean and free of the codling moth. I think the severe cold must have settled them and the curculio. Apples are not so very plentiful, but good in quality. A number of the trees had no blossom. The King of Tompkins I have found hitherto shy bearers, but last year they bore heavily and again this year are yielding well. The grape vines were damaged to quite an extent. The hard frost we had gave my boxwood a sad scorching, and injured the Baltimore Belle so badly that there was no bloom. The *Deutzia crenata* suffered severely. I see by the reports that the Tent Caterpillars have been numerous down east; I find in this section they have been comparatively scarce. Our spring grain of all varieties is a heavy crop; potatoes also will turn

out well. The bugs are not very numerous; likely the cold affected them also. We had I might say no spring; it turned from winter to summer suddenly. Although vegetation was late in starting, the growth was rapid when it began. While east of us rain was much needed, in these parts we had an abundance of it, enough and to spare; several heavy rain falls that damaged some of our early potatoes and peas, which together with hot weather caused the weeds to grow rampant, and we could not keep them down or kill them. I am sorry to say that farmers generally don't try to do it, seemingly, not thinking that the weeds rob the soil to a very great extent—so much so that not more than half a crop can be grown on a good many places. It is really disgraceful to see some farms, actually covered with weeds of every description, which are constantly on the increase.

WALTER HICK.
Goderich.

The Export of Peaches.

SIR.—In talking to Mr. Davies Allan commissioner of Cape Town south Africa, on Saturday last, I found out that they ship fruit from there to England in first class condition, although the fruit is double the time on the voyage that ours are. He told me that the secret in shipping peaches was never to let the hands touch the fruit. They have pinchers made for the purpose that fits round the joint of the peach fruit when they give it a gentle twist and the fruit separates from the tree and it is placed into a shallow box or crate and they never commence to pick until about four o'clock in the afternoon and each box or crate as it is filled is placed into refrigerator cars on sidings run from the main track into the orchards, when filled they are sent on their long journey in cold storage and it takes eighteen days for the peach to reach London England, when they get good prices for the same. Would not a trial of this kind be of much interest to our fruit growers in Ontario.

R. CAMERON.
Niagara Falls South.

DESTROYING ANTS.—Make holes with a crowbar or convenient stick, from six inches to one foot deep and about fifteen inches apart, over the hill or portion of the lawn infested by the ants and into each hole pour two or three teaspoonfuls of bisulphide of carbon, stamping the dirt into the hole as soon as the liquid is poured into it. The bisulphide

of carbon at once vaporizes and, permeating the ground, destroys the ants but does not injure the grass. One should remember while using this substance that it is highly inflammable and should not bring near it a flame or even a lighted cigar. Mass. Exper. Station, in *Minnesota Horticulturist*.

SELECTING FRUIT FOR THE PARIS EXPOSITION.

The following circular has been sent out by the U. S. Department of Agriculture, and may give some useful hints for us also :

To call special attention to the great variety of fruits now procurable in the United States in quantities sufficient for the export trade, it is proposed to install and to maintain during the entire period of the Exposition, a representative exhibit of American fresh fruits. To accomplish this it will be necessary to provide a supply of choice specimens of the more durable fruits (such as winter apples, pears, citrus fruits, cranberries, nuts, etc.), of the crop of the present season (1899) for display at the opening of the Exposition and until specimens of the crop of the year 1900 are available. It is intended that all the more important fruit growing districts of the United States shall be represented in this exhibit and the active co-operation of growers and other persons interested is therefore solicited.

You are cordially invited to participate in this exhibit by contributing specimen fruits of the crop of 1899, grown either by yourself or others in your section, and to prepare to send choice specimens of such varieties as you may desire to exhibit of the crop of 1900 as they mature. The exhibit will be collective, but each contributor will receive the fullest credit for what he shows and the same consideration from the Jury of Awards that he would have if individual space were allotted him. Collections made by States, horticultural societies, boards of trade, shipping associations, railroad companies, etc., will have the same consideration as those from individuals.

KINDS OF FRUIT DESIRED.

1. As the kinds of fruit grown in the different parts of the country differ widely in number, season and character, it is suggested that for the opening exhibit (of the crop of 1899) only such varieties be chosen as possess special merit as market, dessert or culinary fruits in your section. Special attention should be given to standard varieties that are likely to keep well and be adapted to the requirements of the export trade.

Small lots of choice specimens of promising new or little known varieties are also desirable and may be included.

SELECTION OF SPECIMENS.

2. All specimens for exhibition should be selected early in the picking season, as it is of great importance that the specimens be not over-ripe when shipped. Symmetrical, well-grown specimens that are characteristic of the variety in the region, should be given preference to such as are over-grown or abnormal in other respects. Apples and pears should be picked as soon as the seeds turn

brown, even if they have not attained full color. All specimens must be hand-picked, preferably into padded baskets and must be free from bruises. They must have their stems attached and be free from insect injury or fungous disease, to be entitled to shipment to Paris. In no case should specimens be rubbed or polished.

QUANTITY.

3. To allow for loss in storage and in transit, a quantity of specimens of each variety should be provided of the crop of 1899. In general not less than one peck of a standard variety of apples or one-half peck of a standard variety of pear, should be sent by an exhibitor. In case of a promising new sort or a little known variety, as few as ten specimens may be forwarded, if in perfect condition. Where collections are made in localities that grow but few varieties and those on a large scale, at least one barrel of each variety should be provided, though the fruit may be in small lots furnished by different individual exhibitors.

CARE AND PACKING OF SPECIMENS.

4. After being picked the fruit should be handled with the utmost care and shielded from exposure to heat or frost. When the collection of specimens is completed, they should be double wrapped with paper and carefully packed in layers in clean, new apple barrels or boxes. The several lots in each package should be separated from each other by large sheets of paper and each should be labeled with the name of the variety, the locality, and the name and address of both grower and collector.

Labels and wrapping paper will be furnished to intending exhibitors without charge, upon application.

SHIPMENT.

5. Each package should be plainly marked with name of shipper and nature of contents, and forwarded by express or fast freight to such storage point as shall be hereafter designated. It is probable that exhibits of this character will be assembled at two or more storage centres, to be held until date of final shipment. In this case your exhibit will be ordered shipped to the most accessible point. Shipping labels, properly addressed, will be furnished.

In order to complete the necessary arrangements for the forwarding and reception of exhibits, it is important that you indicate at an early date the probable number of varieties and quantity of specimens that you will desire to contribute and the approximate date when they will be ready for shipment.

Photographic exhibits that illustrate characteristic features of the horticulture of your region are also desired, and circulars of information concerning such will be sent on application.

THE APPLE CROP.

UNITED STATES.

Messrs Duncan Bros., New York City, report concerning the U. S. apple crop as follows :

ONTARIO AND NOVA SCOTIA.—A full average crop, the quality been the best known for several years.

NEW ENGLAND STATES.—A light crop.

WESTERN NEW YORK AND HUDSON RIVER VALLEY.—More apples than last year, of good quality and consisting largely of Greenings.

MICHIGAN.—More than last year and of much better quality.

ARKANSAS, ILLINOIS, MISSOURI AND KANSAS.—From one-quarter to one-third of an average crop. Quality in some sections good, and in others only fair.

VIRGINIA.—A half crop of fair quality.

CALIFORNIA.—A larger crop than last year and of better quality.

These conditions indicate the necessity of great caution in buying this crop. Buyers should use great care in buying and packing and grading, exporting only fine clean fruit, carefully packed and at moderate first cost. The purchase of inferior and carelessly packed fruit, will almost surely be followed by unsatisfactory results.

The following estimate is given by Mr. Arthur P. Fowler, August 5th.

Arkansas	60%	New Jersey	75%
California	75 "	New York	40 "
Colorado	50 "	Nebraska	40 "
Illinois	45 "	Ohio	65 "
Iowa	50 "	Pennsylvania	45 "
Kansas	45 "	Virginia	65 "
Kentucky	25 "	West Virginia	60 "
Maryland	60 "	Wisconsin	35 "
Michigan	45 "	Washington	50 "
Missouri	40 "	Canada, Ont	65 "
New England	25 "	Nova Scotia	90 "

NEW YORK STATE.—The *Rural New Yorker* says :

The apple crop of western New York largely determines the price for that fruit in the eastern markets. The condition of the Baldwins decides the matter, for that variety is in an immense majority. Baldwin has had a hard season this year, and reports are all one way. Taken as a whole, the apple crop from this great section promises to be less than half, and the chief loss is in red apples. Greenings are in better condition, but few people appreciate them. Nature packed some of her richest sauce inside the skin of a Greening apple, but there is a craze for a red skin, and this fine fruit is often neglected. Early apples are promising, but buyers are likely to part with considerable money when they buy their late Fall and Winter fruit. Ben Davis may come to the front as usual, but reports indicate that even this hardy citizen feels the rheumatism in his twigs and branches, as the result of last winter's freeze.

PROPAGATION OF THE GOOSEBERRY.—Seeds for the raising of new varieties, says Professor Bailey, should be sown as soon as well cured in loamy or sandy soil ; or they may be stratified and sown together with the sand in the spring. Cuttings six to eight inches long, of the mature wood, inserted two-thirds their length, usually grow readily, especially if taken in August or September and stored during winter in the same way as currant cuttings. Single-eye cuttings may be used for rare kinds. Stronger plants are usually obtained by layers, and the English varieties are nearly

always layered in this country. Mound-layering is usually employed, the English varieties being allowed to remain in layerage two years, but the American varieties only one. Layered plants are usually set in nursery rows for a year after removal from the stools. Green-layering during summer is usually practiced for new or rare varieties. Strong plants may also be produced by tip-layering, as in the black raspberry. If it is desired to train the weaker gooseberries in tree form, they may be grafted upon the stronger growing varieties.

SWEET PEAS IN POTS.

I SUPPOSE there is no more popular or useful annual than this ; its fragrance and beauty, combined with the diversity of color to be obtained, renders it useful for all kinds of decorative work. Yet how seldom one sees blooms out of season ! Many other subjects less beautiful and useful are forced. Yet none are more amenable to forcing or yield a better return. As they are much appreciated here for dinner table and other room decoration I grow a batch in pots, and generally get them in bloom a month before those outside. I have now been picking flowers for a week from plants grown in unheated houses. My method is to sow five seeds in a 60-sized pot about the first or second week in February. These placed in a peach house will germinate and grow steadily and strong, and in due course are shifted into 32's, keeping them as near the light as possible, and supporting the plants with twigs. This year I gave some more pot room, using 16's but so far I have observed no better results than from small pots. Growth is stronger, but they are not so floriferous. When about to bloom I remove them outside and stand them in front of a greenhouse or fence. They produce plenty of bloom till outside ones are ready. If I had much conservatory work to do I should use these, for I think a group of Sweet Peas pretty, graceful, and light, and always command admiration.

The dwarf Cupid, both pink and white varieties, have been much abused since their introduction a few years since ; but I like them very much as pot plants notwithstanding their little eccentricities such as dropping their blooms when on the point of expanding,

and the very short peduncle. Three plants in a 32-sized pot make a nice bushy little specimen, and for edging of stages and walks and if allowed to grow naturally, without any stakes, they are very effective, and remain in bloom several weeks. Careful watering and a shady and airy situation, when in bloom, will prevent many of the flowers falling.

I have tried most of the best varieties and find them all very amenable to pot culture. I have, this year, in addition to the dwarfs just mentioned, Mars, a brilliant red ; Venus, very delicate straw color, a charming flower ; Black Knight, one of the best darks I have yet grown ; Duke of Sutherland, a dark claret standard with bluish wings ; Duchess of Sutherland, pinky-white, blooming pure white when fully expanded ; Lady Mary Currie, a delicately shaded bronze-pink, a lovely color ; Prince of Wales, bright rose-self, richly colored ; Chancellor, orange-pink ; Lady Nina Balfour, a beautiful mauve, very effective where this shade is favored ; Colonist, a rosy-lilac, very good. These are all produced on long stems and are of a good form.

Copious supplies of water are needed ; and weak manure and soot water aid the production of fine blooms.

A very pretty and light arrangement of cut blooms for dinner table decorations may be made by using small, developed growth of Asparagus—now in plenty on outside beds as foliage—associated with the tendrils of the pea itself, interspersing small sprays of *Gypsophila elegans*. The prettiest possible effect may be produced by the judicious use of these very simple materials.—*Gardening Illustrated*.

BAKED APPLES FOR BREAKFAST.

THE true, not the new, should be the motto of those who write or speak about the apple—the fruit longest in use by our branch of the human race. There are certain simple principles that must be given, line upon line, precept upon precept, to every fresh generation of men, or rather should be given just about that time that the generation is beginning to lose its freshness and to call on the doctor for remedies. Every well-to-do man of good digestion and appetite tends to eat too much meat every day after his twenty-fifth birthday, and one of the values of fruit, the apple above others, is the ease with which it may be made an “anti-meat-for-breakfast” article. With baked apples and cream and good roast potatoes on the breakfast table, the dish of cold or hot meat becomes subordinate, even if it is not entirely abolished. Men of forty, the age when every man not a fool is supposed to have acquired the right to give medical advice, at least to himself, will relate their various wonderful discoveries and remarkable self cures just as they had given up all hope; and in general these reduce themselves to this: “I ate less meat, but I did not know it, and I took a great deal more fruit, especially apples.”

Baked apples for breakfast tend to reduce the amount of meat eaten, if we are inclined to eat too much, and to supply the system with mineral foods and the digestive tract with acids. People who eat too much food are not to be advised to eat baked apples as a mere addition to the breakfast, and those who need a substantial meal must not let the baked apple interfere with the taking of solid food. As a rule those who eat three meals per diem will wisely have the nicest dish of baked apples obtainable for breakfast. It is a piece of simple wisdom worth pages of ordinary medical literature. The digestion of milk is somewhat delayed by sour fruits, but pure rich cream is not milk, and taken with a juicy baked apple, what dish can be more tempting and wholesome?

If you are twenty-eight or thirty-five, inclined to ring the doctor's bell and talk with your druggist, try this prescription. You may put sugar on the apples, but we shall not sugar coat the remedy with any mystery or any claim to novelty; we merely turn to your good wife or your housekeeper, and ask whether she is careful to give you nice roast apples and cream, and to make the breakfast meat dishes as little tempting as may be.—Amer. Garden.

* Our Book Table. *

SOUTHERN FAIR, BRANTFORD.—We are pleased to notice that the Directors of the Brantford Southern Fair are giving prominence to the Horticultural Department in their prize lists, a copy of which is now before us, and from which we see that they are offering over \$4000 in cash prizes for excellence. We would recommend fruit growers, florists and market gardeners to write to the Secretary, Mr. Geo. Hately, Brantford, for prize lists. The Ladies' Board of Directors, which has

been a feature of Brantford Fair for some years, is again in charge of that department. This year the prizes are all cash with the exception of a high grade lady's bicycle, valued at \$75, which is given to the exhibitor taking the most prizes in the Ladies' Department.

Special arrangements have been made with the Railway Co's. for carrying passengers and their exhibits. Particulars are to be announced in the regular weekly papers.

The Markets.

Apple Markets.

Messrs. W. Dickhuth & Son, of Hamburg, write us as follows:—

Without any of your esteemed favors to apply to, we are to-day in the position to give you reliable news about the prospects of the apple crops in Germany and Austria, and can inform you that we shall have very few apples all round, which will hardly be sufficient to supply the apple-wine manufacturers. Apples for table-use we shall hardly have any and will have to depend upon apples being shipped from your side.

Herewith we give you the particulars from the different sections:

Steiermark,	$\frac{1}{2}$ of a crop
Ober & Nieder-Oesterreich,	$\frac{1}{2}$ " "
Tirol,	$\frac{1}{3}$ " "
Switzerland,	failure
Saxonia,	" "
Bohemia,	nearly failure
Galizien,	" "
Thuringia,	medium crop
Hannover,	" "
Altenlande,	$\frac{1}{2}$ of a crop
Bavaria,	$\frac{1}{3}$ " "
Württemberg,	$\frac{1}{3}$ " "

From all above places no table apples are to be expected to be sent to the consuming cities and towns. From Belgium and North of France we learn they expect a full crop and Holland $\frac{1}{2}$ of a crop. These countries ship their apples to England with the exception of Holland from which country also some apples will go to the South of Germany for manufacturing the much consumed apple-wine.

As stated above we shall have to depend upon shipments of apples for table-use from your country and therefor can advise you to make freely, shipment of your first keeping apples as soon your winter apples are ready for shipping. Ship no early apples. We should have written to you sooner, but we wanted to give you perfect and reliable news, which we could not do before now.

Hamburg, 3rd Aug., 1899.

Messrs. Jas. Adam, Son & Co., of Liverpool, writes:—

As is our usual custom, we once more take the opportunity of offering a few remarks on the outlook for American and Canadian apples for the coming season, as viewed from present aspects. In doing this we naturally have to take into account the extent of our own and

Continental crops, at the same time these are not as important as is generally supposed, for the simple reason that both American and Canadian apples have become a necessity to the British public, and when once they make their appearance, preference is always shown for them.

First, then, as regards our home crop, we learn, on summarising the comprehensive reports published in the *Gardeners' Chronicle*, that there seems to be a general scarcity of fruit this year. We need not go into details, but in some districts there is said to be what may be considered an average yield, while in others—and these by far the larger proportion—the crop is decidedly under the average, which, in the aggregate, means that the marketable quantity of a certainty will only be moderate.

On the Continent, however, things appear to be somewhat different, as, from enquiries made, we understand there is a good crop in Holland, Germany and Belgium, while in France, also, there seems to be a fair quantity of fruit. Assuming, therefore, that these reports are reliable, it would appear as if the deficiency in our own crop would be, to some extent, made up by the better yields on the Continent. Still, for all that, we do not apprehend much opposition, even from these combined sources; in fact, they can only affect Falls in any case, as the English fruit especially is not of very good keeping quality, and from all accounts shipments of Fall varieties are not likely to be on a very large scale this year.

Coming, then, to Winters, the most important point for consideration is the extent of supplies available, and as this will be better known by operators themselves, it remains for them to decide as to how far they are justified in operating. So far as we can see, the prospects are very favourable, especially if (as we are led to believe) the crop is not very abundant, and we look forward to a mutually satisfactory season.

Needless to say, the prices, after all, will depend very largely upon the quality of the fruit, and we rely upon shippers sending only their best stock forward, remembering that the cost of transport, etc., is identically the same on an inferior as on a good barrel. The practice of "topping" should rigidly be avoided, as honest packing always pays in the long run; and to those of our friends who have already established brands on this market we would point out the necessity of keeping up the standard of their packing if good results are to be ensured.



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ACTUARY.

Sept. 121.

**J. K. MACDONALD.**  
MANAGING DIRECTOR.

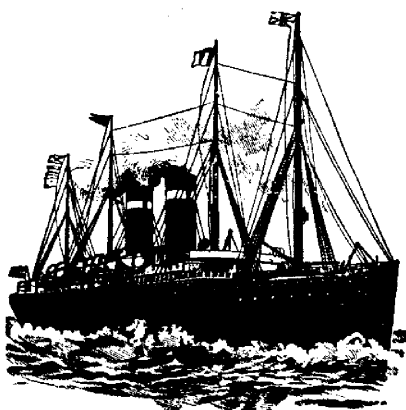
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somewhat in their power to endure a chilly or  
dry atmosphere, but all thrive better where their  
requirements can be fully met. Give them  
plenty of light, but avoid direct sunlight during  
noonday in summer. Secure good drainage by  
a layer of charcoal at the base of the pot, and see  
that the plants are not over-potted. Give small  
plants small pots, and shift into larger ones as  
they grow. Always rest the Rex and Tuberous  
Begonias for a few weeks in winter, during which  
period keep the soil barely moist, and the pots in  
a rather cool place, say 50°. A partial rest should  
also be given the other sorts when their condi-  
tion indicates that rest is needed.—Park's Maga-  
zine.

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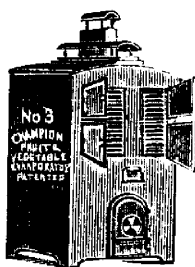
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