

Technical and Bibliographic Notes / Notes techniques et bibliographiques

Canadiana.org has attempted to obtain the best copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

Canadiana.org a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- | | | | |
|-------------------------------------|---|-------------------------------------|---|
| <input type="checkbox"/> | Coloured covers /
Couverture de couleur | <input type="checkbox"/> | Coloured pages / Pages de couleur |
| <input type="checkbox"/> | Covers damaged /
Couverture endommagée | <input type="checkbox"/> | Pages damaged / Pages endommagées |
| <input type="checkbox"/> | Covers restored and/or laminated /
Couverture restaurée et/ou pelliculée | <input type="checkbox"/> | Pages restored and/or laminated /
Pages restaurées et/ou pelliculées |
| <input type="checkbox"/> | Cover title missing /
Le titre de couverture manque | <input checked="" type="checkbox"/> | Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées |
| <input type="checkbox"/> | Coloured maps /
Cartes géographiques en couleur | <input type="checkbox"/> | Pages detached / Pages détachées |
| <input type="checkbox"/> | Coloured ink (i.e. other than blue or black) /
Encre de couleur (i.e. autre que bleue ou noire) | <input checked="" type="checkbox"/> | Showthrough / Transparence |
| <input type="checkbox"/> | Coloured plates and/or illustrations /
Planches et/ou illustrations en couleur | <input checked="" type="checkbox"/> | Quality of print varies /
Qualité inégale de l'impression |
| <input checked="" type="checkbox"/> | Bound with other material /
Relié avec d'autres documents | <input type="checkbox"/> | Includes supplementary materials /
Comprend du matériel supplémentaire |
| <input type="checkbox"/> | Only edition available /
Seule édition disponible | <input type="checkbox"/> | Blank leaves added during restorations may
appear within the text. Whenever possible, these
have been omitted from scanning / Il se peut que
certaines pages blanches ajoutées lors d'une
restauration apparaissent dans le texte, mais,
lorsque cela était possible, ces pages n'ont pas
été numérisées. |
| <input type="checkbox"/> | Tight binding may cause shadows or distortion
along interior margin / La reliure serrée peut
causer de l'ombre ou de la distorsion le long de la
marge intérieure. | | |
| <input checked="" type="checkbox"/> | Additional comments /
Commentaires supplémentaires: | | Continuous pagination. |



STEUBEN, OH. PHOTOGRAPHY

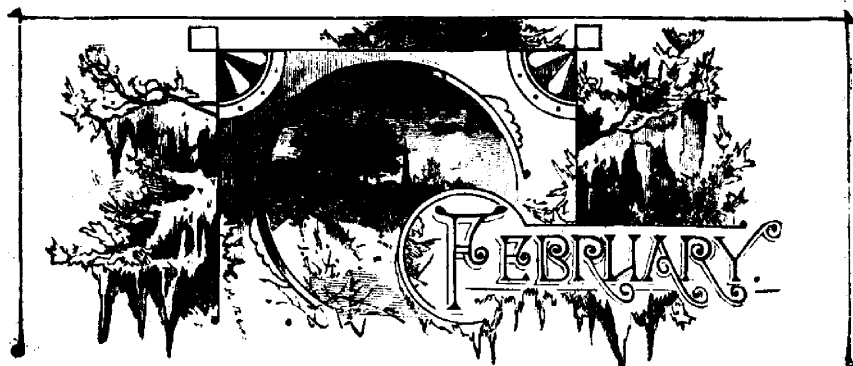
MRS. JOHN LAING.

THE
Canadian Horticulturist

VOL. XVII.

1894.

No. 2.



MRS. JOHN LAING ROSE.



EARLY eleven hundred varieties of roses are counted worthy of a place in the list given by H. B. Ellwanger in his book on the rose. How widely this favorite flower has been idolized by those who appreciate flowers, and yet how many in our province know almost nothing of the many beautiful varieties which are within their reach. A rose to them is "only a rose"; and the many charming characteristics which distinguish one from another, are to such persons a sealed book.

Among the hybrid remontants of recent origin, the Mrs. John Laing is one of the most desirable. It originated with Mr. Henry Bennett, of England, a noted rose grower, in the year 1887. This rose is a seedling from Francois Michelin. It is valuable for forcing, and yet succeeds admirably in the open ground, being a vigorous grower and flowering almost continuously. The flower is soft pink in color; very large, and very fragrant.

Mr. W. Taplin, speaking of early-blooming hybrid perpetuals, says: "Among the earlier hybrids Mrs. John Laing and Madame Gabriel Luizet take a prominent place, these being among the most beautiful of pink roses, and both are readily forced."

PROFITS OF SPRAYING APPLE ORCHARDS.



R. E. S. LODEMAN, of Cornell University, has issued a bulletin on "The Profits of Spraying Apple Orchards," in which he shows the results of actual experiments in spraying. Some of his points are most evident, *e. g.*, that in wet seasons spraying needs to be repeated more frequently than in dry seasons, and that some varieties, notably the Fall Pippin, which is badly subject to the scab, may be sprayed with profit more frequently than varieties like Duchess and Baldwin, which are usually clean. These latter varieties he found it profitable to give only one application, while the former kind received from four to six. Evidently common sense is as useful in spraying as in other things.

Of the fungicides used, the Bordeaux mixture proved the very best; indeed, so evident was this, that the superiority of fruits sprayed with it could be detected at sight by their very appearance. The action on the leaves was plainly discernible, for the Bordeaux mixture protected the foliage so perfectly that scarcely a diseased leaf could be found. In the case of the Fall Pippin, the foliage of which is particularly subject to *fusicladium*, the difference in the foliage on the trees sprayed and unsprayed was very easily discernible.



FIG. 416.—APPLES SPRAYED AND UNSPRAYED.

In some cases the size of the apples was perceptibly increased, and, in his opinion, the color was also heightened. As an example of the experiments from which the conclusions were drawn, we mention the following one: A tree of Maiden Blush was selected and one half was sprayed and the other half left untreated. When harvested one hundred apples unsprayed weighed $24\frac{1}{2}$ lbs., while an equal number similarly chosen from the other half of the tree weighed $37\frac{3}{4}$ lbs., a gain of over 54 per cent. This difference was forcibly shown in another way; in fact, so plainly and conclusively did it show the value of spraying apples susceptible to the attack of the scab, that it alone would convince

the most sceptic that the operation is a paying one. One hundred unsprayed apples filled a half-bushel basket evenly full, as shown in the accompanying illustration, and one hundred of the average sprayed apples filled a half-bushel basket twice. Thus the bulk of the crop of the Maiden Blush was practically doubled.

Mr. Lodeman further affirms that the keeping qualities of apples were also improved by spraying. He experimented with some Fall Pippins and Maiden Blush, from both the sprayed and unsprayed portions of the tree, gathering them about the 20th of September, and storing them in a cool, dry cellar. On the 15th of October the unsprayed apples began to show signs of shrivelling, and on the 18th of November they were much shrivelled, and some decayed, while the sprayed apples were still plump and fit for market.

With regard to the use of Paris green for the codling moth, Mr. Lodeman's experiments went to show that many varieties of apple trees were susceptible to injury from too frequent applications of this poison, and that one or two applications were as many as the average tree would bear without injury, unless the strength of the poison was somewhat counteracted by the use of a considerable quantity of lime.

Some experiments were also made with fungicides upon the foliage of the peach, and of all the preparations that were applied, the Bordeaux mixture least of all affected the foliage injuriously.

A BALANCED WHEELBARROW.

The wheelbarrow plays no small part in the making and the after care of the ordinary garden, but it has its limitations and its disadvantages, one of the

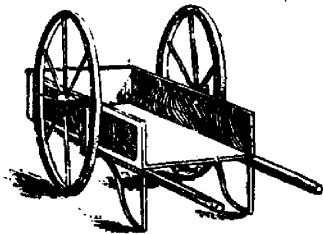
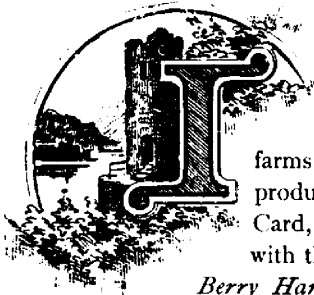


FIG. 417.—TWO-WHEELED GARDEN BARROW.

latter being the severe strain upon the muscles when wheeling a full load, since the person between the handles must lift from a quarter to a third of the whole load in addition to propelling the whole. A barrow having two wheels is shown in the illustration, engraved after a sketch by Webb Donnell, on which the load may be almost perfectly balanced, leaving the one using it little more to do than to move it forward.

It has removable end boards at either end, and can be dumped from the rear. The drop axle here figured may be used, or small wheels with the end of the axle bent in exactly the opposite direction. The wheels may be of a width to run on each side of a garden row.—American Agriculturist.

BLACK RASPBERRIES AS A FARM MARKET CROP.



IN a recent bulletin from the Cornell Experiment Station, there is a very interesting discussion of the subject of growing black raspberries on farms where they may readily be evaporated, and the product sold at a fair price. The author, Mr. Fred. Card, refers to some important points in connection with the work, as follows :

Berry Harvester.—The advent of the berry harvester makes it possible to conduct berry farming in remote locations. Without this implement, the evaporator is just as dependent on location as the grower who sells fresh fruit, for it is only in the vicinity of towns of considerable size that pickers can be secured in sufficient numbers to make a safe business in small-fruit growing.

Varieties.—The variety chiefly grown for evaporating purposes throughout the great evaporating sections of Central and Western New York is the Ohio, yet it is by no means certain that this is the best. With a few of our best growers, the Gregg is coming to supplant the Ohio, and where it proves to be hardy, it is a more desirable variety to grow, especially if picking by hand is practiced, for



FIG. 418.—BERRY HARVESTER.

the large, firm berries are much preferred by pickers. They adhere to the bushes more firmly than most other varieties, and some growers do not find it satisfactory to gather them with the harvester ; others, however, do gather them successfully in that way. The variety does not prove so universally hardy and satisfactory as the Ohio.

Harvesting.—The means of gathering the crop is one of the most important considerations in growing small fruits, and, as before intimated, upon the success of the berry harvester depends the adaptability of raspberries as a farm crop. This harvester is a very simple affair (see Fig. 418) consisting of a canvas tray some three feet square, there being only enough wood about it to form a framework and enable it to be moved about.

Under the corner which rests on the ground, there is a sort of a shoe of wood, enabling it to be slid along from bush to bush easily. In one hand the operator carries a large wire hook, with which the bushes are drawn over the canvas, or lifted up if too low down and in the way. In the other hand is a bat resembling a lawn tennis racquet, with which he knocks off the ripe berries. This is merely a canvas-covered loop of heavy wire fastened in a convenient handle. In place of this, some use a wooden paddle, but this probably bruises the berries unnecessarily. In gathering by this method, the berries are allowed to become pretty ripe, and the plantation is gone over but two or three times in a season. Many dry leaves, some stems and a few green berries are knocked off with the fruit, but the leaves are no disadvantage, for they help to absorb moisture before and after drying, and may aid in preventing mold if the fruit has to stand some time before going to the evaporator. The leaves are quickly taken out by running the fruit through a fanning mill after it is dried. Some growers fan them out before drying, but this has the disadvantage of bruising and crushing more berries. The berries are usually allowed to stand in the field in boxes for a time after gathering, and any insects, which may have fallen in will usually crawl out and disappear.

Growers who have had much experience say that a man will average eight to ten bushels a day with the harvester, although much more can be gathered in the best picking. On one farm visited last year, two men and two girls had gathered thirty-one bushels the day previous in ordinary picking, and one of the men had been in the field only part of the time. This shows the first cost of gathering to be less than half a cent per quart. Running them through the fanning mill costs but a trifle; then before marketing they are picked over by hand to remove stems, green berries and other litter. This does not cost over one cent a pound, and is sometimes paid for by the pound at that rate, so that the whole cost may be placed at one cent a quart, as against two cents usually paid for hand-picking. Growers who have had experience with both methods seem to be united in the opinion that harvesting yields a better quality of dried fruit than hand-picking, for the reason that, if picked by hand, they cannot afford to look them over again after drying, and so they do not go to market in as clean and nice condition as those which come from the harvester.

Some extensive and general fruit growers find it inconvenient to attend to the matter of looking over the dried product at the same time that other fruits, which follow on after the raspberries, are claiming their attention, and for that

reason prefer to pick a large part of the crop by hand and market it fresh, if they can find pickers conveniently. In that case, they find the harvester a great convenience to finish up the last of the crop. Every grower knows how much dissatisfaction and unpleasantness arise in keeping the pickers at their work after the berries begin to get thin. With the harvester, the late berries can all be finished up at one time with a great deal of satisfaction to all concerned. This plan is equally available for those who sell their fruit fresh. The last of the crop can be gathered and dried, thus proving a relief to the market and the patience of the grower and pickers. This plan of harvesting was invented and introduced by Mr. Benedict, of Dundee, N. Y., and is extensively used by berry growers of that region.

LANDSCAPE ART.

The man who has painted a good landscape has only done so after years of patient labor and perpetual consideration of the proportion and balance of parts of all the materials he works with, and his instinct as to shape, size and position of the various objects he has introduced is so sure, that the changing of one of them would probably result in the deterioration of the whole. Each has reasons for its place, size and form, reasons which, may be, would come under no formula, but are, nevertheless, entirely potent. A hand placed over some seemingly unimportant feature will often overbalance the whole and teach more of subordination of parts than pages of explanation. Careful study of the foliage tints in half a dozen good pictures will be a better lesson in planting for effect than the conning of all the catalogues of striking novelties ever published; it would be valuable did it only teach the mistake of planting trees in proximity for the sake of the contrast of their tints—a mistake too common in these days of perpetual new introductions of high-colored and variegated trees and shrubs. All these points, patiently and conscientiously considered, will develop in the outdoor artist the feeling of due, proportion of parts in his own composition; and he will come to have as sure a perception of fitness in their size, form and relative position as the painter, since his work is founded on principles closely related and no less artistic.—Garden and Forest.

BAKED APPLE DUMPLINGS.—Peel and core eight tart, juicy apples, filling the cavity left by the core with sugar and a pinch of cinnamon or cloves. Make a soft crust as for baking powder biscuit, roll into a sheet about one-quarter of an inch thick, cut in eight pieces, and cover each apple separately, pinching the edges of the crust together over the apple. Lay them side by side in a pudding dish, spread butter over them and nearly cover with boiling water. Cook moderately fast until nicely browned. Serve hot with sugar and cream.

MY EXPERIENCE IN 1893 IN SPRAYING, ETC.



HE past summer was one of the worst I can remember for all kinds of insect pests, including moth, curculio, green aphid, potato bugs, currant and cabbage worms, and as I had reason to believe that a great many were spraying the past season, I was waiting and watching for their experience; but to keep "mum" appears to have been the order of the day all along the line. Even at the Peterboro' meeting there appears to have been little said about spraying, and those who did give their experience did not agree as to its benefits. Mr. Geo. Cline has found spraying a benefit in growing plums. Maxwell Bros., of Geneva, N. Y., who have 80 acres of plum orchard do not spray for curculio. We have also the statement of Mr. Barry at last winter's meeting of the N. Y. Horticultural Society, that one of the benefits of the society was that they had proved that spraying was of no use for curculio. My own opinion is that there is yet a great deal of experimental work to be done which should be done at our experimental farms, where they have the time to give the work the proper attention.

My own experience the past season has not been very satisfactory. The sprayer I used was a Garfield Knapsack, costing about \$15, with Vermorel nozzle, which does its work nicely. Any one growing half an acre of potatoes, and having 100 currant or gooseberry bushes should have one. A pail of liquid will go twice the distance, do the work twice as well and in half the time used in the old way with whisk, broom or watering can.

Well, I used dilute Bordeaux mixture, and sprayed pears and grape vines before leaves opened. After the blossoms fell I again sprayed with the same mixture, with two oz. of Paris green to twenty-five gals. of water added. I sprayed four pear trees, two cherry trees, ten plums, one apricot, one Prunus Simoni, and twenty grape vines. After plums were about the size of cherries or a little larger, I again sprayed thoroughly, trying to cover all the fruit. Now, I expected to see those trees grow and have luxuriant dark green foliage. Instead they appeared to stop growing, the leaves and fruit being a dirty white from the lime used. Then the plums were badly attacked with the green aphid, and I sprayed them with kerosene emulsion.

Results.—I had three pecks of plums where I should have had six or eight bushels, half of what I had were badly stung with curculio. The best plums were high up where I could scarcely reach them with the spray. The leaves withered and fell off my Abundance plum; it leaved out again a month later, but made no growth. My Prunus Simoni got sick, then very sick, and then died. My apricot, 1½ inches through, lingered a week longer, and decided to follow the Prunus Simoni. My Weaver plum, two inches in diameter, that had given such promise of a good crop, appeared to lose heart after the apricot was

gone, and soon fell asleep also, and late in the fall I cremated him with the others; peace to their ashes. The pears pulled through pretty well, with the exception of one dwarf that was handy to get at. I gave it a couple of extra doses; it quit growing and the fruit shrivelled. My Montmorency cherry did well, and by picking the cherries half ripe, I got about four quarts of fruit. The robins only got about one bushel. The English Morello did not do so well. It kept on growing, but the fruit, after the last spraying, ceased to grow, and dried up on the tree, and is there yet. I sprayed my English gooseberries, Industry and White Smiths, twice with $\frac{1}{2}$ oz. liver of sulphur in a pail of water, and had no mildew. I used Paris green on currants and gooseberries for the worm with perfect success. It is better for the first spraying than hellebore, and much cheaper. Thus ends my first year's experience in spraying. I forgot to say that I had a good crop of grapes free from disease of any kind. I have learned some things; one of them being that Japan and native plums are as tender in the foliage as the peach, and must be sprayed, if at all, with very weak solutions. What spraying I will do next spring on pear, plum and cherry trees, I will do before leaves open.

St. Thomas.

A. W. GRAHAM.

POSITION AND SOIL FOR ROSES.



THE first requisite in the culture of roses is the selection and preparation of a suitable place for planting. To begin with, choose the best place in the garden, a place where you can offer sufficient protection by means of hedges or board fences from bleak, sweeping winds. A warm sunny position is also requisite; if so situated that there is an exposure to the morning sun, and the hot rays during the afternoon are in part, or wholly shaded, all the better. Besides scattering them through our gardens, roses may be made very effective planted in borders about our lawns, either individually or in groups, and also planted in beds on the lawn.

In connection with a choice of location, we must see that roses are provided with a proper soil. Where there is too much clay the soil can be made sufficiently friable by the application of wood and coal ashes, lime, burnt earth, etc. Where, on the other hand, the soil is too sandy or too light, we need to bring clay, leaf-mould, muck, etc., to give sufficient body. On no account attempt to make roses grow in a wet spot. If there be such place which it is desired to use, let the soil be thoroughly drained by sinking tiles to a depth of four feet, or provide in some other way for carrying off the water.---
 "The Rose," by H. B. ELLWANGER.

SELL YOUR OWN FRUIT, AND SAVE THE MIDDLE-MAN'S PROFITS.



THE best method of creating and establishing a trade in a new field is to run a delivery wagon. The commission of the seller will more than pay for the extra work, the sales are more easily increased and the customers more easily retained. The latter's tastes can be more easily learned and their supplies more readily selected to their satisfaction. In starting in the business try and obtain for customers some of the best people in the village. Tell them plainly your intentions and secure their consent for a trial before the fruits and vegetables are ready for sale. By doing this, the best consumers are secured from the first; and when the time for delivery comes, a route is already established and the dread of peddling is removed. Invite customers to make criticisms. The best may be hard to please, but I have found them willing to pay well for what they want, and supplying their wants will teach the grower to be particular and painstaking. These qualities should be early learned and always retained.

I never put inferior fruit on the market. The sorting is done by the pickers in the field and they also face the boxes on top, not with the largest berries, but with the medium-sized, placed with the hulls down. The object is to get each box uniformly full and add attractiveness. Facing the box makes it a thing of beauty to the picker, and being particular with the top will teach him to be neat in all the work.

By the time the season is fairly opened I set my prices and stick to them. By doing this, I begin to take orders for canning at once, and my customers know that no matter when they take the fruit for this purpose, the price will be the same. By the time home-grown berries ripen, foreign berries are selling at 10c. per qt. I start at 12c. in that case and drop to 10c. when the main crop ripens and hold to this price through the season. One thing to guard against is not to charge one customer more than another. This they will not forget or forgive. When the customers find out they cannot buy for less than the given price, they will stop haggling over it. If I can get 10c. for strawberries, I do not raise after the crop begins to get scarce, and the regular customers are the only ones supplied at those times.

It is surprising to see how much fruit a family can be made to eat. When fresh strawberries are offered at their doors it takes quite a degree of self-sacrifice on their part to say no. If one variety of fruit does not quite suit their fancy have another differing in color or flavor. Keep them eating and canning all summer, and the secret of doing it, is to place the fruit where they must say no, instead of leaving for them the necessity of going to the market for their supplies.

Have settlements monthly, as collecting daily takes too much time and many customers would refuse fruit because of lack of change. Supply each customer with a book in which you charge, from day to day, the supplies furnished.

Raspberries follow strawberries without a break and a steady supply is kept up. I raise blackberries and red varieties, but mostly the latter. The Shaffer, a purple variety, is liked by many for canning, for which purpose I know of none equal, either red or black. Blackberries have been a failure more often than a success, and I do not raise them, but as the grower has the market or a good list of customers looking to him for their supplies, he should make the marketing continuous until the last of the winter's fruit is sold. Those varieties should be planted that give a succession, and leave no break in the season.

Follow the berries and currants with grapes, plums, peaches and apples. Quite a demand for grapes was made by mixing the black, red and white together in the same box. When the grower is in daily contact with the consumers it is possible to experiment in many such ways to tickle the palates and please the fancies of the customers by combining and arranging the various supplies in many such ways. The grower should be a storehouse of knowledge as to the various ways of canning, preserving and making jellies and marmalades of the various fruits, and be prepared at all times to supply the demand that his energy and watchfulness creates.—Farm and Home.

STAMP OUT THE BLACKBERRY RUST.

Blackberry and raspberry anthracnose, or rust, is produced on the canes in the form of small round or elongated whitish patches, slightly flattened and bordered with a ring of dark purple. These patches gradually increase in size and number, and finally destroy the new growth or stunt it badly. Upon the leaves it is often visible as very small yellowish spots surrounded by a dark border, resembling those on the canes and leaves. The fungus producing the disease passes the winter in the diseased canes and leaves, a fresh crop of spores is produced from the old spots in the spring, and the new canes and foliage are readily affected.

The raspberry anthracnose soon becomes deeply seated in the canes, and no fungicide can reach it. The disease can be greatly retarded by cutting out and burning all diseased wood. It should be cut out in winter or very early spring, below the lowest diseased spot. If the canes are then sprayed before the leaves start, with a solution of sulphate of copper, using one lb. to 25 gals. water, and if necessary sprayed two or three times during the summer with Bordeaux mixture, very little damage is to be feared.—Farm and Home.

SI HOSACK: "How brown an' yaller the sun is settin' to-day." Liz Francis: "Yes; it looks for all th' world like one of mother's punkin pies!"—Life.

WINTER WORK AMONG FRUITS.



THE above is the title of a paper by Mr. I. B. Pierce, a well-known member of the Ohio Horticultural Society. We make a quotation from it on Winter Pruning; but in reading them our readers should be cautioned about the difference in climate. Winter pruning must mean late fall and early spring pruning with us in Canada, because our winters are seldom mild enough to favor this work in that season. Besides this, it is important to coat with paint, or varnish, all large wounds of our fruit trees, unless made fresh in the height of the growing season, in order to prevent the drying of the wood, and cut portions of the bark; also to prevent injurious action of the cold upon the exposed cells.

The longer I grow fruit, says Mr. Pierce, the more apparent it seems that a grower of all kinds has many advantages over the specialist. The grower of a single kind has but three or four weeks in which to market his crop, if it be anything except apples, and if his one crop fails he must depend upon something outside of fruit for a living until another fruit season.

On the other hand, the grower of all kinds is occupied in marketing from June until January or later, and the same team and wagon and many of the conveniences used in gathering and marketing can be used all through the season. The grower of summer fruits who has a local market may supplement his garden with a winter apple orchard, and thus find work for himself and team until near Christmas. Any one possessing a number of acres of orchards of the various fruits, can generally find work for all mild days in pruning, removing brush and rubbish and putting the orchard in first-class order. It used to be supposed that pruning must not be done when the trees are frozen.

By doing the pruning in winter many large orchardists are able to keep a part of their men employed, when the men need work the most, and at the same time have the spring months for something else. Fruit trees do not freeze at as high a temperature as water, and generally when the thermometer stands at 26 degrees or above there will be found no frost in the branches. If the orchard is old and there are dead branches and sprouts started on the bodies, these may be removed in the morning, trimming green growth in the tops later in the day as the temperature rises. There is no way of telling on paper just how a tree should be pruned, as each tree differs in its wants, and must be pruned accordingly. The first thing is to remove all dead wood, and all branches that cross or clutter the inside of a tree making it difficult to climb into it.

After this trim to balance the head, making the tree as symmetrical as possible. Where the tree has not been trimmed for several years there is often strong new growth here and there through the tree, that unthinking pruners think they must cut. I have noticed that professional pruners around cities and villages, generally make it a point to take out all wood that has a suspicion of newness about it. Now in many instances I think this is wrong. These growths called water sprouts, are efforts of the tree to make up for previous over-pruning, and are a step in the way of keeping up its youth and fruitfulness. One will often see in the old neglected apple tree, a sprout start with health and vigor, and in a few years become a large bearing bough while the older limbs are barren.

Water sprouts (all vigorous shoots starting from main branches are called by this name) are often in just the right place to balance the tree or to fill a vacancy in the top, and in such places scrupulously preserving them will be an advantage, and if they crowd older growths in a few years, then older branches may be removed to make room. There are instances where apple trees have been pruned on the renewal system, cutting away a portion, each year, so that the entire outer portion of the top is renewed once in six or seven years. Such a course accompanied with high feeding has resulted in great thrift and productiveness, and there is no doubt room for a good deal of valuable experimenting along this line. Pears require about the same course as apples, but in rich soil require more shortening in. Mr. C. W. Counter, of Toledo, one of the most successful pear growers in Ohio, shortens in more than half the new growth each year. He gives high cultivation and gets a growth about three times as rank as ordinary orchardists, so perhaps there is more need of severe pruning. Cherries require but little pruning, and peaches and plums are generally pruned by shortening in the outside with a view to making a more compact form. There is, however, a difference of opinion in recent years about the desirability of annually shortening in peach trees. With the most persistent efforts to form a symmetrical head, the peach will throw off its lower growth and become spreading and of a form that requires propping, as soon as it begins to bear heavily. This seems to be Nature's way of bringing every portion of the tree out into the sunlight and air, and for the last few years I have left the matter of shaping the top entirely to Nature, pruning only to remove dead wood. All rules have their exceptions, and the almost universal way at the north of pruning newly set peach trees does not work as well in the south and south-west.

The pruning of grape vines is also in order on any mild winter day. This is generally made a difficult job and few amateurs go at it with any definite idea what the result of their efforts will be. It is really much more difficult to decide just how much to prune a vine upon a house or arbor than one in a vineyard because the latter is kept within certain close limits and pruned by certain rules which are not apt to vary much from the wants of each vine.

The only rule with large vines upon arbor or house is to remember that each bud will produce a shoot and that buds multiply with a rapid ratio on a vigorous growth.

The remarks of Mr. Pierce regarding the encouragement of stout, young, and thrifty shoots in old apple trees are in line with our own experience at Maplehurst. Our old orchard, nearly one hundred years old, had been always kept pruned up closely, all shoots in crotches and on limbs carefully clipped off, until every bearing portion was almost beyond reach of the ladder. A few years ago the writer determined to allow a few vigorous shoots in various parts of the trunk, crotches and branches to grow. They have shown double the vigor of the old limbs, borne far the finest fruit, and to-day constitute the larger portion of the top of the tree.

THE GOOSEBERRY.

The gooseberry is a neglected fruit with us, and, as the autumn is the best time for starting a plantation of it, we want to say a few words in its favor. The market is very rarely over-supplied with the fruit, and a reason for this is that it can be gathered and marketed through a long season, instead of all having to be harvested and sold at one time. The green berries sell readily almost as soon as they are large enough to be picked, and bring then the best prices of the season, but this is equalized by the fact that later on they are much larger, and a bush will yield more quarts. A gooseberry bush at two years from the time of planting should yield three quarts of fruit, and after that five quarts a season. An average retail price is about 10 cents a quart. The crop is almost a certain one, for if the worms are kept off, which may be easily done by the use of hellebore, the only other enemy which they have to fear is mildew. Our native varieties are not much subject to that. The plants should be set on cool, moist soil, and a partial shade does not injure them. Close pruning will increase their productiveness and tend toward making them longer lived. The fruit is the earliest of any we may have from our home gardens, and, for this reason only, should be more widely grown than it is. In planting we advise procuring one year plants in preference to those older. Give good cultivation, a regular manuring in the fall, and a cool mulch in the summer to protect the roots, and we think you will have no cause to complain at the profit which a small patch of the fruit will give you.—Western Plowman.

MRS. BILLUS (after the company had gone): "Johnny, you shouldn't have eaten those preserved fruits. They were not intended to be eaten. They were put on the table to fill up." JOHNNY BILLUS: "Well, that's what I used 'em for, mamma."—Boston Globe.

WINTER CARE OF TREES.



HERE is no better time than the present to examine groves and groups of trees in order to determine whether they are becoming overcrowded, and to designate those which should be removed to make room for the rest. The axe is the only remedy for crowding among trees, and when the heroic treatment is necessary, no considerations of sentiment should be allowed to interfere with its use. At this season, too, it is easier to find where branches are growing too thickly on a tree, and where they are rubbing each other, than it is when they are in full foliage, and in the warm days of midwinter pruning can be done to advantage. When it is necessary to remove large branches they should be sawed close to the trunk and the edges cut smooth with a sharp knife. Coal-tar applied to the wound will keep out moisture and fungi, and thus prevent decay. Any kind of ochreous paint will answer almost as good a purpose, and it can be easily applied with an ordinary brush. All sprouts could be cut from the trunk and all suckers from its base, but the dead twigs in the heads of trees can be more easily detected in the summer. Of course, all diseased limbs should be amputated, and so should the branches of such trees as Hawthorns or Yellow-wood that are badly infested with scale. A top-dressing of loam or fine well-rotted stable-manure spread over the roots will encourage a vigorous growth next year. The dressing should be scattered over a circle as far as the roots extend.

In the Shrubberies.—Shrubs, too, must be well fed if they are expected to make luxuriant growth and show their highest beauty. No cultivator thinks of obtaining a fair crop in garden or field without fertilizing his land, and yet too many persons starve their shrubberies and then wonder why they are thin and unattractive. Of course, the shrubs like Coreopsis, Forsythia, Van Houtti's or Thunberg's Spiræa, Cercis, the bush honeysuckles and other shrubs which flower early, should not now be cut in severely, since the buds for spring flowers are already formed, and if we cut away the branches we destroy the possibility of flowers next season. If late flowering shrubs have not yet been pruned, the work can still be done, and this will encourage the growth of wood which will bear flowers later in the season. In this class are the Althæas, Hydrangea paniculata, Indian Tamarisk and others. The pruning of roses which are liable to be killed back to some extent had better be postponed until spring, so that we can be sure to cut below the dead wood.—Garden and Forest.

"I say," inquired the lady-bug; "why don't you dress in the prevailing colors?" "Bah!" answered the potato-bug; "lavender doesn't go with my complexion, and these Paris greens simply make me sick."—Puck.

GUARD AGAINST MICE.

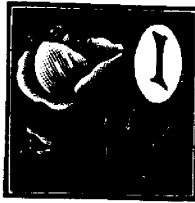


HERE snows cover the ground for a large part of the winter, and often for a considerable depth, mice are well protected from observation by their natural enemies and are enabled to carry on their work of injury without molestation and without exciting suspicion. As they burrow their way from one place to another, or from one tree to another, either along the surface of the ground between the soil and snow, or through the snow itself, it is an efficient and inexpensive preventive of injury to trample the snow until it is quite firm and compact about the plants. This is very quickly done and leaves the snow in a condition which mice find it impossible or inconvenient to work through. The greatest danger is to be feared in the vicinity of fences or hedges, where snows drift and lie deepest. In such places the destruction of the bark sometimes extends from the ground to the lower branches of young apple and other trees, especially as mice are liable to be most abundant about the boundaries of an orchard, as such boundaries are usually in such a condition as to be really a refuge for vermin. Where snows are not deep or permanent in winter, it is often necessary to furnish the trunks of small trees with some kind of protection. They are particularly liable to injury if growing in the vicinity of grass or herbage.

For such protection any material may be used which is unpalatable or impregnable to mice, and is not too expensive. Laths and pieces of boards and staves are effective if loosely bound around the trunks by string or wire, the lower ends resting upon or slightly inserted in the ground. These are sometimes left on all the year, but in other cases are removed in the spring and replaced in autumn. Tared paper is also used, but, unless very thick, it is liable to become broken down and insufficient. What is known as asbestos-paper has been found useful. This or the heavy tared paper should be cut into strips which will reach a foot or more up the trunk of a tree, and wide enough so as to go around the stem and overlap at least an inch; and also leave half an inch loose space between the bark and paper, which should not be bound tightly around the stems. The lower ends of the paper may rest on the ground, and the sheath can be held in place by a couple of strings. If there is plenty of room for growth allowed, the paper need not be removed, and it will still last for several years. Painting the trunks with tar has been advised, but it is doubtful whether this would not injure young trees, and, although painting with other substances may answer the purpose, they are not so reliable as is an actual barrier.—Garden and Forest.

NATURALISTS assert that a healthy swallow will devour 6,000 flies every day.

NOTES SUGGESTED FROM READING THE JANUARY HORTICULTURIST.



N "*Raspberries New and Old*," for yellow, Golden Queen is omitted. If all except it were omitted, the list would be improved. For Southern Ontario the Gregg is the most valuable black cap; in colder regions, Hilborn is probably ahead of Souhegan, Mammoth Cluster and Ohio. Of new varieties, Thompson's Early is a poor grower and abundant bearer, of early, medium-sized, fairly firm fruit; simply useful as an early variety. Plant and fruit of the wild type. I have tried Ada, Palmer and Johnston's Sweet black caps; they seem to be weak growers, the Ada especially so. The Palmer is early and may be useful, the fruit is rather large. Johnston's Sweet gives medium-sized fruit of good quality.

Why does not R. B. Whyte, of Ottawa, allow his raspberry canes to reach their ultimate height in the fall? They would, I think, bend down for winter protection more readily. In spring they could be shortened.

"*Kiefer Pears*."—In colder sections of country, in colder soils, or if not allowed to remain long on the trees, I think these pears will have little value. On warm soils, in the warmer sections, they will be very valuable. They are fine growers and great bearers. A good-sized, beautiful golden-yellow, juicy, spicy pear, will in November have numerous friends and admirers. When well grown they can be readily canned and have a quince-like flavor. They are not as rich and sweet as some earlier pears.

Your "Farm and Home" writer decides that the pear has no insect enemies except the fall web worm. This is all very fine, but by no means correct. He ceases to cultivate pears in September. This kind of teaching has caused many a grower to get weeds and sod well established about his trees, and this commonly means failure. The grasses and the biennial weeds start in autumn; therefore, cultivate in autumn.

"*A Rapid Growing Maple*."—Although evergreen trees, such as Norway spruce or Austrian pine, make the most effective windbreak, they are not suitable for roadside planting. Many people use maples, but very few know that a variety that is not only cut-leaved, but grows four times as fast as the ordinary kinds, can be readily obtained. From its rampant growth it inclines to form an open head. To make a compact head, the limbs require to be shortened in a few times. It has been well tested here, and has proved its value. The name, *Acer dasycarpum heterophyllum laciniatum*, correctly describes the variety. It is much used in the prairie regions, where rapid growth is urgently called for.

"*Strawberries for Home Use*."—At present, the Bubach is the leading berry. It is a very fine grower, makes a fair supply of plants, and produces a large crop

of berries that are rather sweet, fairly firm, and which are of good size the season through. Although supplied with but few stamens, it fertilizes well with me. Perhaps the presence of other varieties may account for this. Warfield is much like Crescent, but rather larger, and hulls easier.

Williams has white ends, and, so far, does not equal Bubach in productiveness or quality. I have discarded Col. Cheney, Seth Boyden, Monarch of the West, Great American, Downing, Cumberland, May King, New Dominion, Manchester, Sharpless, Crescent Seedling, Atlantic, Jessie, Kentucky, Belmont, Bidwell, Capt. Jack, Prince of Berries, Arnold's varieties, and many others. Most of these succeed occasionally, but are not reliable.

Niagara Falls South.

E. MORDEN.

Garden Seed should and will be grown in a climate that is most favorable to the production of the vegetable. One favorable for the growth of vegetables where the seed is eaten (such as peas, beans, etc.) would be one that induced rapid growth, for we know that the seed is wanted as soon as possible after sowing, as it is the seed only that is sought by the gardener, and it would be difficult to get an early sort where vegetables grow slowly. For the class of vegetables of which the substance is eaten or used (such as lettuce, cabbage, cauliflower, etc.) a climate should be selected where the growth is slow, since the longer the period of running to seed the better, especially so with lettuce and cabbage. If the seed stock in lettuce makes its appearance almost as soon as the lettuce is in head, the result is very unsatisfactory, as the quality is regarded as very poor.—C. C. MORSE, before World's Hort. Congress, 1893.

Manure for Bulbs.—An ounce of nitrate of soda, dissolved in four gallons of water, is a quick and good stimulant for bulbs, to be applied twice a week after the pots are filled with roots, and the flower spikes are fairly visible. A large handful of soot, or about a pint, tied up in a piece of old canvas, and immersed in the same quantity of water for a day or two, will furnish a safe and excellent stimulant; also good and safe is a quarter of a pound of cow manure mixed in a large garden pot of water, and used as required. Any of these stimulants will do good, or the whole of them applied alternately will benefit bulbs that need more sustenance than the soil affords.

How to Grow the Pansy.—The pansy delights in a cool, rich loam; the richer, the larger will be the flowers, in a partially shaded situation. It never flourishes as well during the hot days of July and August as later in the season. Young plants, from seeds sown early in the spring, if the bed be very rich, will come into handsome bloom during the latter part of June. All the first blossoms should be picked off that the plant may first become robust. Even with the old plants, the great secret of keeping them in constant bloom is to pick off the blossoms early and constantly, since it weakens the plant more to ripen one seed-pod than to yield a dozen flowers.

DISEASES OF RASPBERRIES AND BLACKBERRIES.



HE red rust is comparatively well understood since the Department of Agriculture has investigated it. This rust has a perennial mycelium which lives over winter in the plant and develops with the young canes the following spring. In the summer of 1892, a single blackberry-bush was found on the station-grounds, affected with the disease. On June 23rd all the canes were cut close to the ground, and new ones, apparently healthy, sprang up. This spring, however, at the usual season, the leaves and twigs were covered with the well-known orange-red color, showing that the fungus had been continuing its growth all the time within the tissues of the plant, and was ready to develop its spores at the proper time. This one fact in the life-history of the fungus being known, it is easy to see that a plant once attacked is doomed, and that the only remedy is to dig it up and burn it. Spraying may prevent the germination of some of the spores which it scatters abroad, but it is far cheaper to begin at the source and prevent their production in the first place, by rooting out and burning every diseased plant the moment it is discovered. It may be necessary to look after the wild raspberry, blackberry and dewberry plants in the vicinity, for, if they are numerous and badly affected, the disease may spread from them faster than from any other source.

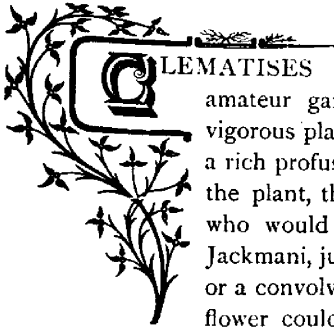
The anthracnose, *glæosporium venetum*, is another serious disease. The hyphæ of this fungus do not extend from the old to the new canes, as in the red rust, and if all the portions could be cut away this would be an effective remedy. The attacks of the fungus, however, are so indiscriminate and general that in most cases the remedy is impracticable. It is hard to counteract it by spraying, because of the difficulty in protecting all portions of the cane with a coating of the material. Probably the Bordeaux mixture will be found effective if the spraying is begun with young plantations, and the treatment continued throughout the year.

Another disease, which is probably more common than is generally known, manifests itself by large knotty swellings of the roots. Affected plants lose their vigor and productiveness, and with our present knowledge, we can only say, that it will be prudent to avoid setting out plants which show any such swollen roots. The cause of these swellings is yet a mystery.—Garden and Forest.

THAT FRUIT GROWING IN ONTARIO is so extended an industry seems to be a great surprise to our American cousins. We notice in the N. Y. Commercial Bulletin and in the California Fruit Grower, a paragraph quoting Prof. James' statement at our Peterboro' meeting, that the Province of Ontario has 7,000 bearing apple trees, 2,000,000 grape vines, 700,000 plum trees, and 500,000 each of cherry, pear and peach trees.

✻ The Garden and Lawn. ✻

CLEMATISES.



CLEMATISES have been familiarized to the great body of amateur gardeners by the not uncommon spectacle of a vigorous plant clothing a fence or wall, and covering it with a rich profusion of large violet flowers. Asked the name of the plant, there are few persons at all interested in flowers who would not be able to tell you that it was Clematis Jackmani, just as they could point out a rose, a honeysuckle, or a convolvulus. Under such a guise as that indicated, no flower could more attractively present itself, for there is a natural grace and beauty about the plant when rambling over a wall or arbor which appeals irresistibly to every mind, and is quite distinct from the effect produced by the richness of its flowers. A magnificent trained specimen at an exhibition, in every respect a perfect exemplification of skill and unwearied attention in culture and manipulation, awakens passing astonishment and, perhaps, admiration, whatever the plant may be ; but the floral pictures that stir the latent love of the beautiful most deeply, and linger longest in the memory, are those in which nature blends with art, and imparts a large measure of her own wild charm to the object that is admired. A rose or a clematis rambling over a fence, tree stump, or wall, sending out vigorous shoots in all directions as though rejoicing in its freedom, following no given course, and restricted to no formal radius, will afford a deeper pleasure to everyone to whom the least grain of taste has been accorded, than any stiff and confined object can possibly do.

The merits of clematises, considered from the amateur's view point, are of no common kind, and provide claims not likely to be ignored. Hardiness is one of the most important of them. The visitor to a large nursery who may see plants trained over trellises in pots, and growing under glass, need not come to the conclusion that because this course is adopted glass protection is a necessity. Clematises are quite hardy, hence they can be planted without any doubts as to subsequent destruction by cold haunting the mind of the grower. They are easily cultivated ; a free and fertile garden soil will suit them admirably, and after planting, the only attention needed is an annual pruning and top-dressing of manure and fresh soil. In suburban gardens they flourish seemingly as well and contentedly as in country districts. They are free-flowering ; this is another great point. Many will have noted the wealth of bloom the plants produce, and their striking beauty when in full flower is not easily to be described. They are useful for a great variety of purposes. Their suitability for covering walls,

fences, arbors, and summer-houses has already been commented on, and, indeed, must have impressed itself forcibly on the minds of most readers of these notes. It has, moreover, been indicated that they are very beautiful when rambling over stumps. A charming effect may be produced by their employment for this purpose, and many a pleasant picture could be provided if a break from the stereotyped methods of garden decoration were boldly decided upon, and carried out with a careful hand and tasteful eye. Clematises are also well adapted for covering sloping banks, and have been effectively employed for bedding, the growths being trained to cover the surface of the soil, and pegged down.

Though *Clematis Jackmani* is beyond doubt the most popular and useful of its family, there are many other species and varieties that are largely grown, and in some the flowers are individually more beautiful. A well-known native species is the Traveller's Joy, *Vitalba*, which produces white flowers in spring, followed by graceful, gauze-like seed vessels, and another white-flowered species — *Montana* — flowering in May, is free and useful. Had these been the only clematises in cultivation, the richly-colored varieties of the present day could not have been evolved, but *Viticella*, a Spanish species, and *Patens*, *Lanuginosa*, and *Florida*, among Japanese kinds, afforded more promising ground-work for the hybridists, and their skilful and patient labors have been attended by splendid results. To name all the beautiful varieties that have been raised would be impossible within the limits of a short article, and possibly it would entail embarrassment for the amateur if he were left to choose amongst them. *Jackmani*, of course, is indispensable; the type is bluish violet, and there are several varieties of



FIG. 419.—A BUNCH OF CLEMATISES.

different color; these flower in autumn, as does the beautiful *Star of India* with its striped flowers. For early blooming, *Patens* (mauve) and *Miss Bateman*

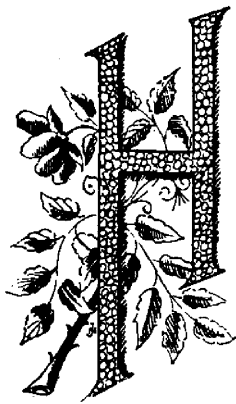
(white) may be chosen, both being extremely attractive; and to afford a succession until Jackmani flowers, select Viticella Major (purplish-red) and Henderson, (purple).

Clematises are grown on a large scale in many nurseries, and they are kept in pots so that intending planters can to a large extent suit their own convenience as to purchasing. Either autumn or spring may be chosen, the chief consideration being the state of the soil. When it is in a friable condition, and the weather is open, the plants may be put in. They should have a good depth of porous, fertile, well-worked soil, with ample drainage; this provided, a great step towards success will have been achieved, and annual top-dressings of rich soil will maintain the plants in vigor after they have become established. The plants must be pruned after planting, cutting in the stems to the best and boldest buds, even if the plants are thereby cut half away. Those of the Jackmani type flower on the summer shoots, and to encourage the production of these the previous year's shoots should be cut in to about two eyes from firm ripe wood in early spring, when the allotted wall space has been filled. With plenty of vigorous young shoots trained in, abundance of large and richly-colored flowers will be produced.—Garden-Work.

The Harris Apricot.—Mr. S. D. Willard, of Geneva, New York, stated at the late meeting of the Ohio Horticultural Society that the Harris is the earliest variety of apricot grown in Western New York, and it ripens fruit about the 15th of July. The tree is of dwarf habit; the fruit is large and of good flavor. Harris and Mont Gammet are good varieties for home use, and St. Ambrosia is good for market purposes. Some trees near Geneva have borne five or six bushels in a single season, which have sold for ten dollars a bushel. The market, however, is limited, although the canneries would probably use all the surplus. New York State apricots, when canned and sold on their merits in the Boston market, brought fifty per cent. more than the same fruit from California. The curculio on the apricot is fought in the same way that it is on the plum, but it can be conquered more easily. When plums are grown near apricots the curculio seems to give its principal attention to the plums.

Yield of Grapes in New York.—A writer in the Grape Belt says: "In the Chautauqua district the average of bearing Concord vineyards is, by the substantial agreement of competent observers, not to exceed 500 9-pound baskets, or two and one-fourth tons per acre. In contrast with this we have the fact that in each town there are growers who produce 1,000 baskets, and in the case of some exceptionally skilled vineyardists a yield has been attained of 1,500 9-pound baskets per acre. Where we seek for the causes of this low average we find them in the poverty of soil of worn out lands, in the imperfect stand of some vineyards, many vines being missing, in the inevitable breakdown of trying to grow weeds and fruit at the same time, and in faulty methods of pruning and the construction of the trellis."

FLORAL DECORATIONS.



ALTHOUGH the enjoyment derivable from our surroundings consists in knowing how to use the things at hand, and to dispose of them to advantage. A room with the same furniture may be elegant or commonplace simply as a result of the disposal thereof, with or without taste. So with the beautiful floral treasures with which nearly every rural home is plentifully supplied, it is not money but taste that is required in order to decorate the rooms and furniture of the house in elegant style. A writer in the *American Florist* gives the following original hints for a plan of floral decorations for a special occasion.

The Jerusalem cherry is a charmingly prim little plant and it might be used to advantage in any spot where the whole of its figure will be seen. It needs a pretty pot and some moss to hide the homely clay pot it grows in. The same applies to the azalea. But in using the latter it ought to be placed where it will be seen by itself. I do not wish to speak in any derogatory terms about anything which seems to me devoid of artistic merit; it is much better to pass what is worthless and draw attention to that which is really beautiful; but I must say that the fashion of massing a lot of plants together is, in the majority of cases, especially in moderately large rooms, decidedly tasteless. The azalea and the Jerusalem cherry tree should be isolated.

Note my arrangement for the corner of a room; instead of banishing the beautiful black silk, gold-embroidered Japanese screen, it might be fastened flat against the wall and thus furnish a splendid background for a specimen of *Deutsche Perle* azalea. The smilax or asparagus can be fastened to the picture moulding and hang gracefully until it touches the edge of the screen.

My suggestion for a mantel pre-supposes the style of this to be Colonial, but the idea can be worked out with a mantel of any style. No material for holiday decorations impresses me with its artistic worth quite so strongly as the long needle pine (*Pinus*



FIG. 420.—CORNER OF A ROOM.

Australis), which is capable of being arranged very beautifully in some prominent point in the decorated room. On the mantel shelf I should place white and yellow carnations and mignonette; in the vase at the right a fine bunch of yellow or white roses would be pretty; and last, but not least, is the effective little lamp, whose dainty light will cast a soft glow over the neighboring flowers. A fairy lamp would also add materially to the beauty of the design.

This removal of things in general from all appearance of the commonplace means that it is better to cut loose from all usual customs in the decoration of a room, and adapt flowers and plants to every condition of furniture and archi-

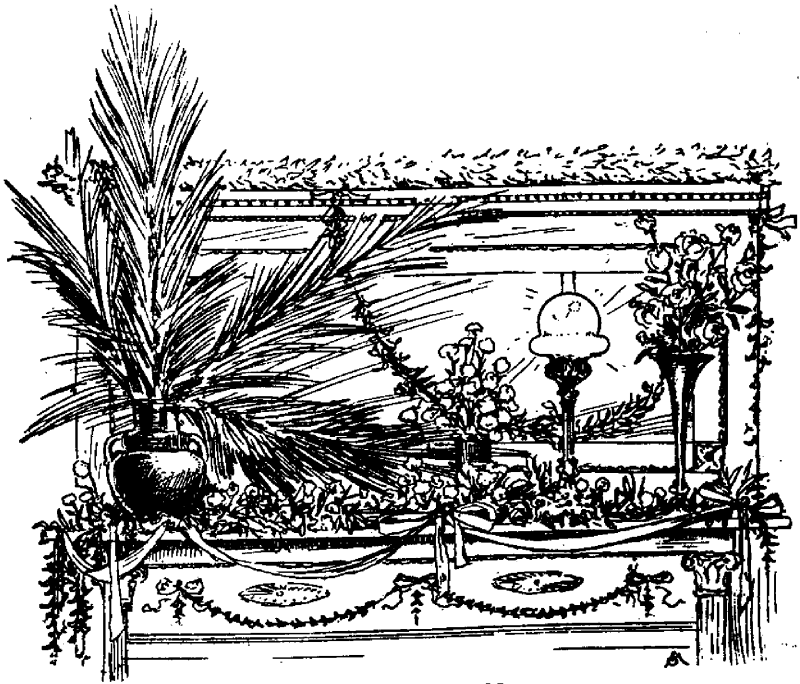


FIG. 421.—A DECORATED MANTEL.

ture; the bookcase, cabinet and china dresser all afford some excellent points for the display of flowers. The top of a bit of furniture which is just below the level of the eye can be covered with greens and a vase placed in the midst, filled with a strong bit of color, or the sweeping lines and effective form of a plant like the palm, or even the poinsettia. Narcissi and cyclamens should never be placed more than a couple of feet above the level of the floor; they are plants which (as they grow naturally) we look down upon, and I see no reason why we should not adhere to natural methods in working out a decorative scheme.



FIG. 422.—TOP OF A CHINA DRESSER.

Whenever flowers are to be accompanied by ribbons these should be very carefully selected, lest the colors interfere with each other. In the little drawing of a hanging silver bowl containing a bunch of Magenta Cattleya the ribbon is supposed to be of a bluer tone than the flowers. Any other color than a dull magenta or a purple magenta does not serve the purpose quite so well. I have seen this fact demonstrated beyond all question, where the ribbon was crimson in hue, and as a consequence the delicate sober color of the flowers was completely spoiled. Such a hanging bowl or basket is a delightfully appropriate accessory to artistically arranged flowers; there are many pretty designs made in silver plated ware of this order, any of which would be an acquisition.—The American Florist.

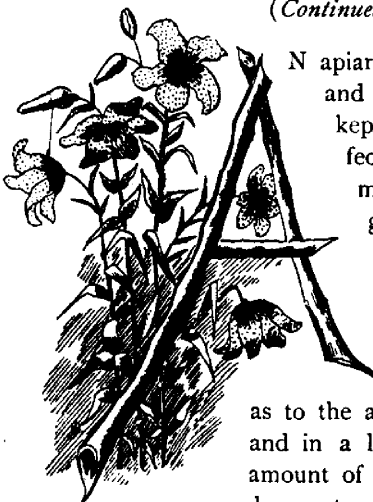


FIG. 423.

* The Apiary *

THE TWENTY-FOURTH ANNUAL MEETING OF THE NORTH AMERICAN BEE-KEEPER'S ASSOCIATION.

(Continued from January Number.)



N apiary should never be run for comb honey alone, and in running for comb honey, the only object kept in view should be the production to perfection of this article. To do this, swarming must take place. From clean parent colonies good comb honey may be secured, but rarely as good as from swarms. When the bees swarm they should be hived on the old stands and either on very narrow strips of foundation about half an inch deep or on full sheets. Localities undoubtedly vary as to the amount of pollen deposited in the combs, and in a locality in which the bees gather an undue amount of pollen, I should say try and make the bee draw out and fasten to frames foundation early in the season, and hive the bees upon these combs. Failing this, use full sheets of

foundation. The object of the sheets or combs is to assist in preventing pollen from being carried in the sections. Localities in which pollen is not troublesome the bees should be hived on starters, and after allowing one complete day to pass after time of hiving, put supers on the hive. I have not much faith in added energy through swarming, but the bees have at the commencement no brood to care for and feed, and they give better results as to surplus. If sections on some old stock are about ready, it is a good plan to give these to swarms to finish. They will make very rapid work in finishing them. Now, as to the combs which will be built from the starters, we know when a young queen is in the hive the bees will be less inclined to build drone comb, but is this condition practicable for a comb honey producer? I think not. The plan of re-queening with young queens before the honey flow is not desirable, from the loss of time resulting from introduction of new queen and taking out of the old one. The truly successful comb honey producer, must be ever on the watch to improve his stock, in this direction, he should know by numbers what supers have been finished by every colony, and when he notices section supers, with well capped comb and free from brace comb and propolis (this latter characteristic should be especially observed), he should note that hive, especially if the amount of honey secured has been large. Next season he should breed from such a queen, and so on, producing from year to year a better strain of bees. I am not saying a word against queen breeders. I am a queen breeder myself, but a comb honey producer should have a strain of bees which, although they may not be the best in the world, yet must be of sufficient value to him to cause him to replace them with extreme caution and only with something tried by himself. To prevent deterioration some new blood must be introduced each season; it is then impractical to have young queens with swarms, and often with such queens there will be an undesirable amount of drone comb. I have within the last two weeks seen the result of an extensive experiment conducted by S. T. Pettit, of Belmont, Ontario, under the following directions:

The swarms were given one or two combs entirely drone, the balance starters, with the hope that the bees would be furnished with worker comb, but they appear to have no power of reasoning and in every instance appear to build as much drone comb as if the first combs had not been given. For extracted honey, I favor full sheets of foundation every time, but for comb honey my arguments for starters, unless in exceptional cases, are these: We are trying to get the most honey out of these bees and we want the best product, if we do not care for much increase, we can shake the bees from these combs after the season is over and destroy them. If we wish to winter them we can put them on good combs and feed them on sugar syrup for winter stores. The combs built by the bees can be patched up to the best advantage, the old hive placed directly behind. The old stand can be treated thus: shake almost six days after swarming a good many bees from the comb adding them to the new

swarms in front, and either utilize the comb in another place, or put the hives on new stands and let it build up for winter. I am never troubled with second swarms. The location of an apiary has much to do with swarming. In places where the air can freely circulate the amount of swarming will be reduced, the nature of the soil even will have an influence. I like the apiary on sod and the hives to be placed under the outer edges of the shade trees. I never give in the production of comb honey any upward ventilation, and herein lies an important secret, towards securing white and clean sections. The bees resent such a current of air, and when given begin to apopelize, and soiled sections are a result. A quilt should not be used unless a heavy cushion and a heavy lid be placed above to prevent the bees from pushing the quilt off. I like a honey board and a quarter inch bee space above the combs. Shade boards are used on top and even sides of hives. They are a great advantage. It is unnecessary to say that no one can engage in the successful production of comb honey with one super only, and yet, there are many who think such a practical economy. Before the advent of the bee escape I drove bees out of the comb honey supers by spreading over them a cloth dipped in a weak solution of carbolic acid, the cloth being wrung almost dry before spreading. This works very well, but the bee escape still better. My system is to produce a certain amount of comb honey. This prevents cull sections, except in very exceptional seasons. Only a choice article should be aimed at, even if we never exhibit, for by so doing we place ourselves to a certain extent out of reach of competition. We command higher prices and a ready sale.

A lengthy discussion followed, some favoring starters, others not. Mr. Taylor, who is conducting a Government Experimental Apiary, stated his work for the past season had been against using starters only for foundation, but of course no conclusion could be arrived at until repeated tests had been made. It was shown that the length of the honey flow made a marked difference.

A discussion took place on "Fixed Spacing and the Prevention of Brace Burr Combs."

This subject is attracting a good deal of attention, and the general opinion appears to be, that by means of quarter inch bee spaces and thick top bars very much superfluous comb could be avoided. The question of a honey board or queen excluder was brought forward; it was generally admitted that for comb honey no queen excluder was necessary. Not many years ago, such a contrivance was considered an absolute necessity.

Samuel Simmins, Seaford, England, submitted a paper upon "Swarming and the Prevention of Swarming."

Mr. Simmins advocated the taking out of combs from the brood chamber and giving the bees room to build comb, extracting freely, young queens, artificial swarming. All of these methods have been tried by bee-keepers in America and every one of these methods are not considered desirable.



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 are at our risk. Receipts will be acknowledged upon the address label.

Notes and Comments.

GYPSY GIRL AND PRINCESS LOUISE apple trees are reported hardy, thus far, by A. S. Crosby, Compton, Que.

PEACH LEAF CURL.—Prof. Craig writes that his remarks at Peterboro', concerning peach leaf curl, have reference to the result of some experiments in Australia, for the treatment of peach curl with Bordeaux mixture, by which the peach curl was entirely prevented. The results were reported to Mr. Craig through an Australian gentleman, who stated that of all the experiments he had tried in spraying, none were more satisfactory than those he had obtained in the treatment of this disease by applying Bordeaux mixture before the leaves open and afterwards at intervals of ten days for three successive applications. The result was entire immunity from disease.

WRAPPING CHOICE SAMPLES OF FRUIT is a troublesome piece of work, but there are cases in which it pays the grower to take such trouble; and that is with extra fine samples and where the shipper deals continuously in certain markets, and aims to build up a reputation for his goods. A lesson may be learned from the orange shippers, who wrap their fruit in printed tissue paper, on which are stamped the name and place of the grower and his name. Such fruit sells for a price quite above the ordinary. How much we have yet to learn in order to handle our fruit in the very best manner! And this is the part that pays best, for every cent of advance received for our fruit, above a certain sum, is all profit.

RUSSIANS OR NATIVES.—At a recent meeting of the Iowa Horticultural Society, an interesting paper was read by Mr. C. L. Watrous, of Des Moines, in

which he reviewed the lessons which we, as horticulturists, have had so clearly placed before us by the various exhibits of fruit at the World's Fair. He showed that in almost every instance, fruits which were natives of any section of country, were those best adapted to that district, and that, as a rule, exotics which had been bred under different conditions of climate and soil, were not a success. This he applied to the experiments which are being conducted in the introduction of Russian fruits.

In our opinion, there is a great deal of truth in the views expressed by Mr. Watrous. While we may find an occasional variety among the Russians which will succeed in Canada, and be of value to us, there is no doubt at all that the varieties, which are to be most successful in our northern section, will result from experimental work in raising seedlings of native varieties and hybridizing them with kinds already known.

BORDEAUX MIXTURE FOR THE MILDEW OF THE GRAPE.—On our fruit farm at Maplehurst we have a vineyard of about twelve hundred vines, and during the last five years the vineyard has been more or less affected with powdery mildew; the Salem has been affected more than any other variety; Brighton has been considerably injured; Wilder and Concord also to some extent. Each year we have applied flower of sulphur, scattering it freely through the vineyard upon the leaves and upon the ground. The result has been fairly satisfactory, but has not given entire immunity. During the past season Bordeaux mixture has been carefully applied to the whole vineyard, first before the leaves opened and afterwards two application at intervals of about a fortnight each. The result has been completely successful, scarcely a trace of the powdery mildew, or of brown rot, being observable. The latter in other seasons was very destructive to the Salem. At the same time, a young vineyard left unsprayed, showed indications of the presence of these diseases.



➤ Question Drawer. ◀

Bearing Capabilities of Certain Apples.

598. SIR,—Compared with such regular bearers as the Greening, what are the bearing capabilities of the Peewaukee, Walbridge, Sutton Beauty, Grimes' Golden, American Golden Russet, King and Ontario, when grown under favorable conditions? I ask this because I see myself that the Spitzenburg, which does well here, only bears one-third the weight of apples which the Winesap does, and, though better in quality, brings no more in the market.

J. L. WEBSTER, *Vernon, B.C.*

The varieties named by our correspondent are none of them heavy bearers ; indeed, the King is proverbial for being a scant cropper. The American Golden Russet produces a fair crop, but when fully loaded does, not yield one half as many barrels as the Greening. However, the fact that an apple tree is a light bearer does not condemn it. The King apple brings twice the price in the British market that the Greening does and, therefore, is more profitable, even if it yields less than one-half the quantity of fruit ; and the same remarks will apply to the other varieties.

The following is the experience of other growers with these varieties :—

Prof. John Craig, of Ottawa, writes :—“I have found that on rather poor and gravelly soil *Peewaukee* does not bear heavily. Twenty trees of this variety, at Abbotsford, P. Q., now 18 years old, have not borne as much fruit as half that number of *Wealthy* growing alongside. *Wallbridge*, except on sandy soil, in my experience, has proved a very light bearer, and the fruit quite too small to compete with such apples as *Peewaukee* and *Ontario*. *McIntosh Red* does not bear as heavily as the *Fameuse*, but usually with satisfactory regularity. *American Golden Russett* has not proved as reliable in Eastern Ontario and the Province of Quebec as the English *Golden Russett*, which, after it has attained some size, say : in eight or ten years after planting, bears moderate and regular crops annually.

The fact that the Ontario apple is given to bearing young and very heavily was brought out at the Ontario Fruit Growers' Association, and on this account was likely to be a short-lived tree, unless cultivated highly.

I know of no instance where *King*, although a very desirable apple in many respects, can be called a profitable variety when grown on its own stock. While everywhere a favorite yet, it bears so lightly and is so uncertain, that returns are usually unsatisfactory.”

Mr. Nicol, of Cataraqui, writes :—I would state that the *Peewaukee* was introduced to this district only fifteen years ago. Hence, there are no large bearing trees of it hereabout, but from what I know of it, I am led to believe it is one of the most suitable kinds for this part of our country. The tree is hardy as the *Duchess*, bears early, fairly good crops of fruit, of good size, good quality, and which keep well ; valuable for shipping.

Wallbridge—The tree is a hardy and vigorous grower, but the fruit is so uneven in size, that only a small proportion of it is marketable; it is unattractive and does not sell well.

Sutton Beauty—I have had no experience with it.

Grimes' Golden is not a great bearer here, but the fine quality and lovely appearance of the fruit entitles it to a good place in any orchard.

McIntosh Red is not a *great* bearer, but fruit is more attractive than any kind that I know of; no apple sells so readily in Montreal, or brings so high a price. It does not scab so much as the *Fameuse*, of which it, doubtless, is a seeding; as a desert apple it takes foremost place.

Golden Russet is a vigorous grower, does not early begin to bear large crops, but when the tree get age, it yields abundantly. At Mr. Allen's place at Alwington, I saw nine and a half barrels of good salable apples gathered from one tree. It is the only apple which one can rely upon keeping in good condition until middle of summer. Although of first rate quality it does not bring the highest price in the British market, because its color is not so attractive as some other kinds.

King is not hardier than the *Baldwin* or the *R. I. Greening*, therefore not much grown here. Twenty miles west of here, near the lake shore, it does very well, and in *Prince Edward County* is generally considered to be one of the most profitable kinds; although it does not yield such heavy crops as the *Baldwin*, it is a more regular bearer, and the fruit sells at higher prices.

The Ontario is not extensively grown hereabout yet—it seems to be on probation; but from what I have seen, I have formed a good opinion of it. It is an abundant bearer, and the fruit is of nearly equal size; although not of the very best quality, it is superior to the *Baldwin*. The tree being hardy, is well suited for *Eastern Ontario*, and I have no doubt this apple will become more popular when it is better known.

Mr. Beall, of *Lindsay*, writes: The *Baldwin* and *Greening* are but little grown here, therefore cannot speak with certainty. The *Pewaukee* does well in this locality. The tree bears a good crop of large and beautifully-colored apples every year. *Wallbridge* and *Sutton Beauty* but little known here. *Grimes' Golden* gives excellent crops. Every grower should grow sufficient for family use, but its color and size is against its market value. *McIntosh Red* cannot be grown to advantage. *American Golden Russet* gives good crops. *King*, a very shy bearer. *Ontario* bears all any tree of its size should bear, and bids fair to become at an early day, one of the most popular apple grown in the province.

Plum Rot and Pear Scab.

599. SIR,—How shall I treat my plum and pear trees, in order to destroy the plum rot and pear scab? I lose a great deal of my fruit by these diseases.

A. W. BIGHAM, *Islington*.

The best remedy for plum rot and pear scab that is known is to apply *Bordeaux mixture* in the form of a spray. The first application should be made

before the leaves appear, and two others at intervals of two or three weeks during the early part of the season. Full directions will appear in this journal at the proper season.

From reports of the experience of those who have tried this remedy, which have appeared in these pages and in our reports, it would appear that some few have failed, but so many of us have had such evident success in lessening, if not entirely destroying, these fungi, that we have no hesitation to highly commending it to our correspondent.

Excrescences on Grape Vines.

600. SIR.—I send you a section of a diseased grape vine, on which is a seedling somewhat resembling the plum knot. Three years ago this appeared on one of my grape vines.
T. NEELAND, *Port Hope.*

This disease is not serious. It has long been known in France as Broussins, meaning excrescences. They are the result of the action of the frost, and appear on the roots, first as little nodules, which are soft and spongy, but which become firm and hard and dry. On the branches they appear as masses of irregular excrescences, composed of a large number of shapeless nodules, and the wood thus covered is often enlarged four or five times its natural diameter. The bark is torn, and often stretched over irregular groups of these nodules. A full description of this appeared in Vol. 13, page 247.

Making an Asparagus Plantation.

601. SIR.—Is there any profit in growing asparagus, either in the garden or in the field? How should it be planted, and after planting can it be cultivated with the plough? What treatment should it receive afterwards, and when is the best season to make the plantation?
H. BRAUDRY, *Montreal, Que.*

Of all the crops for the market garden, especially if conveniently situated to a large city, asparagus is one of the most satisfactory, because it is easy to cultivate, easy to gather and easy to sell. The land should be heavily manured and worked up to a depth of at least ten inches. Trenches are then opened up to a depth of nine inches with a plough. The plants should be set about three feet apart in these trenches, and enough earth packed about the roots to cover them well, and the harrow will complete the job, throwing in a little additional earth upon them, as it is drawn lengthwise over the rows. This work may be done in the fall or spring. At the end of the season the trenches will be partially covered in and during the next year may be all cultivated level, leaving the roots eight or nine inches below the surface of the ground. Every spring the whole surface should receive thorough cultivation with the plough and harrow, and be well manured. Mr. Garfield, of Michigan, who has had eminent success in growing asparagus, states that he applies stable manure and refuse salt alternate years, the former at the rate of thirty-two tons per acre.

Ploughing or Mulching an Apple Orchard.

602. SIR,—I have a small orchard, ten years planted, which has been seeded for three years with clover and timothy. The trees are rather close together to allow of breaking up the ground easily. I have put on a heavy dressing of manure; and would like to know whether you would advise me to plough it under, or simply give it a good harrowing.

J. D. OLIVER, *Bobcaygeon.*

Where practicable, there is no doubt that the best treatment any apple orchard can receive is frequent cultivation with both plough and harrow, because in this way, not only is the manure better mixed with the soil, but the fertilizing elements already in the soil are rendered more available by the roots of the trees. Besides this, many soils become too closely packed for the beneficial action of the air to be exerted upon, unless occasionally worked up.

However, in the case before us, it is quite possible that in a small orchard a sufficient quantity of manure could be applied to mulch the surface and keep it moist. The test will be in the growth of young wood at the tips of the limbs. So long as there is an annual growth of a foot or so, the orchard is in sufficient vigor, and needs nothing in the way of fertilization, or cultivation.

Small Fruits, Cultivated or Wild.

603. SIR,—Would you advise me to grow small fruits? I am situated in a section where there is any quantity of wild fruits, with a small town on each side, and no opposition. I am a beekeeper, and am fond of fruit growing.

J. D. OLIVER, *Bobcaygeon.*

Cultivated fruits are usually so much superior to wild, at least in size and appearance, that there is always a demand for the former at higher prices. No doubt that our subscriber would find it a material help to his income, were he to plant a half-acre of strawberry plants; a half-acre of red and black raspberries; a half-acre of blackberries; a half-acre of currants and gooseberries, more or less, according to the size of the towns which will be his markets.

What is a Shrub?

604. SIR,—What is a flowering shrub? Are Clematis Jackmanni, and Aristolochia Siphon, shrubs?

A SUBSCRIBER.

A shrub is a woody plant of less size than a tree, usually with several stems. If the extreme height of a plant exceeds twenty feet, for example, it would be called a tree and not a plant. The stems of Clematis Jackmanni are sufficiently woody to class it among the shrubs, and so are those of Aristolochia Siphon.

Spraying.

605. SIR,—What is the best solution to spray with before leaves open?

G., *St. Thomas.*

Probably there is nothing better than sulphate of copper, one pound to twenty-five gallons of water.

Hardy Peaches.

606. SIR,—What are considered the three hardiest peaches? G., *St. Thomas.*

Perhaps Crosby, Hales' Early, and Hynes' Surprise. The Elberta and Hill's Chili are also classed among the hardier kinds.

Grapes for St. Marys.

607. SIR,—Please give me a list of varieties of grapes suitable for this section.

J. BONIS, *St. Marys.*

Some good varieties are, Black—Moore's Early, Worden and Concord; Red—Lindley, Delaware and Brighton; White—Lady, Niagara and Diamond.

Age of Grape Vines.

608. SIR,—Is it better to plant grape vines three years old, or younger?

J. B., *St. Marys.*

Two years old is a suitable age for vines to be planted. If older, they lose too many fine fibres in removal, and are much stunted. We would prefer one year old vines to three year old ones.

Soil for Grape Vines.

609. SIR,—I have two fields, with limestone gravel bottoms; but in one the gravel is near the surface. In which would it be best to plant?

J. B., *St. Marys.*

We would prefer the deeper soil, with the gravel not too near the surface.

Ginseng.

610. SIR,—I wish to obtain seeds or plants of ginseng, suitable for planting. Could you refer me to any party who would be able to supply them?

ORIGEN MARTIN, *Webster's Corners, B.C.*

It is found in the Niagara district. Who will furnish plants to Mr. Martin?



PARLIAMENT BUILDINGS, OTTAWA.