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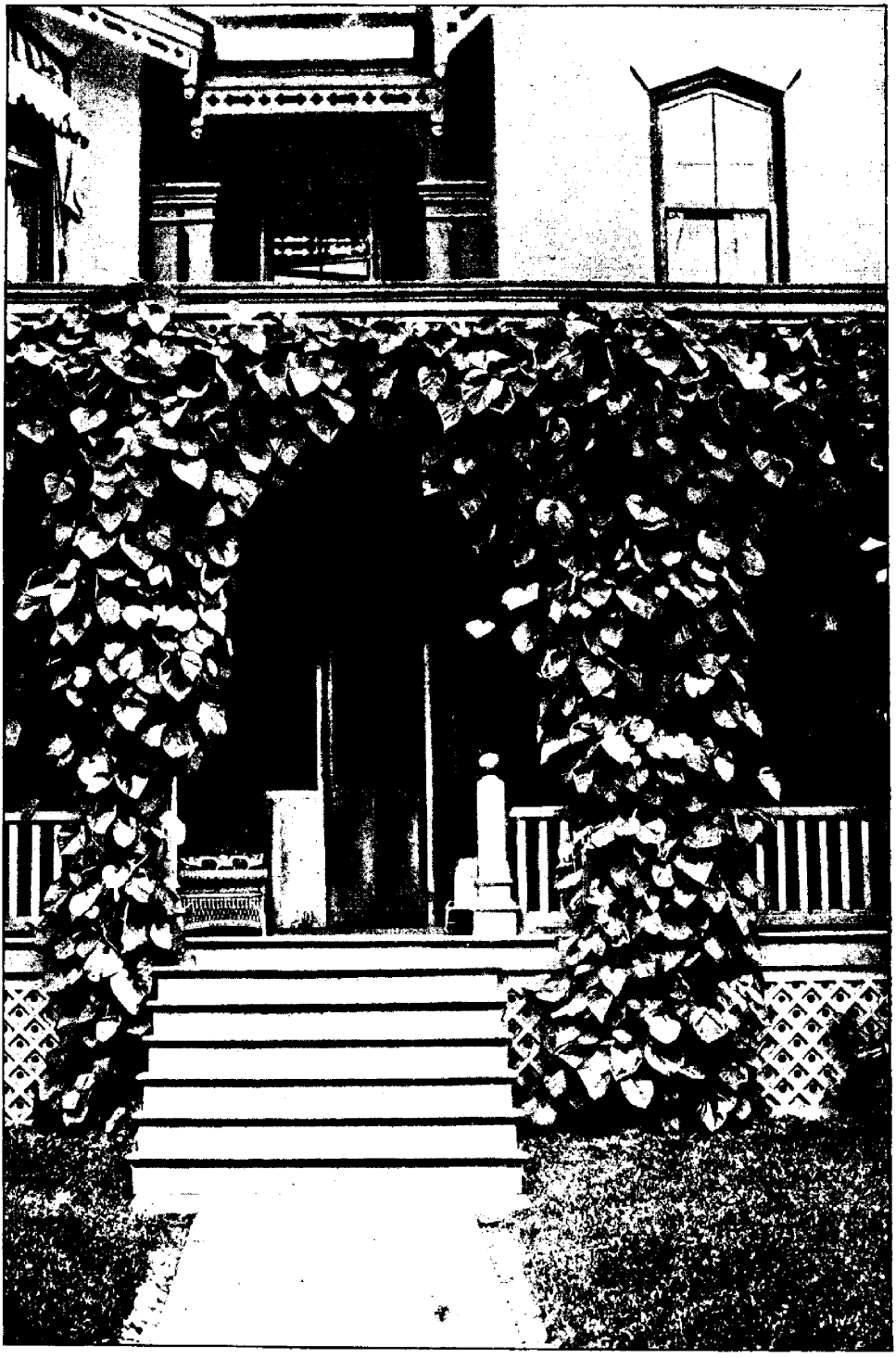

ARISTOLOCHIA SIPHO.—(Birthwort or Dutchman's Pipe.)

THE
CANADIAN HORTICULTURIST.

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HARDY CLIMBERS.

Give fools their gold and knaves their power;
Let fortune's bubbles rise and fall;
Who sows a field or trains a flower,
Or plants a tree is more than all.
—*Whittier.*

WHEN one considers the charms of forest and garden, and the profusion of decorative trees, plants, and shrubs, of which Dame Nature has been so lavish, we wonder at the cold neglect with which three-fourths of the world regard it all. Engaged from early morning till late at night with the severe cares of business, either in the office, or on the farm, all is forgotten except what contributes to food or clothing; and the rich treasures of the garden are almost despised. Let the savage be satisfied with animal comforts, but let us, who live in a more favored environment, live on a higher plane, and feed our soul's higher instincts with those beauties of nature and art which are exterior, and which will broaden our ideals and enlarge our conceptions of the beautiful in Nature and Art.

We desire in this article to briefly mention a few of the climbing vines, which, though already familiar to many of our readers, yet cannot be fully appreciated, or we would more often see them decorating our houses, both in town and country.

ARISTOLOCHIA SIPHO.

On page 123 of Volume XX we made reference to the beautiful effect of climbers and other ornamentals in the case of Mr. John Hayden's home at Cobourg. One of the climbers on the gable was Aristolochia Sipho, or Dutchman's Pipe, and we give as our frontispiece a near view of this creeper, which is counted among our most beautiful native climbers. It is called sipho, or tube bearing

from the peculiar shape of its flowers, which resemble a siphon or hook, and in which some see a fanciful resemblance to a pipe. It is quite hardy, and of vigorous growth, climbing to a height of from 15 to 30 feet. It was discovered in 1763.

Mr. Nicholson describes 28 varieties of Aristolochia, and an additional one is mentioned by Mr. Watson, of Kew, with the specific name of *A. ridicula*, because of the droll appearance of the flower, the two lobes on each side of the flower forcibly reminding one of donkey's ears.

Mr. C. L. Allan, in American Garden, says: "In habit, it is both a climber and a twiner, and is therefore unsuited for walls; but its great heart-shaped leaves, from seven to twelve inches in diameter, borne with tropical luxuriance, make a finer exhibition of massive foliage for covering verandas, trellises or other artificial constructions than anything else we know of. Its flowers are extremely curious, being the shape of a siphon or hook, with a long pendent pouch, of a yellowish brown color, borne in May or June. For its perfect development it should have a deep rich soil and a moist situation. It grows eqally well either in sun or shade.

G. W. O. of the Botanic Gardens at Washington, writes in Gardening of *A. elegans*:

"This new Brazilian flowered with us for the first time a few weeks ago, and what a pleasing surprise! With leaves quite as small as those of *A. ciliata*, the flowers in size come near those of *A. gigas*. The leaves are nearly heart-shaped, slightly glaucescent underneath; the flowers, borne on long stalks, are very conspicuous and strikingly handsome. The concave surface of the perianth is beautifully and uniformly speckled with dark claret on a creamy white ground. This species is very floriferous even in a young state, and entirely free from the peculiar camphorous odor common to other members of the genus."

AMPELOPSIS QUINQUEFOLIA.

This word is from two Greek words meaning vine-like, because of the resemblance to the grape vine in habit. There are, at least, two varieties which are natives of North America, viz., the *bipinnate leaved* of Virginia; and the well-known *five leaved*, or Virginia Creeper, which festoons the forest trees in many parts of Ontario, and can be had almost anywhere for the trouble of digging. It is a vine of rapid growth, and, with a little support, will climb to the top of our houses. In autumn, the foliage assumes brilliant red and purple shades, and is therefore a desirable ornamental climber for certain places. It is however rather too strong a grower to be placed in too prominent a position, and is better adapted for special uses, as for instance, as an ornamental pillar on the lawn, either creeping up an old tree trunk or telegraph pole, see Figure 1465. An additional beauty can be added if several such tree trunks, not more than thirty or forty feet apart can be connected by festoons as shown in figure 1466. The support between the trees should be heavy galvanised wire. Another good use of this Creeper is to screen objectionable features, as stables, outhouses, etc. Fig. 1467 shows such a screen separa-

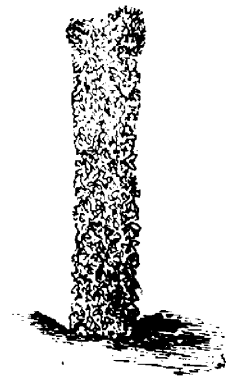


FIG. 1465.—PILLAR COVERED WITH VIRGINIA CREEPER.

ting a backyard and stable from the street, with an opening to give approach to the stable. Here again a galvanised wire fence will afford a good support, or better still, the wire netting so much used for fencing. For such uses as the above, and for climbing over back porches, or over barns or coach-houses, the Virginia Creeper is one of the most satisfactory of climbers, and will succeed with very little care.

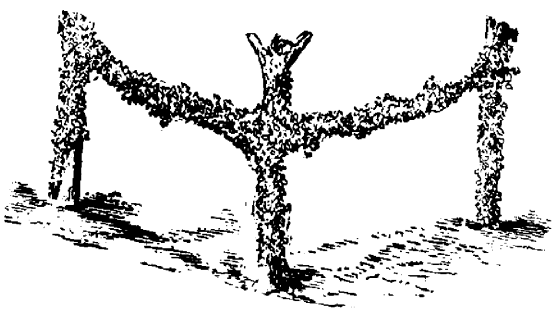


FIG. 1466.—FESTOONS OF VIRGINIA CREEPER.

For the house and especially for covering bare walls of brick or stone, the

AMPELOPSIS VEITCHII,

or Japan Ivy is the greatest favorite, throughout Southern Ontario, as far north at least as the City of Toronto, passing which it is scarcely hardy enough. pletely cover a wall with its beautiful foliage, which grows so closely that neither vine no wall can be seen for leaves; and in autumn this takes on the richest tints imaginable. Of late there has been a great craze for this creeper in Hamilton and Toronto, so that one need not go far to see excellent specimens of this vine.

Another class of climbers, which is becoming exceedingly popular in Can-

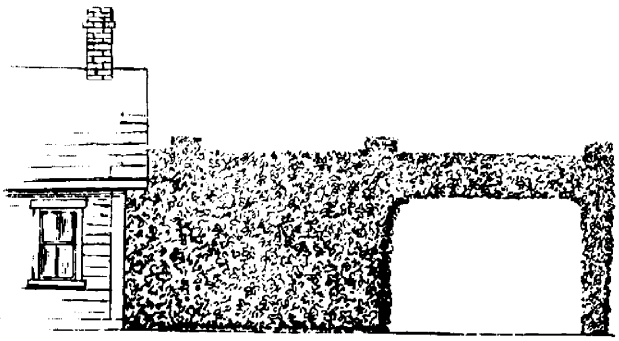


FIG. 1467.—VIRGINIA CREEPER AS A SCREEN.

This creeper has smaller leaves, and more ivy-like habit than the Virginia creeper. Once thoroughly established it makes rapid growth, and it has a remarkable habit of throwing out little tendrils furnished with tiny suckers, which cling so tightly to brick or stone that they must be torn forcibly loose and broken, to be removed. In time this vine will com-

ada, is the clematis family. We have our native, viz:

CLEMATIS VIRGINIA,

samples of this climber were sent to the editor of this journal in 1893, by Mr. J. P. Cockburn; they were planted near the porch, and have grown wonderfully,

FIG. 1468.—HOUSE DECORATED WITH JAPAN IVY.

beautifully draping the base of the veranda. The vine is almost covered with small white flowers in June and July, and in August, are succeeded by long-tailed carpels which are almost equally ornamental. This must be very hardy, for in July, 1898, we found this variety under the name of *Virgin's Bower* luxuriantly covering Mr. Charles Young's back veranda, on St. Joseph's Island, Algoma.

The other cultivated varieties are too numerous to mention in this article. *C. Jackmani* is everywhere known and planted, but is almost too showy with its immense purple flowers. Like the Virginia creeper it flowers upon the young wood, which dies back considerably every year.

AKEBIA QUINATA.

This is one of the many plants introduced into England from China, but should not be mentioned here under the head of hardy climbers, for it is only in the milder parts of England that it succeeds outside. Yet in Southern Ontario it has proved itself perfectly hardy for several years past, and in our opinion is one of the prettiest climbers for its foliage and as a protection from the sun, that can be grown on a porch. It twines itself wonderfully about an upright wire, and reaches a height with us of about fifteen feet. Its flowers are small and insignificant, but the foliage is medium size, and a pretty green color,

FIG. 1469.—HOP-COVERED ARCH.

besides being very persistent, long into cold weather.

HUMULUS LUPULUS.

Some of the best plants are ignored because so common, and this may be said of the common Hop vine, which is a hardy perennial climber, of very easy culture. It is very vigorous and free growing, and aside from the use of the heads in brewing, the vine may well be employed as an ornamental climber. The accompanying illustration (Fig. 1470) from our excellent contemporary, The Garden, published at 37 Southampton St., London, England, shows a most excellent use of this common climber.

LONICERA HALLEANA.

We must not on any account forget to mention Hall's Honeysuckle, for this appears to be one of the hardiest and easiest to cultivate of this universally admired genus. The vine is strong and vigorous, and almost evergreen. The flowers are very fragrant, but not very conspicuous. It continues in bloom from June to November.

FIG. 1470.—AKEBIA QUINATA, *from an engraving in The Garden.*

PRUNING SHRUBS.

PRUNING shrubs for other purposes than to promote the formation of flower buds may be done at any time, preferably in the summer, since wounds heal better during the growing season. All that is necessary in pruning for form is to restrain the too rampant growth of some parts so as to make the bush more symmetrical. Such pruning does not imply that the specimen shall be clipped to look like the toy trees in a Noah's ark outfit—a form only too common in many city gardens. It means merely keeping the plant within bounds, but allowing it perfect freedom within those limits. Each shrub has its own peculiar beauty—an individuality which should be retained—and no pruning which destroys this beauty should be practised upon the farm at least.

Spring flowering shrubs develop flowering buds the season previous to blossoming and protect them during winter by various means, such as bud scales. Late bloomers mature their blossom buds during the season in which they flower. Early and late flowering shrubs therefore require as different treatment as beef and dairy cattle. The one rule to keep in mind for flower production is to prune after flowering. Lilac, Japan quince, flowering currant and other spring bloomers should be pruned in May or June; hydrangea, althea, burning bush and other late bloomers, in late fall or before growth starts in the spring. It is best to leave all tender late flowering shrubs until early spring, to avoid cutting out what might prove hardy canes and to then remove the winter-killed wood.

The only other pruning necessary, as a rule, is that of cutting out dead wood and an occasional centre stem. These obstruct light and air and thus favor disease. The amount of wood to remove at any one time is in each case an individual matter, depending upon the specimen, its species and its behaviour in the locality. It will not be long, as a rule, before the grower learns something of the peculiarities of the specimen and can handle it intelligently.

Non flowering shrubs may be treated the same as flowering, except in the case of evergreens, which should not be pruned in the winter. April is the best month in which to prune them, since they recover more quickly and are not exposed to the drying winds of the long winter months.—Farm & Home.

TREES, SHRUBS AND PLANTS AT THE DOMINION EXPERIMENTAL FARMS.

BY DR. WM. SAUNDERS, DIRECTOR.

FIG. 1471.—APPROACH TO DR. SAUNDERS' HOUSE.

ELEVEN years have now passed since the Experimental Farms of the Dominion of Canada were established. True to the purpose for which these useful institutions were specially designed, the officers who have been entrusted with the work have devoted their chief attention during this period to the task of demonstrating by practical experiments, how agriculture in Canada may best be advanced and the occupation of farming made more profitable. At the same time some attention has been given, not only at the Central Farm at Ottawa but also at each of the branch farms, to the testing of the hardiness and usefulness of different sorts of trees for the production of timber and the providing of shelter. The ornamental aspect of this subject has also been promoted by bringing together many different sorts of trees, shrubs and plants specially useful for decorative purposes.

In arranging the ornamental planting on the farms, a careful study has been made of the characteristics of the many species used, with the view of forming harmonious combinations and pleasing contrasts. The habit of growth, character of the foliage, its colour at different periods of the year, the appearance of the flowers and the form and colour of the fruit, have all been considered in the aim to form natural and effective combinations.

From the entrances to the grounds on the Central Farm, along the roadways leading to the several buildings, a succession of groups of trees and shrubs have been arranged with occasional individual specimens. Surprise is often expressed at the wonderful beauty and grace displayed by the many charming objects thus associated. No shears or pruning knife is allowed to interfere with the natural beauty of the specimens, but time with brief descriptions of portions of this work with illustrations of groups and objects of special interest.

In Fig. 1471 we have a view of the roadway leading to the house of Doctor Saunders.

Figure 1472 gives a view of part of a large central lawn around which the necessary buildings and residences are grouped, the large stock barn being seen in the distance. In the foreground is

FIG. 1472.—SKETCH OF THE CENTRAL LAWN.

the graceful forms with which they have been endowed are carefully preserved.

At the outset the Central Farm was void of all attractiveness save that of its beautiful situation and outlook, but by judicious planning and planting the wilderness has been made to blossom. With the view of promoting a love for the beautiful, and of extending the usefulness of this part of the work of the farms, it is my purpose if space permits to present your readers from time to

an enclosure made with evergreen hedges of spruce and arbor vitæ designed for the purpose of protecting many sorts of flowering bulbs and plants during the winter by gathering about them a deep covering of snow. Within the protecting influences of this enclosure many species can be wintered well which if grown in the open ground are very apt to be killed. The outside margins of this enclosure also form partially protected beds with different as

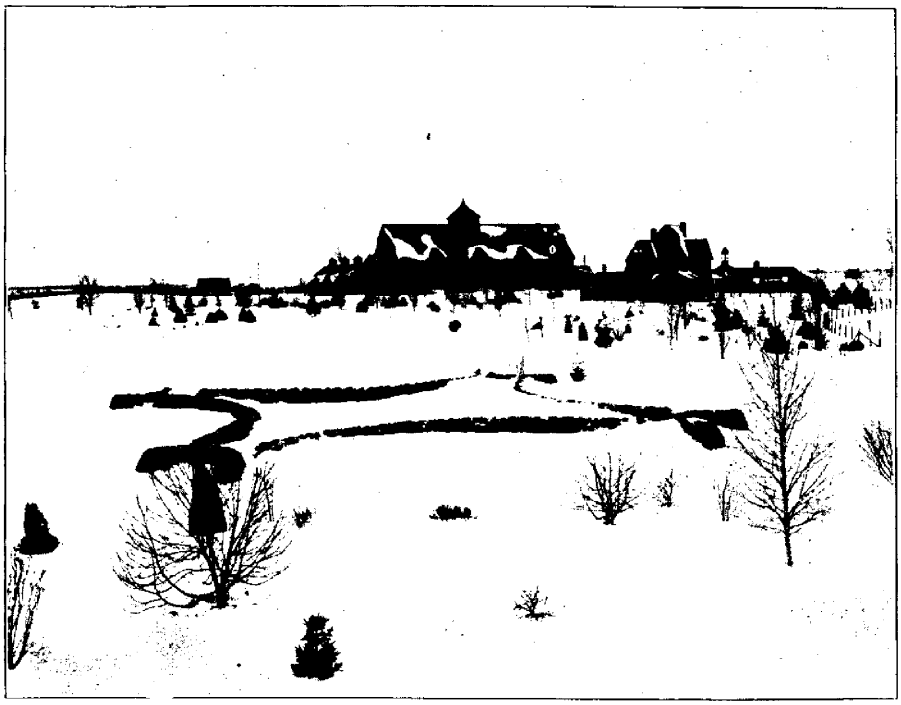


FIG. 1473.—WINTER SCENE.

pects, for all of which suitable plants are selected. The way the snow is collected within and about this enclosure is shown in Fig. 1473 and in Fig. 1474 a portion of the enclosed space is seen after the winter has passed and the spring flowers have opened. Such enclosures may be planned of many different forms to suit special places, but they serve best the purpose for which they are designed if the hedges are made of some evergreen growth.

On another part of this lawn the hybrid perpetual roses are grouped in beds 12 feet wide so as to permit of three rows of bushes 3 feet apart each way and a margin on either side of half this distance. A strip of grass 3 feet in width runs between each bed, thus giving a wide path of six feet. In this way the many varieties under cultivation can be conveniently examined. A part of the rose plantation is shown in Fig. 1475 with groups of evergreen and deciduous trees in the background. In a later communication the subject of hardy roses and their cultivation at Ottawa will be more fully discussed.

FIG. 1474.—A SCENE IN EARLY SPRING.

WINTER PROTECTION.

WHEREVER grape vines and blackberries and raspberry bushes need covering up to save them in winter, rose bushes are benefitted by it also. We save those vines and canes by laying them down in their rows and burying them over with earth. This also is an excellent way to protect roses. But when we grow roses closely in beds this is not always practicable. What then shall we do ?

First, see to it that the ground about where the roses are growing is so well drained that no water can lodge or ice form there in winter. Secondly, in order to have good roses in June, we most prune our bushes well back in spring. As these bushes are now pretty big and have long stout canes standing up to the blast it would be well to shorten these canes to one-half or two-thirds their length, but not nearly short enough to equal spring pruning, to render them easier to handle and give us less to cover up. Then bend them over as flat to the ground as you can with the canes leaning all one way and lengthwise in the bed but their ends a little inclined to the middle, and fasten them in this way with hooked pegs or a few plaster laths laid across them and nailed or tied to pegs. They are then ready for covering up. Be careful now. Plants are seldom hurt by frost in the first of the winter ; the great trouble comes after January. By covering up extra early you render your plants far more tender than they would be did you not cover till late. Have everything ready in good time, however, and before the frost takes a hold of the ground because you can do the work so much better and handier then than

later. Then about the end of November or December when winter weather has set in or is about to, fill up among your rose bushes with dry forest tree leaves which you had before then raked up into a pile, keeping them for this purpose, till the bushes are all covered over and the leaves worked in among them, and over all strew a little strawy litter to keep the leaves from blowing about, and if you have it, lay some evergreen branches, of spruce, pine, or arbor vitæ over the whole.

A heavy mulching of manure on the ground is a great protection to the roots and the crowns of roses. Straw or hay is a good enough covering but objectionable because it harbors mice. Boarding around the beds and over them is very safe, but expensive. In this case provide ample ventilation. We very often see tall rose bushes wrapped up with straw as an out door pump is wrapped about to protect it from frost. This is good if the covering is not very thick. We would advise in these cases to tie the rose bushes and some pea brush or evergreen branches all up together, and wrap the straw covering around the whole. The brush keeps the inside space open and allow free ventilation. All these high bushes should be firmly staked too, to save them from being shaken by wind in hard frosty weather, which is very injurious to them.

Where a person has only a few roses the easiest way to protect them is to cut them back a little, mulch the ground about them heavily, and place inverted barrels or dry goods boxes over them, cutting a hole in these near the top on the south side. If the rose canes have been bent down as already mentioned, before being covered by the boxes so much the better.—Gardening.

FIG. 1475.—ROSARY AND MAIN APPROACH TO SHRUBBERY.

BURLINGTON HORTICULTURAL ASSOCIATION.

FIG. 1476.—MR. A. W. PEART, B.A., *Secretary Burlington Society.*

TO those two or three surviving constituent members of the Ontario Association, who remember its formation in 1860 with about a dozen members, it must be a matter of congratulation that the ball then set rolling has gathered such weight and influence that at the present time there are nearly forty such societies in various parts of our Province working in affiliation with us, and strengthening the hands of the parent body in obtaining the extension of the markets for fruit and in teaching our people the best methods of growing it.

One of the oldest of these affiliated societies is the one at Burlington, which was organized in March, 1889, with Mr. George E. Fisher, as President, and Mr. A. W. Peart, as Secretary. This Society has been of special use to the fruit interests of this favored district, and has led to an increased acreage of fruit, better methods of culture, and extended markets. The soil and climate of this whole region is exceptionally good, and with its excellent shipping facilities, it has become one of the leading fruit centres of Ontario. It is, therefore, no wonder that Burlington fruit took several prizes at the World's Fair in Chicago, in peaches, pears and grapes. The Society took a most laudable interest in this fruit exhibit, and without any outside help except such as was given by the Municipality, kept up constant shipments of fruit from first to last during the whole season.

The same laudable and patriotic spirit characterized this Association in its efforts in 1897, to experiment in the export of tender fruits at their individual risk of loss. The President, Mr. G. E. Fisher, was the prime mover in this work, and he was supported by Mr. Peart, Mr. Chas. Davis, and numerous other well known members of the Burlington Society. Pears, tomatoes, plums and grapes were forwarded, and on the whole the venture proved satisfactory.

During the past six years also, the Society has been making an annual exhibit at the Toronto Industrial, and has received the highest award each year. This year the exhibit consisted of two hundred and twelve plates of choice fruit.

Mr. George Fisher, the President, is one of those men who never does things by halves, and since he has turned his attention to fruit growing, has planted apple and pear trees to an extent that almost surprised even the foremost fruit growers of the Burlington district. Not satisfied with a superficial knowledge of horticulture, he sent to England for a first class microscope, and began study-

FIG. 1477.—MR. GEO. FISHER'S RESIDENCE.

ing the fungous and insect enemies of his orchard, and as a result, when a competent inspector was needed by the Department of Agriculture to search out the San José scale, Mr. George E. Fisher was chosen, and his work has been most thorough and painstaking.

Mr. A. W. Peart, B.A., of the University of Toronto, of 1881, is a partner with his father, Thomas Peart, on a farm of 150 acres, which is devoted to mixed farming, in the production of fruit, butter, beef, pork, grain, etc. Every year the fruit gets more attention and the grain less, until now Mr. Peart has about twenty two acres of apples, pears, plums, grapes, currants and blackberries. Indeed, it was Mr. Peart who was the

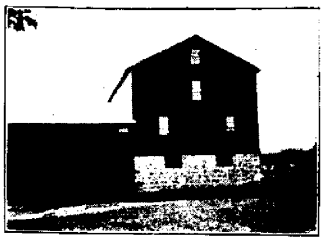


FIG. 1478.—MR. FISHER'S FRUIT HOUSE.

first in the Burlington district to plant largely of grapes, and to demonstrate

FIG. 1479.—MR. C. DAVIS' RESIDENCE.

FIG. 1480.—MR. CHAS. DAVIS.

how successfully they could be grown in the Burlington district. Mr. Peart's abilities have led to his receiving many prominent appointments in Municipal and other institutions, and latterly to his being employed each year on the staff of lecturers at Farmers' Institute.

Mr. Charles Davis is another prominent member of this Society, who has a beautiful home a little south of Burlington, on the Hamilton road. He is largely interested in fruit culture, and in the successful export of our fruits, and was one of those who contributed to make up a shipment of selected Canadian fruit for Her Majesty Queen Victoria's table, in 1896, and which brought back the following response from Lieut.-Col. Sir Arthur Bigge, Windsor Castle, the Queen's Private Secretary :—

"I am commanded by the Queen to beg you to be good enough to arrange that Her Majesty's best thanks be conveyed to those fruit growers of the neighborhood of Hamilton, Ont., who kindly offered for Her Majesty's acceptance, a beautiful consignment of their year's crop. The cases were received yesterday, by the master of the household. Their contents were in perfect condition, and some of the fruit served at Her Majesty's dinner proved excellent.

A SEEDLING APPLE.

FROM appearance the tree is 15 to 18 years old, growing in front of bush lot upon the farm of Alex. Campbell, of the township of Stanley, County of Huron, Bayfield, P.O. This tree is about 500 yards distant from the farm orchard ; has borne crops of fruit for many years, and always of the same uniform size, shape and cleanliness ; this year the crop is about three barrels, and every specimen is free from spot or insect, which goes to illustrate the advantage of a strong tree feeding upon virgin soil. The owner estimates its value so highly that he has grafted several trees in the home orchard from it, and it will be interesting to know the results of this work. He names it locally as "Campbell's Red." Evidently a Fameuse seedling, bearing many points of resemblance, stem about same with calyx resembling Wealthy ; color which covers the fruit completely, is brighter, livelier than Fameuse ; will keep with Fameuse, flesh white with crimsom streaks, firm and juicy, possessing more tart than parent and would ship well, good.

In your excellent description of "Fruit at the Industrial," I was struck with the composition of the twenty variety of pears which took first prize.

That collection contains varieties which point very low in commercial value, such as Seckel, Lawrence, Nelis, Malines especially. I might also add Easter Beurre, as for such a collection it is too variable to recommend generally. Souvenir also comes into the same list and cannot be classed as generally profitable. Then the Flemish Beauty has lost some points of late years as a generally profitable pear. The collection

to my mind lacks also in not having Clairgeau especially, and I might add Boussock. Of course, not having seen the display, I am not in a position to compare with other competing collections, and I readily recognise the difficulty any grower has in putting together fine specimens in so many kinds. Would it not be more profitable to do away with so large a collection? Ten varieties would contain such a collection as could be recommended a planter to adopt, and in this way exhibitions would be educative to a more practical degree. We have many kinds that are so high in flavor and desirable for the amateur's dessert table, that we do not wish to discard them; but markets and their demands must be considered, as we must have dollars and cents. If we must have large collections at exhibitions, why not draw a line between these and such collections as we can recommend for profit to the general planter?

For a first of winter kind, I make more money out of Drouard than almost any, after Anjou and Clairgeau are gone. How is it with others? Drouard with me is a strong grower, regular bearer, fruit good enough in flavor for market, and it has size and good form to attract the buyer.

We can consciously drop a sigh to think that the markets will not generally give a price that will make it pay to grow Seckel, Lawrence, Nelis and Malines. But we must bow to the inevitable and produce what the markets demand, for there is no sentiment there for finest flavor minus quantity! Let us strive to produce Clairgeau in size and Seckel in flavor, and see if *market demand* will smile upon us and reward the effort.

ALEX. MCD. ALLAN.

Goderich.

SPRAYING FOR THE CURL-LEAF OF THE PEACH.

IN nearly all of the Northern States the crop of 1898 was greatly reduced by the work of the curl leaf, except in the few orchards where a proper use was made of fungicides for its prevention. Many persons waited until the buds had commenced to swell, and report a partial loss of the crop, but where the application was made early in the spring, and was so thorough as to soak the buds and branches, little or no "curl" appeared, and a crop was secure. Even in the case of varieties which, when left unsprayed, were so severely injured that all of the fruit, as well as the foliage, dropped from the trees; good results can be secured from the use of a copper sulphate, copperas, Bordeaux mixture or lye, but for a number of years a solution of copper sulphate at the rate of one pound to from fifteen to twenty-five gallons of water has given the best results. The treatment may be given in the fall after the leaves have dropped from the trees, or at any time before the first of April for the northern states; after that date the benefits will be less marked. The past season, applications of Bordeaux mixture after the blossoms dropped from the trees, had little, if any, beneficial effect, in lessening the injury from curl leaf, although of considerable value in preventing the scab and spot disease, as well as the attack of brown rot, but in other seasons when the disease has not appeared until several days after the leaves have opened, a marked benefit has been noted.

L. R. TAFT.

Agric'l Col., Mich., Oct. 25, 1898.

MR. S. D. WILLARD'S ORCHARD.

MRS. W. W. STEVENS, before the Indiana Horticultural Convention, described her visit to the home of Mr. S. D. Willard, of Geneva, N. Y., and spoke of his Kieffer pear orchard. The trees are kept very small and are headed in at about three feet. Each year's growth is cut back to two inches The entire crop can thus be gathered from the ground. Only the best fruit is raised. After the pears have set the crop is thinned so as to produce specimens of large size and fine quality. These small trees have several advantages. They are not affected by winds, the fruit is easily gathered, and more trees can be grown on a certain amount of space.

The trees live long and are very profitable. In one orchard they are 16 x 16 feet, while in another they are 8 x 16 feet, and the results are entirely satisfactory. The ground is cultivated shallow and highly fed. No barnyard manure is allowed, as Mr. Willard thinks it is conducive to fungous diseases. Of Japan plums, Mr. Willard thinks Burbank can hardly be improved upon. The trees headed low and are kept narrow from side to side. Black Diamond plum is a good bearer and considered a desirable variety.

In addition to pears and plums, Mr. Willard grows large quantities of apples, cherries, gooseberries, currants, grapes, etc. His orchard is kept in the finest possible condition. Every bit of space is utilized. The ground is highly fertilized. Contrary to the belief of many, this kind of management pays. Along one side of the orchard was a row of sunflowers which Mr. Willard explained was to furnish food for the fowls, which were raised in connection with fruit, for he stated, insect pests are likely to be less troublesome where there are chickens. The poultry also pays a profit in the production of eggs.

Mr. Willard sells direct to the consumer in original packages. He puts up two grades of fruit. No. 1 and No. 2. Poor grades are sold to canners or are put upon the market upon merit and without brand. Nothing but the best is packed.

Orchards and small fruits are cultivated perfectly clean. The ground is kept level and well stirred. Of commercial fertilizers, hardwood ashes are considered best, but are usually so scarce that other kinds have to be substituted. Mr. Willard's practice briefly stated is: Plant carefully, prune severely, and feed liberally. In the discussion following this paper the merits of the Kieffer pear were pretty thoroughly discussed. Unless properly handled it is not at all satisfactory, being hard, gritty, and almost tasteless. About the first of October gather from the trees, place in a cool, dark room, and allow to ripen three or four weeks, covering with old carpet or some similar material. With such treatment this pear sells readily and is very satisfactory. It was the sense of the convention that Kieffer pears could profitably be planted in Indiana. At least they are very remunerative at present. So many have been set during recent years that there is a possible danger of over-production.—Allegan Gazette.

THE AGE OF BEARING TREES.

ONE of the greatest disappointments to the one not conversant with the subject, and who wishes to plant fruit trees, is to find that he cannot begin plucking fruit from the trees the year after he plants them. I have witnessed this disappointment in so many that I am quite prepared for it when the question is asked of me. It happened recently that a lady asked me how long it would take an apple tree to bear which she had just planted. The tree appeared to be a four year-old one, and was about seven feet high and fairly headed. I answered, "It will be about ten years." She thought this a dreadful long while to wait, but the only consolation I could give her was that she would possibly see fruit on it in five years, but it would be ten before it would bear what might be termed a crop. I am satisfied that what I said was right. There is but little fruit to be looked for from the apple and the pear until ten years from the time of planting has gone by. I have in mind some pear trees planted by me seventeen years ago, and, though fruit has been gathered from them every year since they were planted, they have not yet reached perfection of growth. I think about two bushels per tree would be about what they bore this year. I find it always consoles amateurs to tell them that some fruit may be expected every year from pears.

With apples the fruiting is rather slower. There need be none whatever looked for for two or three years after a four-year-old tree has been set out, and the full bearing period will be as much behind it. The cherry is much like the pear. Some fruit appears to cheer the heart of the owner as soon as the tree is planted, and there is a continuance of it every year, it being a fruit tree that rarely misses a crop. The plum stands between the pear and the apple. It does not start bearing at once, but in favorable situations, where good but not rampant growth is made, a few years bring along the flowers and fruit. Peach trees will often produce flowers from a shoot but one year old from the bud, and it is one of the earliest bearing of all tree fruits. It is a tree which should be set out by all impatient parties, as it brings them something and interests them while waiting for the slower ones to come along.

Quinces will sometimes bear in four or five years, at other times they will stand still for several years, and take nearly ten before bearing but a few fruit. Whenever I find one who asks my opinion on the length of time he will have to wait, if he be of the despondent kind I recommend that some pears and peaches be planted. And besides telling this, I see that the Bartlett is on the pear list, as it bears at once, every year a good crop and cannot be excelled for quality And besides telling persons just how long they must wait for their trees to bear, it is well that they should understand that good cultivation pays. A well-fed and well-tended fruit tree may be a little slower in fruiting than a starved one, but in the end it will be a better tree and give finer fruit.—Practical Farmer.

THINNING TO INCREASE SIZE.

THE necessity of thinning the fruit is a work we shall have to recognize in the future. The benefits have been brought to my notice in many places this year. In September I was in Ontario in one of the best plum-growing sections, and saw an orchard of four hundred trees, each tree of which yielded ten baskets of Lombard plums, or four thousand baskets in all, which sold at twenty-five cents, making a gross return of $1,000 for these 400 trees. I saw another orchard, not five miles away, that carried probably as large a number of baskets, but I am sure they would not realize more than fifty per cent of the gross return of the first. The high prices scored by the first lot may be attributed to the fact that they were thinned, and the second was not. The Lombard is one of those trees which will practically kill itself by overbearing if it is not thinned. The fruit will, under these conditions, become small, and very poorly colored, so that the smaller price for the larger number of baskets will not equal in gross return that secured from the smaller quantity of better quality obtained by thinning. At the farm I have tried this experiment on some varieties of American plums. These are very prolific sorts; if allowed to bear to their full extent, will in a few years destroy themselves. In the case of the Weaver plum, two trees which were not thinned for three years died at the end of that period, and two other trees which were thinned each year, are in good health and give fair returns each year. It is, therefore, not only possible by thinning to increase the quality of the fruit but to keep your trees in health.—Report Quebec Pomological Society.

FRUIT NOTES.

ROAD dust thrown over the trees in which the slimy scales appear, will destroy them. They breathe through pores in their bodies and the dust closes these up and suffocates them.

Clean cultivation is the great safeguard against fungus diseases and insect pests. These enemies are cowardly, they always attack the weak and unprotected plants first. Look for them closely and apply remedies for them at once.

If you desire to hasten the maturity of any garden crop, use wood ashes liberally. On most farms enough ashes can be saved during the year to give the entire garden a good coat. We do not place as high a value upon ashes as we should.

Such luxuries as small fruits of all kinds out to be indulged in liberally by every farmer's family, but such is not the case in too many instances. It isn't too late to make a start in this direction this spring, if you have neglected it in the past.

For the currant worm no remedy is safer or more easily applied than white hellebore. Dissolve an ounce of the powder in two gallons of water and apply with a fine sprinkler or brush broom. A sprayer is the best thing made for this purpose. The worm first appears on the lower branches about the time the fruit is formed.—Main Farmer.

PLUMBAGO CAPENSIS. (*Leadwort.*)

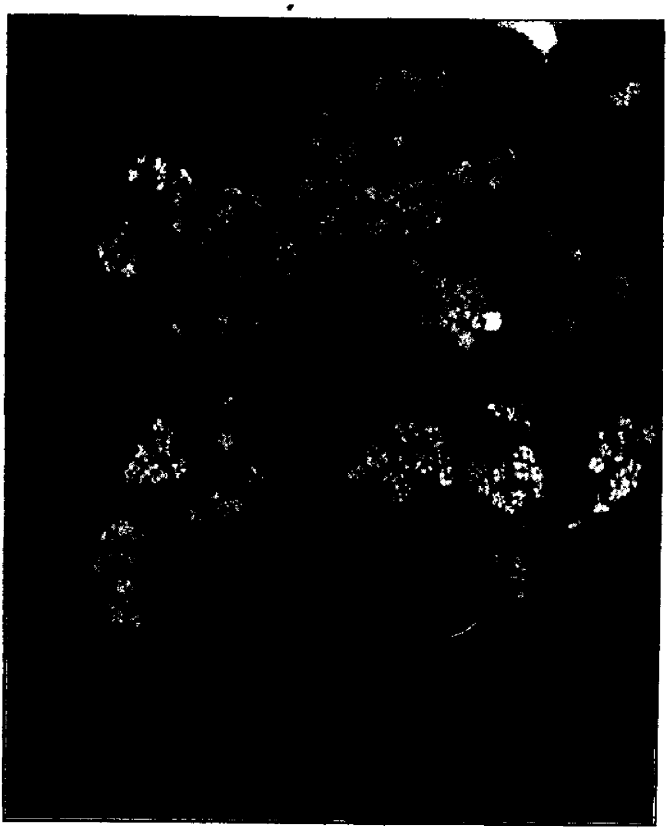


FIG. 1481.—

THIS Shrub belongs to the Natural Order *Plumbaginaceae* which comprises about eight genera and nearly three hundred species. They are mostly maritime plants, though some are found on mountains. They are distinguished from all other monopetalous orders by their plaited calyx, and solitary ovule, suspended from the apex of a cord which

arises from the base of a one-celled ovary. Most of the plants of this order are acrid and caustic in the highest degree. The roots of one, *Plumbago Europœa*, used to be employed by beggars to raise ulcers upon their bodies to excite pity, and another, *P. Scandens*, is so very acrid that in the island of St. Do-

sea lavender or *marsh rosemary*. The root of *Statice Caroliniana* is one of the most powerful astringents in the vegetable materia medica, while the bruised fresh bark of the roots of Plumbago Zeylanica acts as a splendid blistering agent, or to speak more elegantly it is a vesicatory or vesicant.

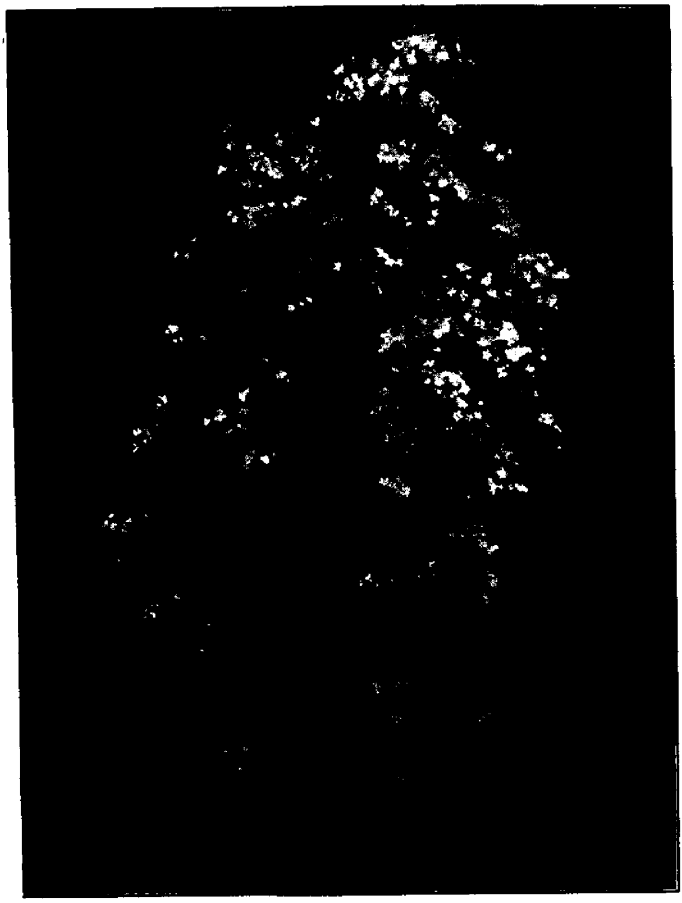


FIG. 1482.—

mingo it is called, on this account, *herbe du diable*, or the devil's herb.

Only one member of this family figures in North American botany, viz, *Statice Limonium* and its variety, *Staitce Carolinana*, which are found along the sea coast in salt marshes, and is called

Before I proceed to speak particularly of the member of the family whose name heads this paragraph I might observe that the reason the order is called the *Leadwort* family is not because the color of the flower of some of the members of the typical genus, *Plumbago*, re-

minds one of the appearance of fresh cut lead, but because *P. Europæa*, already referred to as a pity-producer for European beggars, produces also the substance called Plumbagine, and farther, a peculiar fat which gives to the skin a leaden color.

As garden plants nearly the whole of the order is much prized for beauty. The well known Sea-pink or Thrift found on the sea coasts of England, and used there largely as an edging for flower beds, is a member of this family. Its botanic name is ***Armeria vulgaris.***

Now, after having spoken of some of the properties of the family at large, I want to speak a word for *Plumbago Capensis* as a very desirable plant for house, greenhouse or garden cultivation. In habit it may be said to be half shrubby. It is practically a perpetual bloomer. Its flowers are produced in large clusters of a beautiful light blue color—a color not possessed by any other plant with which I am acquainted, and while it is not so hardy as to stand the Canadian winter it may be so managed that it will be an object of great beauty on the lawn or in the herbaceous border in late fall when we have such a scarcity of flowering shrubs.

The illustrations accompanying this article were taken from plants on my lawn late in October of the present year, and the plant in a pot, Fig. No. 1481, was photographed at the same time, three weeks after having been dug up out of the flower border where they had been planted out in June.

Figs. 1482 and 1483 represent shrubs over 6 feet high. No. 1481 was a plant which grew all last winter in the centre bed of my conservatory along with begonias, cytisus, abutilons cannas, poinsettias, and a Bouganvilleas, etc., all in a blaze of color; yet the plumbago commanded attention even in such gorgeous company, by the number and peculiar delicacy of its graceful blossoms. Another plant grew on the back wall of the greenhouse reaching the height of 8 feet, and bloomed continuously through the winter. No. 1482 was cut back a little and lifted and planted on the lawn in early June, and had assumed the proportions and bloom as shown in September, blooming through October until two nights of frost at 22° robbed it of its glory. I noticed, however, in spite of this ordeal, a few mild days succeeding, it actually ventured to unfold a few more of its delicate blossoms. Fig. 1483 represents a plant grown for two years in a pot and planted out on the lawn at the same time as the other, and after being allowed to pass through the frost referred to above, was potted and is now making fresh growth which in a week or two will again delight us with its bloom. It is easily grown. All it requires is good friable loam enriched with decayed manure. As it soon fills the pots with roots, watering must be carefully attended to. Frequent syringing with water is necessary as the red spider seems to consider its leaves a special delicacy, and is the greatest enemy it has. It is easily propagated from cuttings; half-ripened wood in sand soon emitting roots. It grows rapidly and is one of my most satisfactory greenhouse shrubs. If planted out in early summer and lifted before frost injures it, it never fails to give a profusion of bloom for many weeks.

If the flowering side-shoots are cut back when the flowers fade, the supply of fresh flowering wood will be kept up.

I trust many of the readers of the HORTICULTURIST, especially those who have greenhouses, will get a plant of Plumbago Capensis, and I am sure they will be delighted with it.

FIG. 1483.—

Plumbago larpentæ and *P. rosea* and its variety coccinea are also catalogued by nurserymen. The first of these is of a dwarf habit, the branches being nearly prostrate with flowers of a deep blue, and the other *rosea* and its variety is an upright grower though not at all in habit like *Capensis*. Its brick-red flowers are borne in airy spikes at the end of the shoots and is very useful as a winter bloomer.

A. ALEXANDER.

Hamilton, November, 1898.

ROSES FOR THE AMATEUR.

SIR,—Lest some of the readers of the HORTICULTURIST north of the latitude of Hamilton might be induced to buy and plant the list of roses given by our friend Webster without a necessary provision for the season of disappointment and sorrow which is certain to follow, I would advisingly recommend them while purchasing the roses to purchase at the same time an ample supply of crape and other necessary mourning goods.

These latter goods will be needed, for their day of sorrow will surely come. I am about forty miles north of the latitude of Hamilton, and such roses as La France, Margaret Dickson, Pierre Notting and even Ulrich Brunner I would not think of calling hardy.

In his list of 12 hardy roses Mr. Webster again includes La France and again in his list of hybrid teas. In his list of 20 varieties Mr. Webster does not include the old rose, Jules Margotten, yet it is quite as hardy as many that he does include, with finer foliage, a stronger grower and heavier bloomer than any one of them.

If it is bloom that is wanted I do not think I would recommend twenty varieties to anybody. I certainly should not recommend twelve dark ones and include in them Pierre Notting, Louis Van Houtte and Abel Carrier and leave our Gen. Jacqueminot. But as it is too late to purchase this fall, and a number of correspondents have asked for lists by letter, I will endeavor before the spring season comes to send you for publication a guilt edged list suitable for latitudes from Guelph northward. We cannot all live in such favored latitudes as Hamilton, otherwise I would like to revel in varieties that I dare not touch here, having due regard for the season of disappointment sure to follow an investment in and trial o them.

T. H. RACE.

Mitchell.

SPRAYING A SUCCESS IN QUEBEC.

I WISH to say that I am a complete convert to the idea that spraying will clear us of the fungus. The first year I applied it was three years ago, and I made the test in this way. I left two or three trees in each orchard, which had no application at all of the Bordeaux mixture. The difference between the fruit on the trees not sprayed and the others were very marked. The fruit on the unsprayed trees was unsalable and miserable. Not only that, but the leaves were badly attacked by the insects, and the trees made very little growth. Last season the fruit generally was better than it has been for some years. Out of a crop of five hundred barrels, I do not believe I had one barrel of spotted fruit. The St. Lawrence were the worst spotted; My Fameuse were very clear. I have in one of my orchards about twenty trees of the St. Lawrence which are now twenty years old. They were planted too close together, so that the branches intersect, and it is impossible to get round the trees, and you can only spray from two sides. The spraying was carefully done, but the Bordeaux mixture never fell on the leaves between the trees at all, and the result was when we began to pick the St. Lawrence they were splendid looking from the outside, but when we opened out the branches were they were intersected, the fruit was absolutely unfit for eating or selling, and almost altogether covered with the fungus. My man was very much struck with that, and became quite convinced of the good effect of spraying. He had previously been a little doubtful, but was now quite convinced. It was one of the clearest evidences that the Bordeaux mixture, well applied, with a good pump, and applied at least three times, will give us good fruit.—Report Pomological Society of Quebec.

HOUSE AND BEDDING PLANTS.

FIG. 1484.—A WINDOW BOX.

SUCCESS with house plants, like success with anything else, does not depend altogether on the immediate surroundings, but rather if I may use the term, upon the stick to-itiveness of the person. The successful grower of plants like the successful student, mechanic, or business man, is observant, careful, and methodical, always devoting his or her attention to the subject, never losing sight of the high standard to be attained.

Flowers have an ennobling and elevating influence; their influence is not only elevating but instructive, and every home should have a window set apart for their cultivation. This window should be the largest in the house, and facing the sunny side, and with ample ventilation provided.

It must be confessed that there is one great drawback to growing plants in the house, and that is the hot and dry atmosphere in our houses, and unless this is counterbalanced in some way plant life will be of short duration. I know of no better way than that practiced by a friend of mine this last season; his method is as follows: His plant table has a piece about one inch square nailed on the outside edge; on the table and over this, zinc has been placed, so that it makes as it were a large shallow pan; in one corner he has a small pipe inserted to carry away any water that may run from the pots after watering; the pipe has a tap on the end so that there is no danger from water dropping on the floor. On the table he placed about one inch of fine gravel, which has a tendency to hold the moisture, and its slow evaporation moderates the atmosphere to a certain extent.

In flower culture it is usually the cheap things that are good; strong healthy plants, increasing easily and rapidly by cuttings or from seed, make

it possible for the seed or plant to be sold cheap, hence the beginner should always commence with these, and as experience warrants gradually add those plants requiring more careful handling.

Some people wonder why it is that they have such poor luck, and why it is that plants never do well for them ; you often hear them condemn the florist as a down-right humbug ; but do not be too hard on the poor florist. I am one myself, and how hard it is to be blamed for that which we are in no way accountable. While we must admit that there are unprincipled men in the profession, ninety-nine times out of a hundred the florist will not overdraw his descriptions or wilfully mislead you in his instructions. Did you ever stop to think what the plants have been sub jected to in the change from our greenhouses to your dry rooms? In our greenhouses the temperature is always even, and the atmosphere moist ; we give the whole of our time and attention to the plants under our care, and use every means known to art and skill to assist nature in developing its glorious beauties.

A large number of failures are due either to the want of proper attention in watering or through being kept in a room that is too close and warm. Nearly all plants do better if kept in a cool room, no matter how cool so long that it does not freeze ; and just here let me suggest to you that it will not pay you to attempt to raise house plants, either from seeds or by cuttings while they can be had at so small a cost. Buy them just as they are ready to bloom, then you will have all the benefit without the trouble and at so small a cost that your windows will always be a source of pleasure to yourself and an admiration to your friends.

Decorative Plants.

In house plants there is nothing that lends elegance to its surroundings or more completely adds the finishing touches to a drawing room or parlor than the Palm. The ease with which they are kept has attracted increased attention every year, until now we handle thousands annually. Where people have not succeeded we find that it is invariably from the want of not giving their palm sufficient water ;—we must remember that palms are a moisture loving plant, and we must try by artificial means to reproduce nature or at least to supply nature's requirements. While as I say that palms are a moisture loving plant, we find that there is no house plant that will give more satisfaction or last so long as a Kentia a Latania, a Phoenix or a Coco Palm. With a few exceptions Ferns do not give satisfaction as house plants, but there is nothing more suitable for a drawing room or a dinner table than a fern pan. This as an earthen pot about 3 inches deep, filled with a variety of hardy ferns ; they are usually fitted into a cover of some design to suit the customers' taste. It must not be imagined that this is going to last a whole season, for it will not, but you must look at it in the light that it does not cost any more than a vase of cut flowers would for one single occasion, and it will last for several weeks, and can be refilled at a very nominal cost. The rubber plant is one that can be recommended to thrive and do well where all others fail—a splendid house plant for winter and one of the best we have for lawn decoration in summer. There are a number of Dracaenas that make admirable house plants ; their rich markings add a tropical elegance and variety to their sur- roundings.

The Pandanus Veitchii is another very attractive variegated plant that can be highly recommended; easy of cultivation, graceful in appearance, it is one of the best we have.

I might go on and enumerate a large number of decorative plants, but I do not consider it necessary. In the care of what decorative plants you have, let me impress upon you the importance of care and judgment in watering, as the all important secret in growing plants. It is hard to learn and harder to teach; it is an art in itself. You must be in touch with your subject, then by diligent practice and close observation it becomes as it were a second nature. See that the drainage is perfect. Sponging off the foliage once in a while is a benefit, but do not make the mistake of putting them out in the rain to get a good wash; while it may not hurt them in the summer, it is death to them in cold weather. Decorative plants require all the light you can give them, but not the direct sunlight, it is apt to burn and disfigure them.

Flowering Plants.

Azaleas are amongst the most easily managed flowering plants we have; they are imported from Belgium, and are now sold at very nominal prices. Considering their beauty and the length of flowering season, they should be in every collection. Great care should be taken to see that they are thoroughly watered, for on this depends your success or failure. Placed in a moderately cool room they will last in bloom from six to ten weeks.

The Chinese Primrose is perhaps the most popular and altogether the most satisfactory of all the flowering house plants we grow, beginning to bloom as it does in early fall and continuing all winter. In its freedom it has few equals and no superiors; its only requirements is a cool light room and ordinary treatment. Cyclamen, with the wonderful improvement that has been made within the last few years, has brought forth such noteworthy praise that it is considered as indispensable to every collection. It is raised from seed which give by all odds the best results. It can be grown on from year to year; but I do not recommend that, as it will seldom do as well after the first year. In its early stages it requires the skill of an expert, so that here again I would recommend that you buy the plants just as they are coming into bloom, which will be in November. If they have been properly grown they will give you a profusion of bloom nearly all winter.

There is perhaps no class of plants that give more universal satisfaction than the Begonia. Whether it be flowering or ornamental, the tuberous rooted begonia with its enormous and gorgeous flowers, its wide range of colour, commends itself to all. The new flowering varieties which have been introduced within the last few years are such an acquisition and improvement over the older ones that no lover of flowers can afford to be without them; their ease of culture, and profuse blooming qualities, are found in no other class of plants. They require a light rich fibrous soil, firm potting and a sunny situation.

Now I have mentioned a few of the standard commercial plants, but the list that may be selected from is almost unlimited, e g.—Fuchsia, Heliotrope, Hydrangea, Cineraria, etc., all of which do equally as well and give good satisfaction. Then if you so desire you may have a succession of the softer growing plants, such as Ageratum, Mignonette, Petunia, Wallflower, Candytuft, Sweet Alyssum, etc. These can all be raised from seed in late autumn or early winter

and will give you a nice variety with little or no expense.

BULBS.

The cultivation and sale of bulbs has reached enormous proportions. With their ease of culture, showy effect and small cost, they are prime favorites. They should be potted up as soon as received in the fall, placed outside in some sheltered position, and covered first with some leaves, sawdust or some other material that will not adhere to the soil in the pot, then cover with six inches of soil; but before covering at all, give a thorough watering. This is all the water they will require until you bring them in, so do not make the mistake of trying to force Dutch bulbs before the middle of January, or the further mistake of trying to force them before they have made any roots, or rather filled their pots with roots. When potted up in October or November and covered as directed they will have filled their pots with roots by the middle of December and may then be brought into a cool cellar, and a few at a time brought into a light, warm room so as to have a succession. Roman Hyacinths and Paper White Narcissus only may be forced before Christmas.

It is claimed by some authorities that to have the best success with bulbs they should be left outside until thoroughly frozen, particularly so with Tulips and Lily of the Valley. This I can assure you is not at all necessary, as annually we force tens of thousands that are never subjected to the freezing considered so necessary, and I must say that the quality is equal to any that I have ever seen.

W. GAMMAGE.

London.

A CHOICE LIST FOR WINTER BLOOMING.

I WILL name 25 plants that stand first on my list for their winter blooming qualities; and the amateur, who is undecided what to select from the attractive pages of the catalogues, will find none better. They are not the latest novelties, I know, but they are better than some of the newer kinds.

Geraniums: Bruant, red; La Favorite, white; Centaure, lovely pink; M. Caro, called lilac and a free bloomer; Gilded Gold, orange-scarlet.

Abutilons: rosaeflorum, a lovely rose color, veined with dark pink; Boule de Niege, pure white; Golden Bells, bright yellow; Crusader, crimson.

Carnations: Silver Spray, pure white; Chester Pride, white flaked with red; Sunrise, yellow flaked with red; Tidal Wave, deep pink. There are many more carnations that are deserving of mention, but these are excellent bloomers.

Begonias: Rubra, bright scarlet; Paul Bruant, light pink.

Roses: Meteor, dark red; Clothide Loupert, white with pink centre.

Also a plant each of Primula obconica, purple heliotrope, Manettia vine, Plumbago capensis, a pink and white petunia, a scarlet and white verbena and a Linum trigynum,

I presume everyone knows how to care for the geranium. The abutilon, heliotrope, Manettia vine, carnation, plumbago, petunia, verbena and Linum trigynum will do well in the soil that suits the geranium. Perhaps Madettia vine will do better with more leaf mold

in the soil than is given to the others. I find that Primula obconica, also, likes a liberal quantity of leaf mold in the soil and is a very thirsty little plant. Carnations should be planted out in the garden through the summer, all buds removed until they are lifted in September and given a sunny window ; shower often.

Among the petunias, I prefer the double to the single varieties. Roses are more difficult to manage, but the varieties named are more easily grown than most roses. Loam enriched with well-rotted manure, with a little yellow clay added, makes a good soil for them. Do not use a bit of leaf mold. To grow roses successfully, one must sprinkle thoroughly every day or they will surely be troubled with the red spider. Begonias thrive best in a soil consisting mostly of leaf mold ; they grow well in an east window, and do not care for much sun.

If the amateur will profit by these hints and select plants like the ones named, I think she will be delighted with the results. These may all be purchased of some reliable florist for a small sum ; and if her pocketbook is in the condition that mine usually is, thin, very thin, she will do much better to choose from this list than to spend the modest allowance for a few costly novelties. It would be well to add a few bulbs in the fall, as they are both cheap and good —Farm and Home.

POINTERS ABOUT WINTER HOUSE PLANTS.

SEVERAL inquirers have asked, recently, for a little advice about Winter house plants. It is not difficult to make a fair show, even under restricted circumstances, but amateur gardeners often err in being too ambitious for their space and location. All plants that make a brave show in the greenhouse cannot be depended upon for equal results in the house. One window cannot be expected to accommodate plants of widely different classes. If the only available location is light, but practically sunless, do not expect a profusion of flowers. In such a situation, foliage plants only should be attempted. Carnations, violets and primroses should not be expected to flourish in a very warm room. A house in which there is neither steam heat nor gas is far more likely to give good results with ordinary house plants than one possessing these advantages.

Bulbous Plants.

Every one likes Winter-blooming bulbs, and though their season of bloom is not long, they are very attractive, easily managed, free from insects or disease, and inexpensive. It is now too late to pot bulbs with the idea of having them in flower by the holidays, or to pot Bermuda lilies, which should have been making roots for two months past ; but tulips, hyacinths and crocuses will give blooms for the latter part of the Winter.

"What general planting directions would you give for bulbs?" I asked a New York florist.

"A mixture of garden loam, sand, and well-rotted cow manure is a good compost for bulbs. Set hyacinth bulbs about half their depth in the soil, but tulips should be covered one to two inches. For single bulbs of ordinary size, use a four-inch pot, or put four bulbs in a

seven-inch pot. Water well when potted, and put in a cool, dark place. Keep them there until they have made abundant roots, which will be in four to six weeks. To grow the Bermuda lilies, select large, heavy bulbs; put about three inches of compost on the top of drainage crocks, in a seven-inch flower pot; place the bulb on this, and cover with soil, not filling the pot right up to the top."

"Why shouldn't you fill the pot right to the top?"

"Because the lily will form adventitious roots, like that Mexican June corn, and you want to add a mulch for their benefit."

Bulbs Without Soil.

"Is it possible to grow all these different bulbs in water?"

"Hyacinths, and the Narcissus, commonly known as the Chinese sacred lily, are the only ones commonly grown in water. The Narcissus referred to has been so widely advertised that it is hardly necessary to describe its culture. The hyacinths are put in narrow glasses made for the purpose, which have a wider cup at the top, to hold the bulb. It is well to place the bulb in slightly damped sand for a few days before putting in the glass. The bottom of the bulb should just touch the water. Until the bulb has made roots about one inch long, the glass should be kept in a dark place."

"Is ordinary clear glass used for these bulbs?"

"No, opaque glass is preferable, because the roots should be in the dark. The water may be changed from time to time, about two drops of ammonia being added to the water in each glass. A lump of charcoal will aid in keeping the water sweet."

Varieties of Hyacinths.

"What varieties of tulips and hyacinths would you advise for house culture?"

"Single varieties are, as a rule, more satisfactory than the doubles. The small Roman hyacinths are the earliest to bloom. They should be planted in earth, three bulbs in a five-inch pot. They may be obtained in white, red or blue, and are in bloom long before the large Dutch sorts. Among Dutch hyacinths, a good selection of singles is the following: Blue—Charles Dickens, Czar Peter, King of the Blues, and La Peyrouse; white—La Grandesse, Mme. Van der Hoop, Grandeur a Merveille, and Baron Von Thuyll; yellow—Ida, William III., Heroine; dark red — Pelissier; pink, Gertrude, Lord Macaulay, Norma, Fabiola. One may buy unnamed sorts, in the different colors, cheaper than named sorts, and they are excellent for bedding; but I think the selected ones are safer for window use."

Tulips and Their Varieties.

"The earliest tulips noted outside are small red or white ones; are they suitable for the house?"

"They are the Duc Van Thol varieties, which are very early, hence are forced by florists who want tulips around the holidays. They are small and short-stemmed when brought into bloom about the holidays, and while it is well enough to have a few of them, there are better sorts."

"What varieties would you recommend for the house?"

"Singles by preference; a good selection would include Artus, bright scarlet; Chrysolosa, golden yellow; Keizerkroon, red and yellow; Cottage Maid, pink and white; Duchesse de Parma, red edged with yellow; Joost Van Vondel, red and white."

Other Bulbs.

"What other bulbs would be suitable for the house?"

"Narcissus of the Polyanthus section, especially the Paper White; the Trumpet daffodil and jonquil; Freesias, Ixias, Amaryllis, Star of Bethlehem, Siberian squill, and Glory-of-the Snow (Chionodoxa Lucillæ). Several varieties of Oxalis, described as bulbous, though really tuberous plants, are excellent for Winter."

"How are they treated?"

"They should be potted, as early as possible, in sandy loam, requiring good drainage. Put four or five of the tubers in a five-inch pot, as they are quite small."

Flowering Plants.

"How are violets, roses and carnations for Winter house plants?"

"I wouldn't recommend any one of the three in an ordinary room. I know that people sometimes report success with them, but the chances are against it. Violets might be tried in a room with little heat, simply kept free from frost, running about 40 to 45 degrees at night; but they would not stand an ordinary living room. Carnations will not stand dry heat, neither are such conditions suited to roses."

"What flowering plants would you recommend?"

"Cyclamens, azaleas, begonias and Chinese primroses are all satisfactory. The begonias are so cheap, handsome, and easily managed that they are sure to give satisfaction. The Semperflorens varieties are all excellent for the house, free Winter bloomers. Erfordia, with clusters of rosy salmon flowers, gives good satisfaction in the house during the Winter, and outside in the Summer. Begonia Vernon and its varieties are similarly useful."

"What other types of begonias would you recommend?"

"The Rex or painted-leaf sorts. They give a handsome effect among foliage plants."

Plants with Ornamental Fruit.

"The Otaheite orange is recommended for the house, is it not?"

"Yes, it is a very fine thing showing fruit and flowers at all seasons. While thriving in a moderate temperature, it doesn't like a sudden chill or excess of water. I have seen specimens which were allowed to stay outside during a cold Fall rain, being soaked and chilled at the same time, and the result was disastrous."

"What other fruiting plants would you recommend?"

"The old Jerusalem cherry (Solanum Pseudo-Capsicum) which may be grown from seed outside, and lifted in the Fall. It has bright orange-scarlet fruit. Ardisia crenulata, with bunches of bright red berries, and deep green, laurel-like leaves, is an excellent house plant."

Foliage Plants.

Lists of palms and ferns suitable for the house have been given several times by The R. N. Y.; these classes include the best selection of foliage plants. The familiar Abutilon, known to many amateurs as Flowering maple, may be included here; the white-edged variety, Souvenir de Bonn, is very good. Coleus is often tried in the house, but it has an unpleasant habit of dropping its leaves when chilled, and becomes very stalky and unhappy-looking if in a room where the temperature varies greatly. For a northern exposure, with poor light, Aspidistra and Bowstring hemp are the best foliage plants.—Rural New Yorker.

PRINCE EDWARD ISLAND FRUIT GROWERS.

LAST month we noted the formation of a Fruit Growers' Association in P. E. Island, which had in view the furtherance of the fruit growing industry in that province. Now we have a report of one of the first meetings of the Society, at which the Lieutenant Governor and other distinguished persons were present, and plans were laid for sending a trial shipment of apples to England in cold storage.

Hon. Senator Ferguson expressed his appreciation of the work and importance of the Association and declared it to be his firm conviction that Prince Edward Island is destined to rival Nova Scotia in the production of superior fruit. He had just returned from the Halifax exhibition, whither he had taken some 56 samples of Island apples—30 from his own small orchard; and he had expert authority for the statement that in size and bloom they compared favorably with the apples exhibited in Halifax. He was satisfied that with the adoption of the improved methods of the day as to spraying, we could easily fight the pests which menace our orchards For the first time he had this year sprayed his own orchard, following closely to the formula laid down in the Experimental Farm's report, and was happy to say with the most favorable results. Senator Ferguson then spoke of the necessity of producing those apples which will best suit the British markets. He said that in Nova Scotia orchardists were narrowing down instead of extending the list of varieties produced; and in effecting this the science of top grafting was being generally called into requisition, thus making use of the growth of trees producing unsuitable fruit. He spoke also of the importance of a proper package in which to ship our apples and the manner of filling these packages, declaring that "slack packed" apples were fatal to success. Color counted for much in the British market, and it was found by grafting on the Red Astracan, a superior bloom could be obtained for the superior varieties.

Mr. Wise, the Treasurer of the Association, having arrived submitted his report. The receipts, he stated, included besides the members' fees a grant of $150 from the government, which he had taken good care to secure before Mr. Warburton left office.

On motion of Father Burke, seconded by John Robertson, the thanks of the Association was accorded the government for having so far met the prayer of their former petition.

His Honor, Lieutenant Governor Howlan expressed his belief, as the result of a long experience, that Prince Edward Island could produce fruit second to none. He was glad that, as the result of judicious advocacy, we now possess a number of first-class orchards and was glad also to note a growing spirit of healthy emulation among the people of this Province. He had done his best upon every occasion to help the good work along. But the future generations only would reap the benefits of the work the Association has now done. He spoke of his interest in the trial shipment of apples and declared the necessity of making a judicious choice of varieties and of having them marketed in the best possible manner. He said that the British market was now our natural market. But the time might not be far distant when other countries would offer us still better inducements. He disagreed with Senator Ferguson as to the importance of color in the fruit, and said that he had but yesterday conversed with Rev. W. Hennebury, of Tasmania, who declared to him the color went for nothing in their market; but apples of medium size and superior flavor would always be saleable.

Senator Ferguson, Rev. A. E. Burke and others also addressed the Association upon matters connected with fruit production and marketing. The following resolution, moved by Rev. A. E. Burke and seconded by H. A. Stewart, Hamilton, was then put to the meeting and unanimously adopted.

Resolved that the Fruit Growers' Association of P. E. Island make a trial shipment of 100 barrels of apples to England by next trip of the cold storage steamer Lake Winnipeg.

The following report was then received and read:—

Your committee appointed to consider and report on the varieties of apples best adapted for shipment to England submit the following: Wealthy, 25 barrels; Alexanders, 25 barrels; Golden Russets, 25 barrels; and 25 barrels embracing equally Kings and Ribston Pippins. The above varieties we believe to constitute the best to send in cold storage as a trial shipment of 100 barrels. We would also recommend that the barrels made by Mr. Full, if said barrels are suitable, be procured for the shipment contemplated. We would also suggest that in packing said apples the greatest care should be exercised; supervision of packing by some capable person or persons would be absolutely necessary.

JOHN ROBERTSON,
D. A. SHARP,
RICHARD BURKE.

On motion of Senator Ferguson the following motion was then adopted:

Resolved. That the report be adopted and Northern Spy and Gravenstein be added to the list of apples recommended out of which a selection may be made.

Senator Ferguson, Marshfield; John Robertson, Inkerman; and D. A. Sharp, Summerside, were appointed packers for the Association. All matters in regard to the shipment are to be left in their hands.

We wish our Cousins good success in their efforts to export high grade apples, and would suggest that for fancy soft apples such as Alexanders, it would be better to adopt the package used by the Ontario shippers, which has been figured in Professor Robertson's report.

The Canadian Horticulturist

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

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

ADVERTISING RATES quoted on application. Circulation, 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.

GUMMING OF PEACH TWIGS. — Mr. John Craig, of Ithaca, N.Y., writes in American Gardening, that he has found the gumming to be associated with monilia fructigena, or grey rot; and he believes that the former is caused by the latter. He is of the opinion that both can be overcome by spraying.

TOMATOES FROM CANADA ought to succeed. We notice in the Green Grocer of London, an article saying that tomatoes in October were getting scarce, and worth from 3d. to 4d. a lb. These prices would give us excellent returns of about fifty cents for a twelve-quart basket, which would make tomato growing one of our best lines of fruit culture. We have not succeeded so far in getting tomatoes over in good condition. We have packed them too ripe. They should not be more than half red.

CANADIAN FRUIT IN LONDON.—Mr. A. W. Grindley, the agent in England, of the Department of Agriculture, says that Canadian consignments of pears and apples are reaching here in very satisfactory condition. Peaches, plums and tomatoes, however, have been gathered too ripe, the result being that most consignments have reached Bristol market in a more or less rotten condition. To a mere layman it appears surprising that Canadians have not before taken full advantage of the market here for fruit. Buying apples in the London streets from the hawkers' barrows, one has to pay a penny, or even three half pence for a good "eater," while good eating pears are usually ticketed 2d: yet farmers in Ontario in a good year feed eating apples fully equal to those I have mentioned to their pigs. Surely there is a means of getting such fruit on the London market in fair condition.

SEEDLING PEACH. — Mr. Frank Metcalf, Blyth, sent us samples of a yellow-flesh, freestone peach on the 17th of October, 1898. He writes "These are seedlings grown by a farmer here, who obtained first prize at the fair for them. Very few peaches can be successfully grown here. The tree is five or six years old, and is supposed to have come up from a Crawford pit. It seems to be perfectly hardy.

THE ANNUAL FLORAL EXHIBIT of the Hamilton Horticultural Society was held in the Tucket Factory, King St. W., on Tuesday and Wednesday, 15th and 16th November. The large plate glass front gave a fine display to the passers by and attracted a constant stream of visitors. The admission was free, and the flowers and a fine orchestra made the whole thing very attractive.

Among the exhibits we noticed a fine orange tree with a half dozen oranges, shown by Geo. Brown; a magnificent palm Phœnix rechinata, grown in his house in leaf-mold by Mr. McCulloch, who also showed a choice collection of palms ferns and other house plants, all grown under ordinary conditions in his dwelling house. Mr. Alexander, the president, showed a fine collection of begonias, sedums, etc. Mr. Stipe, a well known Hamilton exhibitor, showed a large collection of fruit and vegetables; and large displays of plants, roses, Chrysanthemums, etc., were shown by some of the professional florists, as for example, Dale, of Brampton; W. Hull, of Hamilton, and Webster Bros, of Hamilton.

POT ROSES FOR EASTER,

Two-year-old Hybrid Perpetuals may be forced nicely for Easter if potted not much later than December 15th; the very strong growers, Margaret Dickson, Baroness Rothschild, Her Majesty, and such varieties are difficult to get into flower. The same may be said of the weak-wooded kinds, as L. Van Houtte and Earl of Dufferin. A. Colomb, John Hopper, La France, Aug. Guinnoiseau, General Jacqueminot, Mrs. John Laing, Ulrich Brunner, and Mme. C. Wood are kinds easily forced. Use 6, 7 or 8 inch pots according to size of roots, the soil if stiff, had better be loosened with some sharp sand, a good proportion of well rotted cow manure is needed to secure a good growth. Prune the canes back to three or four good eyes and let them start in a temperature of 40° to 45°. When the buds have become well swelled and the roots active, a temperature of 60° to 65° may be maintained. Give them the advantage of all the available sunlight and keep the foliage quite free from insects and mildew. Blighted foliage is never in harmony with even the finest blooms. The Hybrid Perpetual Roses will be a welcome addition to the conservatory decorations at the Easter season. If budded plants are used, see that "low budded" stock is procured, or you will have trouble to get the roots down into the pots.

WEBSTER BROS.

Hamilton, Ont.

Question Drawer.

Grapes: Select Varieties.

1037. SIR,—I want to plant a few grape vines in my garden here, and I would like to get your opinion on varieties. I would like to put in all three colors—red, white and black. Kindly send me the names in the order of your own preference, of three or four varieties of each color, mentioning whether they ripen early or late, and whether they are quite hardy and capable of resisting mildew. I want to get vines that have begun to bear, partly to have them true to name, and partly because I want them to bear soon.

WM. HOUSTON, *Toronto.*

In reply to your letter of the 25th inst., I would recommend the following list of grapes for planting at Toronto, black—Moore's Early, Concord, Wilder; white — Lady, Green Mountain, Niagara; Red—Lindley, Brighton, Delaware, Agawam, Salem. All these should succeed with you so far as hardiness is concerned, and in ordinary season all should ripen their fruit well. I have named them under each color in the order of ripening, and they will cover the grape season pretty fully. A few of them will keep for winter use, especially Lindley, Agawam and Salem, if kept at a temperature below 40° with plenty of ventilation.

I would not advise you to plant bearing vines, as they are liable to be stunted in removal. You should rather plant one year old vines which will suffer less in removal. These will come into bearing within two or three years. and give better satisfaction.

Open Letter.

Our Fruit at Omaha.

SIR,—We have received good specimens of fruit from British Columbia, Ontario and Nova Scotia. We received this week 3 bbls. from Mr. Starr, Nova Scotia, one bbl. of Gravensteins, half Red Banks, which were very fine. We made two pyramids of them, one of each kind. On the top we put two large apples, one of them the largest apple in the grounds, weighing 26 ounces and measuring 15 inches in circumference. The Oklahoma Exhibit has one larger around but not as heavy. Our large apple is a Chebucto Beauty from N. S. We have now about 200 square feet of surface covered with fruit, all fresh, making the largest, if not the finest collection on the grounds, which is a great surprise to a large number of people who think Canada is such a cold place that we cannot grow anything but ice-bergs. We have had intelligent-looking people tell us that they didn't believe we raised the fruit we are showing in Canada. Though they raise large quantities of apples here in the Western States they are way behind Canadian fruit for flavor. Nebraska prides herself as being the banner apple growing State of the West. This being the off-year for apples in the Western States she cannot make a very fine display; not half as good as she made at the opening of the Exposition with the crop of 1897, which were kept in cold storage and lasted until new fruit appeared. The Exhibit the Canadian Government made here has been a success. The object the Government had in making it was to attract settlers to the North-Western provinces, and it has, and will still further in the years to come, be the means of inducing thousands of good settlers to go there to make for themselves and their children good homes under the freest Government in the the world.

H. C. KNOWLTON.

Canadian Court,
International Hall,
Omaha.

Our Book Table.

Book Review.—The Evolution of our Native Fruits. L. H. Bailey. 472 pages. Pubs. MacMillan Co., N.Y. Price, $2.00.

To me this is one of the most fascinating sides of Horticultural investigation. The development of our native fruits has been so marvellously raging that men have forgotten the fact of the establishment in less than a century of an American pomology. Think of the growth of the grape industry, raspberry and strawberry culture, all due to the origination of varieties suited to American conditions, and almost wholly by the amelioration of the native types of these fruits.

Unfortunately the early history of fruit growing is in most countries wrapped in more or less obscurity. It has been the fashion in the past that which political and social events have been recorded with some precision and accuracy, the introduction of important agricultural and horticultural factors bearing upon the happiness and welfare of the human race have often being entirely overlooked unrecorded, and their influence thus underestimated.

Prof. Bailey has recorded in this volume the primary and fundamental steps of American Horticulture. He says that those motives run through the book: "An attempt to expound the progress of evolution in objects which are familiar and which have not yet been greatly modified by man; an effort to make a simple historical record from unexplored fields; a desire to suggest the treasures of experience and narrative which are a part of the development of agriculture and from which the explorer must one day bring material for history and inspiration for story."

The discussion is divided into nine captions:

1. The rise of the American grape.
2. The strange history of the mulberries.
3. The evolution of American plums and cherries.
4. The native apples.
5. The origin of American raspberry growing.
6. Evolution of blackberry and dewberry culture.
7. Various types of berry-like fruits, (including gooseberries, currants, juneberries, etc).
8. Various types of tree fruits, (including persimmons, thorn apple and nut fruits).
9. General remarks on the improvement of our native fruits.

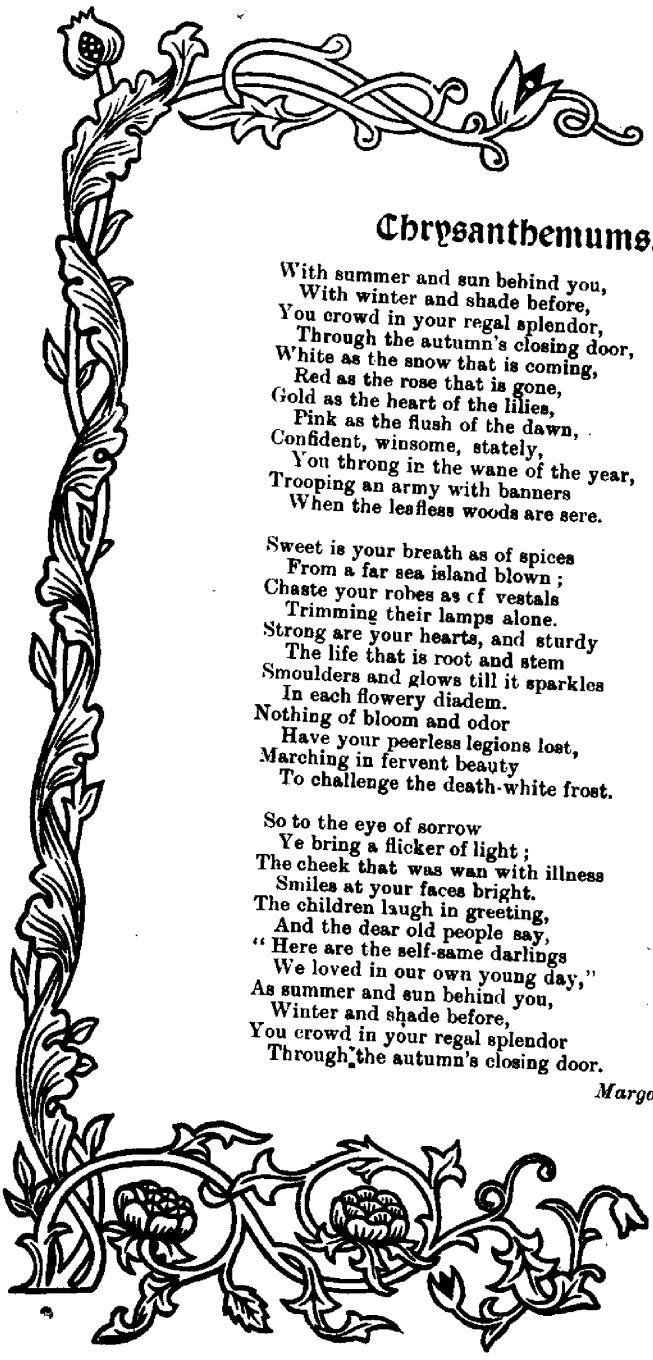
Besides the historical value of the book, it marks some important botanical discoveries. The author says, "The prosecution of the study has demanded the consultation of original sources of information and has required much travel, including a visit to European herbaria in which the types of certain species of plants are deposited." Here then we have an inkling of the scientific value of this work. The botanical nomenclature of each of the groups of native fruits has been thoroughly examined and errors of synonomy and identity eliminated as far as possible. As an example he found that the botanical name commonly accepted as belonging to our native blackberry *Rubus Villosus* was given by the botanist Aiton to the common dewberry; on looking the whole matter over it transpired that the common high-bush cranberry was at present without a name to the scientific world. Thereupon Prof. Bailey named it *Nigrobaccus* (blackberries. A complete monograph of the wild raspberries with there cultivated varieties is given; in the same way the botany of the native grapes is worked over and brought up to date. I regard the evolution of our native fruits as Prof. Bailey's master-piece, although scientific and philosophical it is full of practical suggestions and the record of the past should prove inspiration and guide to our work in the future. Mechanically the book is gotten up in excellent form, with heavy, glossy paper, which records perfectly the numerous half-tone engravings, clear type and high class binding.

This volume now presented to the public represents a study covering a period of ten or more years. Prof. Bailey has evidently put into it his best thought and effort, and the result is such that it reflects the highest credit upon our leading writer on American Horticulture. J. C.

Book Review.—Bush-Fruits, by Fred. W. Card. Size 5 x 7 inches, pp. 537. Published by MacMillan & Co., N. Y. Price, $1.50.

This is an attempt to monograph, in a horticultural fashion, the raspberries, blackberries, dewberries, currants gooseberries and other bush like fruits. In giving these plants the name of bush-fruits, the author follows an English custom, which seems appropriate and more accurately descriptive than the common American equivalent of "small fruits"; this latter, however, has a broader application.

To describe the scope of the book is simply to define "a horticultural monograph." Does a grower, amateur or commercial, wish to know how to cultivate and market any class of these fruits? This volume will give him the best practical information to be had. Does he wish to learn the history of a new variety? A full account will be found here and brought down to Sept. 30, 1898. The enemies of bush-fruits are treated at length in a practical way. The book is not without interest to the botanist and mycologist, as considerable space is given to the affinities of wild species and their cultivated forms. The fungus enemies are classified in the same way, and will be of much value to the student and investigator. The insect enemies are treated in a like manner. The great value of the book lies in its completeness. After reading it and looking up the numerous references, one may feel that the subject has been thoroughly investigated. The book has been edited by Prof. Bailey, and is the first of a proposed series of monographs on the various types of American fruit. J. C.



Chrysanthemums.

With summer and sun behind you,
With winter and shade before,
You crowd in your regal splendor,
Through the autumn's closing door,
White as the snow that is coming,
Red as the rose that is gone,
Gold as the heart of the lilies,
Pink as the flush of the dawn,
Confident, winsome, stately,
You throng in the wane of the year,
Trooping an army with banners
When the leafless woods are sere.

Sweet is your breath as of spices
From a far sea island blown;
Chaste your robes as of vestals
Trimming their lamps alone.
Strong are your hearts, and sturdy
The life that is root and stem
Smoulders and glows till it sparkles
In each flowery diadem.
Nothing of bloom and odor
Have your peerless legions lost,
Marching in fervent beauty
To challenge the death-white frost.

So to the eye of sorrow
Ye bring a flicker of light;
The cheek that was wan with illness
Smiles at your faces bright.
The children laugh in greeting,
And the dear old people say,
"Here are the self-same darlings
We loved in our own young day,"
As summer and sun behind you,
Winter and shade before,
You crowd in your regal splendor
Through the autumn's closing door.

Margaret E. Sangster.