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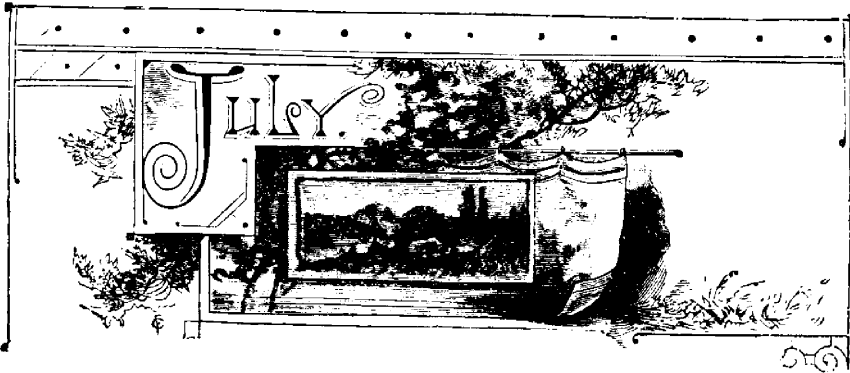
PURPLE BERBERRY.
(*Berberis Purpurea.*)

THE
Canadian Horticulturist

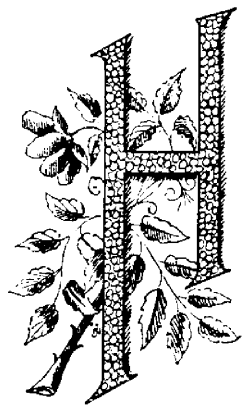
Vol. XIX.

1896.

No. 7.



THE BARBERRY.



EDGES, such as form the pretty boundary of country lanes in England, are few enough in Canada. Our Canadian farmers have as yet been so busy with the necessities that the ornamental has been neglected. But the time is at hand for an improvement in this regard; when our country roads will no longer be margined by the ugly snake fence, or even by stiff boards or pickets, but by a graceful border of living green.

Though perhaps not forming so effective a hedge as the thorn for turning cattle, the barberry succeeds better in Canada, and will grow on stony or sandy land where many shrubs would fail. It is quite ornamental too with its racemes of flowers in spring, and scarlet berries in autumn which hang the winter through, reminding us of Longfellow's couplet in *Hiawatha*,

“Where the tangled barberry bushes
Hang their tufts of crimson berries.”

There are a good many varieties of this shrub, about thirty being described by Nicolson in his *Dictionary of Gardening*. The *Common Barberry*, (*Berberis vulgaris*) which is a native of Britain, is a free grower and forms an excellent hedge. There are a good many variations in coloring of fruit and foliage which when constant are indicated by distinct names. The one which forms the frontispiece of this number is called *B. vulgaris purpurea* because of the purple color of the foliage, which makes it a highly ornamental shrub. On poor sandy

soil, well exposed to the sun, this coloring is heightened still more. *Berberis Thunbergii* is a variety introduced from Japan by the botanist Thunberg. It forms a dense graceful bush about three feet high and of rounded form. It is a most pleasing ornamental shrub with its bright red bark, its fruit which hangs throughout the winter, and its beautiful foliage in summer.

SOME DESTRUCTIVE INSECTS.



THE above is the title of Bulletin 68 of The Ohio Experiment Station, in which some destructive insects are well treated of.

The Canker Worm, one of them, is a very old one in Canadian orchards, which for some years past has been stripping some apple orchards east of Hamilton, to such an extent as to leave not a vestige of foliage. Mr. Orr, who is superintendent of spraying operations in Ontario, says this insect is wide spread and very destructive.

For the benefit of any readers who have never become acquainted with this insect we give the accompanying illustration, showing (a) a cluster of eggs, (b) some of same magnified; these hatch out as the leaves expand in the spring, into the well known measuring worm (c) which when disturbed drops quickly and hangs by a thread. If a tree is badly infested a smart knock will bring down hundreds, hanging by as many threads, ready to crawl back and continue their work of destruction. When full-grown the worm drops by the thread to

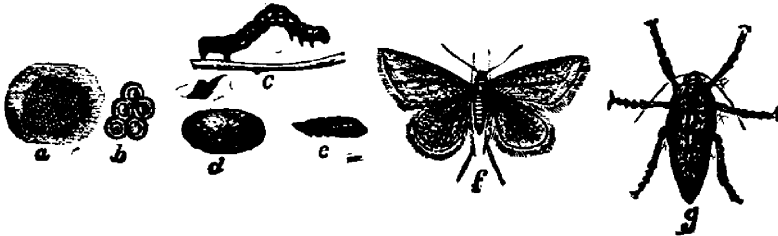


FIG. 966.—THE CANKER WORM.

the ground, and burying itself three or four inches below the surface forms a tough, buff colored cocoon (d) within which the chrysalis lies hidden till spring. Emerging with the first warm weather, the female moth (g) which is wingless, climbs the trunk of the nearest apple tree, awaits the company of the male (f) which is winged, and then proceeds to lay the eggs as first described.

Formerly the wingless female suggested the simple method of protecting the tree by bands of some sticky substance as practiced most faithfully by the writer about twenty years ago, when his orchard was attacked by this worm in great numbers. But since adopting the spraying with Paris green, no other means of

defence is needed. We simply poison the leaves, and then permit the canker worm to eat a daily dose.

The Strawberry Sawfly is another of the insects described and may easily be identified from the accompanying illustration, though more commonly known in the larval state, coiled up as shown at 6. This insect is also known as the strawberry slug, though it really is closely allied to the currant worm. The parent fly (3) deposits its eggs within the tissues of the leaves or stems, and the larvæ hatch out and begin feeding, and soon grow to be about $\frac{3}{4}$ of an inch long (4 and 6). After five or six weeks in this state they go beneath the surface of the ground and form cocoons (7) and change into pupæ (1 and 2) which at length become flies.

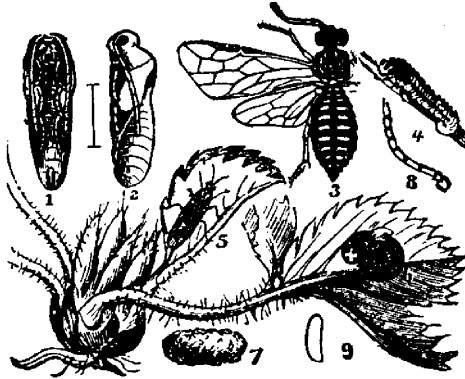


FIG. 967.—THE STRAWBERRY SAWFLY.

Spraying with Paris green may be used as a remedy where there is no fruit to be harvested; otherwise insect powder may be used.

CURRENTS.



CURRENTS are a delicious acid fruit, extensively used in cooking and the making of jellies and jams. To fruit growers of long ago, only two varieties were known, the black and the white; but a large number of species are now cultivated and brought to our markets.

For breakfast, a bowl of white and red currants on the stems, served with powdered sugar, form an appetizing and wholesome dish; stewed and sweetened, they are a delicious sauce to be eaten with meats; while made into tarts and pies, they are dainty and acceptable for the summer luncheon and dinner table.

Where a variety is desired for the table, currant compote, cream, sponge, water-ice and float may be made.

Of all fruits, currants are preferable for jelly, in making which less sugar is required than for any other fruit, always with the certainty of success. Currant jelly likewise has the merit of being suitable alike for serving with meats, flavoring sauces and using for making cakes and preparing various desserts.

Currants make a delicious jam, and may be canned green or ripe for winter use. Syrup made from them is not only a delicate flavoring for creams, ices,

sauces, custards and blanc manges, but also a beautiful coloring for fancy deserts. Wine made from currants is much esteemed in England, and is found in every household. It is said to possess great virtue in restoring the tone to a delicate stomach. Currant shrub is a refreshing summer drink, and currant cordial is so beautiful to look at, that the labor of making it would be more than repaid if it laid claim to no other quality; but it is quite as good in taste as it is in appearance.

The black currant, preserved or made into jelly or wine, is of value in the treatment of many ailments, such as sore throat, severe colds and general debility.

Altogether, the currant is a very desirable fruit for use in the household.—
E. P. R.

RIPE ROT OF PLUMS.



HIS disease has been very prevalent in the Niagara district, especially in wet seasons, often resulting in the loss of a large portion of the crop. The same fungus also attacks the peach, and is very destructive of the ripening fruit of such varieties as Hales and Alexander. Mr. Beach, of Geneva, in Bulletin 98, shows that this rot may largely be reduced by Bordeaux mixture.

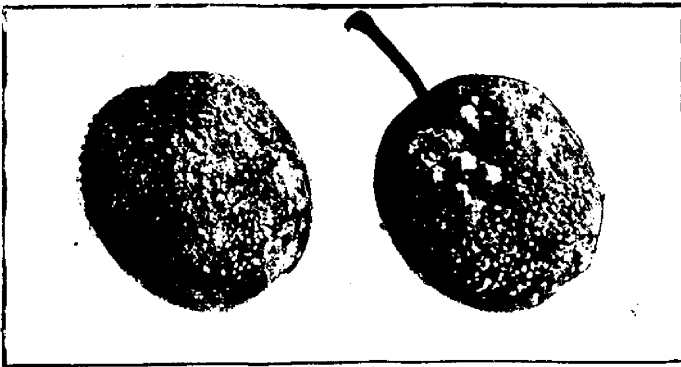


FIG. 968.—RIPE-ROT OF PLUMS (BEACH BULLETIN 98.)

The following course of treatment is recommended in this bulletin:

1. In case there is reason to fear an attack of the fruit rot fungus on the blossoms, spray thoroughly with Bordeaux mixture before the blossoms open.
2. When no attack of the fruit rot fungus in the blossoms is feared, let the first spraying be made soon after the blossoms fall. If Paris green is to be used against the curculio it may be mixed with the Bordeaux mixture at this time, using one pound to two hundred and fifty to three hundred gallons of the

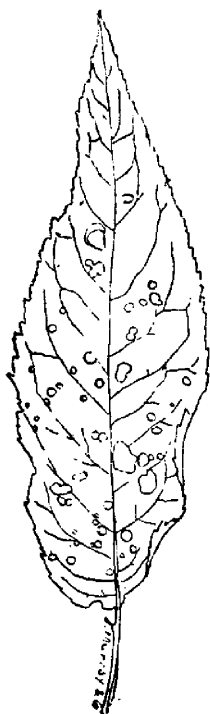


FIG. 969.—SHOT-HOLE FUNGUS.

mixture. The second treatment should be made about June 1st, and the third about June 15th. Should this treatment be insufficient to hold the disease in check, a fourth spraying may be made about July 15th.

In conclusion, it should be said that thoroughness in spraying is essential to success. It is not necessary to drench the trees but the aim should be to completely cover every leaf with fine mist-like particles of the spray. To do this it is necessary to have a powerful pump and good nozzle.

The Plum Leaf Spot, or shot-hole fungus has been successfully dealt with at the New York Experiment Station by use of Bordeaux mixture applied three times, viz.: May 17th, June 1st and June 15th. Only ten per cent. of injury was apparent in the case of the treated trees, while 78 per cent. was observable on those untreated.

This fungus makes its appearance soon after the first leaves are full grown, first by little discolored spots, about $\frac{1}{8}$ of an inch in diameter, with margins tinged with purple or red. These spots gradually become $\frac{1}{8}$ of an inch in diameter, and sometimes coalesce. The tissues wither, and frequently break away from the healthy portions surrounding them, leaving the circular holes represented in Fig. 969.

SCORE CARDS FOR JUDGES.

OUR readers will remember that Score Cards were prepared by the Ontario Fruit Growers Association for the use of Judges at exhibitions, and described in the report for 1894. At the Industrial last year these Cards were tried and found to serve an excellent purpose, because it necessitated judging by points instead of the hasty jumping at decisions so commonly practised. Of course Judges who attempt such careful work are entitled to higher compensation than when using the old method, and where one Judge is made responsible in place of three, that one should receive the fees formerly allowed the three Judges.

In order to make the cards a little simpler, we have reduced the several score cards for dessert, cooking and general purpose apples, to one; simply by giving at the head the points belonging to each division, thus:—

Score Card for Collections of Apples and Pears

Ten Points as follows:

For Cooking:—Form 1; Size 3; Color 1; Uniformity 2; Clearness 3.

For Dessert:—Form 2; Size 1; Color 2; Clearness 3; Uniformity 2.

General Collection:—Form 1; Size 2; Color 2; Clearness 3; Uniformity 2.

Variety.	Value of Sample.	Catalogue Value of Variety.	Total Points.

N.B.—To sum up total of points add maximum of five times the number of varieties for covering the season.

From the scale of points given, it is easy to score up the value of the sample plate of each variety shown in a collection. The Catalogue value of a variety may be had from the table in the report of the Fruit Growers' Association; adding together the value of the sample and the catalogue value of the variety we have the total number of points for each variety. These added will give the total value of the collection.

Since it is important that a collection should cover the season in period of maturity and use, a certain maximum number of points is added to the total for this, say equal to five times the number of varieties.

For single plates the cards are of little or no service.

For collections of grapes a similar score card is used, as follows :—

Score Card for Collection of Grapes.

Ten Points, as follows:—Flavor, 3; Form of Bunch, 1; Size of Bunch, $1\frac{1}{2}$; Size of Berry, $1\frac{1}{2}$; Color, 1; Firmness, $\frac{1}{2}$; Bloom, $\frac{1}{2}$; Freedom of Blemish, 1.

Variety.	Value of Sample.	Catalogue Value of Variety.	Total Points.

N.B.—To sum up total of points add maximum of five times the number of varieties for covering the season.

Officers of fairs so desiring may print and use copies of these cards, or correspond with the Secretary of the Fruit Growers' Association for cards already printed.



FIG. 970.—BRANCH OF EARLY PURPLE CHERRIES.

THE EARLY PURPLE.



THE earliest dessert cherry is the Early Purple, a foreign variety known in France as the Early Purple Guigne. The tree is a vigorous upright grower, not subject to black knot, and it becomes quite productive as the tree acquires age. A tree about thirty years planted at Grimsby yielded, in 1886, 144 quarts; they were harvested on the 11th of June, and sold in the wholesale market at an average of 12 cents per qt. This is the tree's best record, for usually the birds destroy the fruit before it matures, and if gathered as soon as colored red it is little more than "skin and bones." The last few days of growth it fills out wonderfully, and becomes almost a so called "black cherry." The variety is quite hardy south of Lake Ontario, and is worthy of trial farther north.

The branch which we have photographed for the illustration was taken from the tree above referred to, and shows the habit of fruiting, as well as the cherries in natural size.

Tree.—Upright, vigorous, healthy, productive when full grown.

Fruit.—Medium size, roundish heartshaped; skin dark red to purple; stem two inches long in a shallow cavity; suture obscure.

Flesh.—Color, red to purple; texture tender, juicy; flavor sweet and pleasant.

Season.—June 10th to 15th.

Adaptation.—Grown at Grimsby for thirty years and quite hardy; fairly hardy in Maine and Michigan.

Pleasure Grounds.—Grass lawns that have become browned by the recent dry weather should not be mown very closely. Raise the knives in the machine well up, and remove the grass-box, so that the cut grass may remain as it is scattered about by the machine; it will then assist in keeping the lawn green. If the lawn has not been mown for some time owing to the drought, it will be well to mow it lightly over with a sharp scythe before the lawn mower is used on it again. Grass-edgings should be kept tidy by clipping with the edging shears, and narrow verges of grass in dry situations require to be well watered during dry weather.—Gardeners' Chronicle.

A little girl in Aberdeen brought a basket of strawberries to the minister very early on Monday morning. "Thank you, my little girl," he said; "they are beautiful. But I hope you didn't gather them yesterday, which was the Sabbath day?"

"No, sir," replied the child, "I pulled them this morning. But they was growin' all day yesterday."

TENDER FRUITS IN ENGLAND.



PEACHES and nectarines grown in England, if of good quality, find a ready sale, and suffer nothing from the competition of foreign supplies, which are either of inferior sorts, unripe, or too much damaged to find much favor. Expert growers of these fruits contrive to maintain a supply from April to November by cultivating a variety of sorts under different temperatures. Mr. Munro says there were often a thousand boxes of English-grown peaches and nectarines disposed of daily last year in Covent Garden. I have tasted here peaches from California which compared favorably with the English grown fruit.

Grapes are in greater demand than ever. Enormous quantities are imported from the Cape, Spain, etc., yet cultivators in this country find this fruit a profitable investment, the acreage of glass devoted to it being largely increased every year. I am told that good grapes grown under glass in England pay at one shilling per pound. The varieties cultivated are chiefly Alicante, Black Hamburg and Gros Colman. About one thousand tons of English-grown grapes are now annually marketed in this country, and nearly twice that quantity are received from the Channel Islands, where grape culture has become a staple industry. Even Belgium sends forced grapes to the English market, about two hundred tons being received from that country last year, a prohibitive duty practically closing the Paris market to them.

Cucumbers at one time were largely imported from the Continent, but now English growers supply the Continental markets as well as their own. Mr. Munro estimates the supply of this fruit from March to the end of July at about fifty thousand per day.

The increase in the consumption of tomatoes in England within the last ten years has been phenomenal. They are a certain source of profit to the beginner with limited capital, being easily grown and marketed and readily sold. The quantity of house-grown fruit that passed through Covent Garden market alone from March to November is estimated at two thousand tons, and this is probably only a tithe of what is marketed throughout the country. I know a market grower in the provinces who cannot sell apples and pears at any price, while his tomatoes offered direct to the same consumers sold readily at sixpence per pound, the price asked for six pounds of apples. My friend proposes to leave the supply of apples and pears to the foreigners, and to devote himself entirely to tomatoes and cucumbers.—W. WATSON, *Garden and Forest*.

ABOUT CURRANTS.



THE marked development in recent years of the interest in currants as a market fruit has naturally been accompanied by the introduction of many new varieties and some old varieties under new names. The newer candidates for favor include the Eclipse, North Star, Red Cross and Wilder of the red kinds, and Marvin's Seedling, Caywood's Seedling and White Versailles of the white kinds, and several other sorts. None of these have been fruited here long enough to determine their productiveness.

North Star, introduced from Minnesota, makes a vigorous upright or somewhat spreading growth. The color of the fruit is much like that of the Red Dutch; bunches medium length; fruit probably large under good cultivation, but varying from small to large. Red Cross, from seed of Cherry fertilized by White Grape, was originated by the originator of Brighton Grape. The fruit is medium to very large, milder flavored and lighter in color and somewhat later in season than Cherry. Habit of bush, upright, vigorous. Eclipse is a good grower and bears bunches from two and a-half to three inches long. The fruit varies from small to large; color good, somewhat lighter than that of Fay; flavor comparatively mild. Wilder, from seed of Versailles, originated about eighteen years ago with Mr. E. Y. Teas, Irvington, Indiana. It is a good grower, bearing fruit medium to very large, less uniform in size than Fay, and somewhat lighter in color. It appears to be worthy of extended trial as a late kind.

Among the red currants that have been in full bearing at this station during the last three years, Cherry has been one of the most desirable of the large-fruited kinds. Fay yields longer bunches and more uniformly large fruit than Cherry, but it does not make as satisfactory a bush, nor has it been as productive in this locality as the Cherry. Neither of these kinds will remain on the bushes in good condition for shipping as late as will Victoria, Prince Albert or Wilder. On account of its thin skin and abundance of fine-flavored juice, Cherry is liked at fruit-preserving establishments for making into jam, but it is necessary to evaporate away more of its juice in making jelly than it is with some other varieties. Fay and Prince Albert are especially liked for making into jelly, because of their large size, thin skin and rich pulp.

Prince Albert is a vigorous grower, more upright even than Red Dutch. When well grown the fruit will pass for large. Of all the varieties in full bearing here during the last three years it has given the highest average yield, and London Red, also known as Short-bunched Red, has taken second place. The London Red, like Cherry, has short clusters, with stem so short as to make it difficult to pick. The fruit varies from medium to large and is similar to Red Dutch in color and quality. One of the most valuable of the kinds that produce

medium-sized fruit is Victoria, also known in Canada as Ruby Castle or Raby Castle. The bush is a very strong grower, upright and very productive. The cluster of well-formed buds at the end of the shoot, the bluish gray color of the buds and the rather pale green foliage are quite characteristic of this variety. The clusters are of good medium length. The fruit is late in coloring, has a bright red color, and will keep on the bushes in good condition later than either Cherry or Red Dutch.

The market demand for white currants is quite limited, and the number of new white varieties is not so great as the number of newly-introduced red sorts. White Grape and White Dutch still remain the standard sorts. White Imperial has not yet fruited here. Caywood Seedling is a very productive white kind, with spreading or drooping branches. The fruit is large, attractive and of good quality. Marvin's Seedling is similar in color to White Grape, larger in size and rather more acid. White Versaillaise has long, well-formed clusters slightly darker in color than White Grape; berries larger, less juicy and about the same in acidity as White Grape.—W. P., in Garden and Forest.

COMPOSITION AND ACTION OF WOOD ASHES.

“Leached and unleached Canada ashes have approximately the following percentage composition :

	Unleached Ashes.	Leached Ashes.
Sand, earth and charcoal	13.0	13.0
Moisture	12.0	30.0
Carbonate, with some hydrate of lime	61.0	51.0
Potash [chiefly as carbonate]	5.5	1.1
Phosphoric acid	1.9	1.4
Other matters by difference	6.6	3.5
	<hr/> 100.0	<hr/> 100.0

“It appears from this statement that more than half the weight of both leached and unleached ashes consists of lime, partly as hydrate, but chiefly as carbonate; the same material chemically as chalk or limestone, but finer, and so likely to be quicker in its action.

“It has long been known that chalk or limestone may benefit both very heavy and very light lands, making the one looser in texture and less apt to puddle, and the other closer and more compact. It does this in the one case by separating the particles of sticky clay, and in the other by filling up the interspaces of a coarse soil. A writer on agriculture in the early part of the last century says of chalk: ‘it causes great fertility, especially on such lands as are apt to lose the riches of dungs laid on them, and to forget in a little time

that they have had any kind and indulgent benefactor. Here chalk is of excellent use to drive away such ingratitude, having a retentive quality to enclose and stay the salts.'

"It needs to be borne in mind that potash or soda lye binds a clay soil, making it heavier, more tenacious and cloddy than before, and it may be that on this account a heavy application of *unleached* ashes to a clay soil would either not help it at all or even damage it, while on light soils unleached ashes would be more beneficial than leached ashes. This favorable action on light soils has made ashes popular in this State, where our soil is for the most part light and sandy. They 'keep the soil moist' as the saying is, that is by filling up the pores and compacting it, the soil water is made to rise more readily in it from the subsoil, bringing plant food with it and preventing drought.

"Besides this action of ashes which is in large part at least mechanical, they also tend to correct 'sourness' of the soil. In most cases this is not due to free acid, but to the presence of soluble iron salts, which in undue quantity are poisonous to plants, and in smaller quantity show that the soil is stagnant, and needs aeration. Ashes precipitate these salts and opens the soil that contains them to the air, by making it looser in texture.

"When potash salts have been used in large quantities and the potash has been largely taken up by a rapidly growing crop, as tobacco, leaving most of the acid with which the potash was combined in the soil, ashes or lime may profitably be used to neutralize it. Our best tobacco growers use stone lime or cotton hull ashes largely on their tobacco land, with excellent results.

"A third way in which ashes benefit land is in promoting nitrification; that process by which the more or less inert nitrogenous matters in the soil are made to yield nitrates, from which our field crops obtain most, if not all, their nitrogen supply. This process is in some way connected with the life of low organisms, which are invariably present in fertile soils. Nitric acid can only be produced, however, when carbonate of lime is present to supply a base with which the acid may combine, and a soil mildly alkaline is the one most favorable to the growth of these organisms and the formation of nitrates.

"Such is, in brief, our present knowledge regarding the action of ashes. It is clear that the quantities of potash and phosphoric acid present do not wholly measure the value of ashes, nor does it pay to buy them simply to supply a deficiency of these two things in the manure. The quantities of potash and phosphoric acid in a ton of ashes costing \$12 to \$15, can be bought in the form of muriate of potash and superphosphate of lime for \$8 or \$9. But ashes temper certain soils, making them easier to work, moister, and more retentive of manure, correcting 'sourness,' promoting the solution of plant food in them, and so preparing the way for the use of fertilizers, which, directly applied, might be wasted. To accomplish these ends, ashes have to be used in considerable quantity, and probably a single heavy dose would help more than the same quantity applied in fractions, through three or four successive years, if the object is to change the mechanical condition of the soil strikingly."

Ten Thousand Pounds of Wood contained Pounds of the Ingredients named :

Potash	19.02	18.06	16.85	14.94	13.95	13.80	10.60	7.13	5.01	4.54	3.02	2.90	.79
Phosphoric acid....	5.72	9.55	6.96	1.15	5.98	5.83	2.49	3.19	1.24	.96	.92	1.09	.73
Lime	26.41	24.73	35.61	7.60	27.40	18.40	7.85	14.21	18.04	15.16	12.46	7.93	12.12
Magnesia.....	4.67	.49	5.28	.10	3.05	4.86	.90	2.94	2.03	.74	.10	.34	1.17
Potash	28.04	23.17	21.92	46.04	24.86	28.60	42.16	19.54	15.35	19.70	14.30	18.10	3.85
Phosphoric acid....	8.51	12.23	9.00	3.58	10.85	11.97	9.48	8.75	3.82	4.18	4.33	6.76	4.11
Lime	38.93	31.62	46.39	23.57	48.26	37.94	29.85	38.94	55.24	65.53	58.98	49.18	67.73
Magnesia.....	6.80	.62	6.88	.60	5.38	10.04	3.43	8.05	6.25	3.20	.50	2.11	6.54

*Free from carbon and carbonic acid.

The Pure* Ashes of the Woods contained the following per cents. of the Ingredients named :

PLUM GROWING IN THE COLD NORTH.



At the meeting of the Iowa State Horticultural Society, H. A. Terry, of Crescent, who has done more than anyone in the State on the introduction of our native American plum, said that for the purpose of propagation, select a good, clean piece of ground, rich enough to grow good corn, and prepare it in the best possible manner. About October 1st the land is prepared, giving it the best cultivation. Make furrows about 2 inches deep and 2½ feet apart. The pits are planted immediately. Cover so as to level the ground. The sooner the pits are planted after they are gathered the better they will germinate. If not planted too thickly, they will be large enough to bud the first season. The varieties best adapted for Southern Iowa are Milton, Charles Downing, De Soto, Hammer, Jones, Hawkeye, Forest Rose, Cheney, Macquoketa, Wolf, Crescent City, Col. Wilder and Champion. Milton is the earliest and Champion the latest. This list fills the season from the first of July till hard frosts.

Hon. Silas Wilson, of Atlantic, paid a high tribute to the culture of native plums in Iowa. He thought much would come from the work of hybridization and cross-fertilization, as witnessed by the excellent results obtained by Luther Burbank, of California, in the Wickson plum and Giant prune. Iowa plums of recent introduction, that have an established merit, are Hawkeye, Wyant, Milton, Tatge, Charles Downing, Hammer, Communia and Rockford. Of the Chickasaws, Milton should be placed first and Charles Downing second. The Milton ripens three weeks earlier than the Wild Goose. The Charles Downing is a good keeper, a beautiful plum, and superb in quality. The Tatge is of European strain, and originated in Benton County some 25 years ago. It is a heavy bearer, and belongs to the Lombard family.

Hon. J. G. Berryhill, of Des Moines, who is cultivating our various native plums for commercial purposes, considers Forest Garden, De Soto, Wolf, Hawkeye, Miner, Maquoketa and Milton as best suited for Iowa conditions. Hawkeye is the largest and most attractive of the American varieties. De Soto is a wonderful bearer, but is not adapted to all soil conditions. Forest Garden is one of the best plums for home growing, but it is not so valuable for distant shipment. Wolf is the most profitable plum to grow. It bears well and early. The Miner has been a profitable plum. It is productive, but only when surrounded by other plums like Wolf, De Soto or Forest Garden. The Russian plums have not been successful on his place.

C. L. Watrous gave it as his opinion that our native plums are most satisfactory. Col. G. C. Brackett stated that at the various trial stations in Iowa, De Soto, Forest Garden, Wolf and Stoddard have done best. During the dis

cussion it was stated that of the Domestic type the Communia and Richland have borne good fruit. In fact, all of the Domestic have done well in the southern half of Iowa the past year. The Japan plums show vigor of growth, but in some cases do not mature their wood. Mr. Berryhill has had most success with Willard. It flowers at Des Moines from the middle to the latter part of April. The Japan plums come into bloom suddenly, ripen earlier than any of our plums, and with them we may have fruit from June until the end of the season.

HOW TO LAYER GRAPE VINES.



GRAPE layer is a branch of the previous year's growth laid in early spring in a trench and covered with earth. Shoots start up from this and beneath each shoot will be some roots, thus making a new plant at each joint. But in a very dry season many of the joints will not root, or if they do will make poor growth. Better success may be attained by waiting later in the season.

A bare branch laid in a trench, even if very lightly covered with earth, gets such a set back that many of the eyes will push feebly or not at all. Leave the branch on the trellis till June or later, and let the buds push to six inches or more in length. Then dig a bed of mellow soil and lay the branch on it to see how many of the shoots will turn upwards. Cut out all that grow downwards, and cut a slight notch under each of the other shoots on the main stem. This is to arrest the flow of sap and cause the roots to form. When you have got the branches you want, cut off the lower leaves at the basis of each shoot. They do no good, and if left would be covered with earth when they would rapidly decay and injure the plants. Dig a slight hollow deep enough to come to moist earth, and with one or more forked sticks pin down the branch to the ground, pressing it firmly against the soil. This is very important, as when roots are formed it is necessary that they come in contact with the earth as soon as possible. Finally, after the branch is trimmed and laid down, with a sharp knife cut a ring around it an inch wide, completely scraping off every particle of the bark down to the wood. The effect of this is to entirely arrest the backward flow of the sap to the roots. The sap makes its way to every cut place, and forms the basis from which the roots push. Make this excision near the ground, and finally lay it down and cover it with earth. The part of the branch outside the cut will soon swell to double the size of that next the stem. This engorgement of sap goes into the new roots as they push from the shoots and makes them very vigorous.

Shoots of this season's growth will become firm enough to layer by mid-summer. The extreme shoot should be cut back severely, so as to throw the sap back into the laterals. Cut away the leaf under each shoot before setting.

Tiverton, Ont.

A. H. CAMERON.

CANADIAN APPLES IN ENGLAND.

IN the Edinburgh market, as in other markets of Great Britain, the best grades of well-colored apples are in the highest demand, such as Baldwins, Northern Spys, the genuine Spitzenbergs, York Imperials and Romanites from Virginia, which last are quite different from the fruit of the same name from other parts of the United States, the latter being a pale, undecided color, instead of dark rich-looking like the Virginia fruit. Baldwins are inclined to ripen quickly, but their quality is liked and they always command a ready sale, bringing from \$4.50 to \$5.50 a barrel. The Northern Spys are favorites, especially those from Canada, which seem to be superior in keeping quality to those grown farther south. Many apples are exported as Spitzenbergs which do not have the shape of the genuine fruit and which are quite inferior in flavor and have none of that dissolving quality which distinguishes the true fruit. The King apples, especially those from Canada, take the first rank on account of their color, their flavor, their fine fibre and the rich look of their flesh, and they always bring good prices. Of course, the Newtown Pippin is the favorite among green apples, and those grown in Virginia of the finest flavor and most melting quality, in ordinary seasons range from \$5.00 to \$7.50 a barrel, but owing to their abundance this year prices ruled lower. It should be noted that there are two kinds of Newtown Pippin which reach Great Britain, one of which is gritty, hard and inclined to be dry, resembling somewhat the Swaar. They are more beautiful, however, than the Virginia Newtowns, which do not look as bright, being of a greenish yellow with a small red spot. The Rhode Island Greenings is always in demand for cooking purposes, and Greenings grown in Canada have superior keeping qualities. The prices rule from \$3.50 to \$3.75 with a fair ordinary supply, but when the importations are excessive they have fallen as low as \$2.75 a barrel. There is little demand for Russets, except when other apples are scarce. During the season of abundance they are neglected and sell at low figures. The York Imperial is a comparatively new apple, but as it has arrived this season it commands good prices on account of its size and bold appearance. It has brought from \$4.00 to \$4.50 generally, but when other kinds are scarce it has sold for as much as \$5.50. Rome Beauties have not been known much until recently, but being of a good keeping quality and bright color they command ready sales, although they are rather dry in quality. Ben Davis has little to commend it except fair quality, and there is no active demand for it when there is anything like a fair supply of other kinds. Winesaps from Virginia are much sought for here. They have a rich deep color and superior flavor, excellent keeping quality, and they carry well, so that they have everything to recommend them. They generally sell at from \$4.50 to \$6.00 per barrel. The so-called Winesaps from other parts of the United States are often poor and

soft. This may be due to lack of care in thinning and sorting, but, as it appears in the English markets, the even-sized, beautiful fruit from Virginia is quite as distinct as if it was a different variety, as perhaps it is. In richness of flesh the true Winesap can hardly be surpassed. The Fameuse is also a great favorite on account of its flavor and the absence of any grit in the flesh, while the smooth texture of its skin is near perfection.—Garden and Forest.

CRIMSON CLOVER.



RIMSON clover succeeds well in Ontario. Mr. D. J. McKinnon, of Grimsby, has experimented quite extensively with it, and has proved its adaptability to the Niagara District. He seeded his young fruit plantation with it last midsummer, and left the clover standing as a protection until the middle of May last, when he plowed it under. It covered the ground most completely, and was so beautiful

in appearance that it was worth a journey to see it; and when plowed under it serves an excellent purpose as a fertilizer.

Prof. Bailey, in a recent bulletin, advises that the cultivation of fruit orchards and gardens be discontinued early in the fall, that the trees and plants may ripen their growth. Some catch crop is then desirable, and one of the best is crimson clover. He says:—"This crop will, if properly plowed under, greatly improve the mechanical condition of the soil; its roots will catch some of the leaching nitrates, of which the roots of the trees are now in little need; it will catch the rains and snows of fall and winter and hold them until they gradually percolate into the earth; it will prevent the puddling and cementing of the soil during winter.

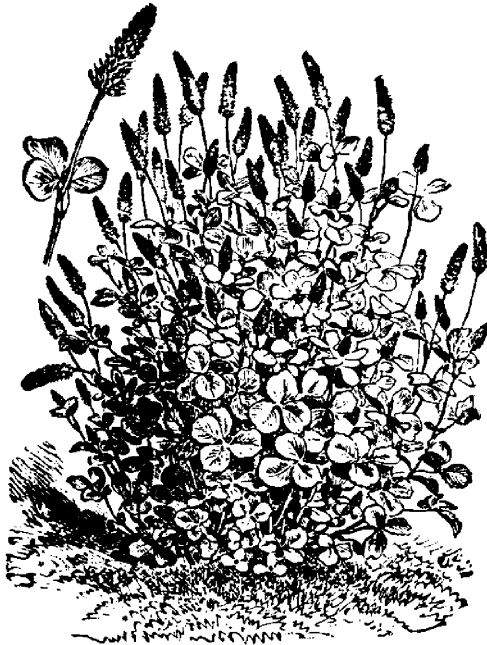


FIG. 971.—CRIMSON CLOVER.

NOTES ON A LECTURE TOUR.—III.

BY far the most active and enthusiastic society that it was my privilege to visit during my tour of March last was the society at Napanee; and to the energy and enthusiasm of its president, Mrs. Judge Wilkinson, is due, in a very large measure, its activity and success. The floral display in the hall at the annual meeting was a lovely one, and the taste displayed in the order and decorations of the hall, together with the very excellent vocal and instrumental music given in the programme, all gave evidence that the citizens of Napanee were cultured in art as well as in nature. And the suburban houses and adjacent farms, as far as any observation could reach, gave evidence that home ornamentation was not neglected by the farmers and suburban dwellers.

At Trenton the meeting was a small one compared with the crowded hall at Napanee. But this was due largely to the fact that several other entertainments were being held in the town on the same evening. In its surroundings nature has done much for Trenton for it is certainly located in a very picturesque spot. While there I met Mr. Dempsey our experimenter for that district who was then, in March, shipping two carloads of apples from his own storage buildings to Montreal and realizing a good price for them. Mr. Dempsey is strongly convinced that there is money in apples for any man who will provide himself with proper storage and keep them till the winter is well advanced. But he is not convinced that there is any money in it for the fruit experimenter at the allowances now made to the several experiment stations, nor can he see any utility in planting for testing purposes a great lot of old varieties of fruit, many of them now commonly grown and some discarded long ago as worthless.

Making my way through the terrible snow blockade to Lindsay I was unable to see much of the country to judge of the progress made in orchard planting, as I travelled much of the time in the darkness, and when daylight favored me the country had largely disappeared beneath the mountains of snow. In a horticultural sense the town of Lindsay has made wonderful progress in the last twenty-five years. Tree planting on the streets and avenues has been pushed with commendable enterprise and the town must look very pretty with its wealth of foliage in the summer season. I was delightfully entertained in Lindsay by a member of our association, Mr. W. M. Robson, and here also I met our esteemed and energetic director Mr. Beall. Mr. Robson and Mr. Beall are close neighbors, and to me it was a pleasing privilege to go over their extensive grounds and to observe the thrift and well-cared-for trees, vines and bushes that made up their orchards, vineyards and small fruit grounds. For town residents they are both large growers of fruit, and verily our director Mr. Beall is a practitioner as well as a preacher in horticulture. From indications visible on every hand the handsome and progressive town of Lindsay has evidently profited both from his preaching and his example.

The society at Lindsay has a large membership, the annual meeting was well attended and the floral display in the hall was a magnificent one. What surprised me much was to find in that Northern town that the pear and plum trees, grapevines, and shubbery of all kinds looked just as vigorous and thrifty as at any of the frontier towns on Lake Ontario, and that roses were grown more extensively and with less difficulty out there than at the front.

Mitchell.

T. H. RACE.

CANADIAN APPLES FOR NEW YORK CITY.

To the Editor of THE CANADIAN HORTICULTURIST.

SIR,—A few days since my grocer opened a barrel of Baldwin apples taken the day he purchased them from a cold storage warehouse. They were of good size, fine red color, and fairly free from defects. He gave \$5.50 for them, and retailed them at 75 cents per peck. They were Northern Spy apples.

To-day I gave five cents for two medium-sized Northern Spys, of fine color; on the same stand prime navel oranges from California, were selling at the same price. During the months of October, November and December last we paid our grocer 40 cents per peck for Southern Greenings. They were thick-skinned, coarse-grained, and of a flat sub-acid flavor, only good for cooking, and yet they were the best for the money in the market.

It is now ten years since I left Oshawa, Ontario, and came here to reside. The fruit most difficult to obtain of *fine* quality, each spring, has been apples. Apples from south of Lake Erie and New York State are poor keepers, and lack in flavor. The very best apple country upon this continent is in Ontario, east of Kingston, and south of Georgian Bay. The skin of the apple in that section is thin and high-colored, the flesh fine-grained and brittle, the flavor a brisk, rich sub-acid; fine to eat out of the hand, or to cook. They are better keepers than any apples that I know of. By the time young trees planted now come into full bearing, we shall have in this Republic 100,000,000 of consumers; and if all the land in the section of Ontario I have named was planted with apples, this market would consume them at remunerative prices. There is not the *slightest danger of over-stocking* this market with apples of *prime quality* exposed for sale in March, April, and May.

I have never tasted a prime red Astrachan since I came here, such as I grew in my garden in Oshawa, although I have hunted the markets for them. I suggest that some fruit dealer send to this market some FINE red Astrachans this summer in kegs or half barrels; pack them carefully; ship to some good commission merchant in New York; brand them *plainly* as from *Canada*, and adopt some trade mark so as to establish a reputation for the brand, and I am confident that even after paying the duty and charges upon them they will yield

a fair price. When I resided in Rochester I sent some Louise bonne de Jersey Pears to this market in kegs ($\frac{1}{4}$ barrels), and I received for them after deducting all charges, \$5.50 per keg; this was in 1860. Had I sent them in full barrels they would not have netted me more than \$16 per barrel. Many persons are ready to pay \$2 for a keg of *fine* red Astrachans, who would not give \$6 for a barrel; *superiority* is always in demand, the market is never overstocked, while the market is glutted with *inferiority* at all seasons. Benoni, St. Lawrence, Gravenstein and Maiden's Blush, might be sent here in the same way, as well as Duchess of Oldenburg. The market for *prime* Fameuse or Snow apples, is unlimited.

The success of such an experiment will depend on the quality of the fruit and the care in packing. When the brand is established the demand will far exceed the supply.

In 1894 thirteen hundred carloads of green fruit from California, came to this city, and was sold at auction. The railway freight and ice for refrigerator cars makes the charges about \$50 per ton of fruit, and yet the trade is increasing, in fact, is only in its infancy. Carloads of California plums were retailed in this city at the rate of two for 5 cents, and yet the quality is inferior to *Ontario plums*. Western Ontario should be one vast apple orchard. Cheese at 10 cents per pound only returns 2 cents per quart for the milk, and yet the cheese industry is receiving much attention from the government of Ontario. Fruit can be made more profitable now that we have canning factories, evaporating factories, and cold storage, with a constantly expanding market.

The increase in the population of Canada and the United States from 1900 to 1910, will not be much less than 20,000,000, and in addition to this expansion of population the consumption of fruit per capita is rapidly increasing.

With a population of 25,000,000 we consume less than 40 lbs. of sugar per capita, or, 1,400,000,000 lbs. Now, with a population of 70,000,000, we consume 65 lbs. per capita, or, 4,500,000,000. As with sugar so it will be with fruit.

FRANCIS WAYLAND GLEN.

543 Madison St., Brooklyn, N. Y.

Increasing a Wheelbarrow's Capacity.—When wheeling corn fodder and other light stuff, a wheelbarrow's capacity is too limited for convenience.

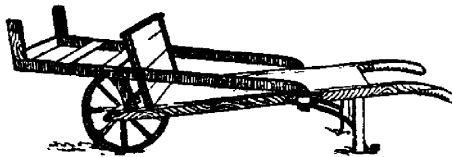


FIG. 972.

The illustration shows a simple attachment that can be slipped into the barrow on such occasions, to the great increase of its capacity. The side pieces should be hardwood strips. The attachment may be supported by

hooks from the strips to the top of the wheelbarrow's back if preferred.—American Agriculturist.



THE FRUIT CROP.



WE have purposely delayed making any reports on the fruit prospects of the present season until this month, in order that we might first pass by the season of most uncertainty. Now that the fruit has not only set, but also begun rapid growth, one may calculate with some degree of certainty upon the crop. The branches shown above were cut at Maplehurst about the 10th of June, to show the fruitfulness of the trees. Beginning on the left the varieties are Baldwin apples, Rivers peaches, Bartlett pears, Governor Wood cherries, and King apples. All these are as full as the trees can carry. The King apple

trees never have carried such a quantity of fruit as they are doing this season, while even the Baldwin, which has for ten or twelve years been almost barren seems to have recovered its old-time fruitfulness. Many growers had become discouraged with this variety, and had rooted up their orchards, and now they will surely mourn their rashness. Bartlett pears and cherries are not grown very far north, but in Grimsby district, this year promises to furnish the finest quality ever known, while the cherries, which we are beginning to harvest, will out-yield any previous year. Peaches also are a magnificent crop in certain favored sections, especially are they abundant about Grimsby, while on the other hand they are failures both east and west, owing to the severe frosts of last January which has also cut them off in both the States of New York and Michigan.

Mr. J. M. Fisk, President of the Quebec Pomological Society, writes as follows concerning the fruit in that section: May opened very warm, and we have had no frosts to check vegetation, but generally cool weather since June came in. In fact such weather as we might have looked for in May. The outlook for the apple crop is first-class. There was an abundance of bloom, and good prospect of a crop of most varieties except Blue

Pearmain. This variety, although full of blossom, is carrying little fruit. There is no show of scab as yet. I have sprayed twice, and am inclined to let things go at that. Spraying is practised by a number of fruit growers in this locality. No signs of pear blight up to date, but plenty of other enemies to fight, as bud moth, tent caterpillar and curculio. All small fruit promise an average crop.

Mr. George Nicol of Catarauqui, Director for the Counties of Frontenac, Leeds, Grenville and Brockville, and the City of Kingston, writes: The prospects for the various fruits is most favorable. Strawberries, although badly winter-killed, are coming on plentifully, and are fine in quality. Gooseberries, raspberries and currants are yielding abundantly. Apples have set well, and the foliage looks fine, except where attacked by the cigar-case bearer. Last season this pest was noticed in this locality in a limited number, but this year its ravages have increased, and will seriously affect the apple crop.

OTTAWA VALLEY.—Mr. J. G. Whyte reports as follows: Apples, early, good; over the average in most places. Twig blight showing, but not serious yet. Apples, late, under the average. Plums, native red, a very heavy crop, no sign yet of the blight. Plums, blue and green, a complete failure, 32 below zero last winter was fatal to all varieties of *Prunus domestica*. Cherries, much under the average; many trees were root killed by the severe cold of last winter. Grapes, an average crop. Currants, black, red and white, all loaded with fruit, above the average. Gooseberries, native, an extra crop. Foreign varieties, that came through the winter all right are a full crop, but many varieties were badly winter killed. Raspberries, red, under the average, most kinds were injured by the severe cold of last winter. Raspberries, black, a full crop. Blackberries, very few grown here, but those that passed through the winter safely are bearing well. Strawberries, not over half a crop; old plantations were badly winter-killed, a fair crop on plants put out last season.

SIMCOE COUNTY.—Mr. G. C. Caston writes as follows: So far as I can ascertain the fruit in this district will be as follows: Apples, above average; prospects of the largest crop for several years. Plums not much grown here, wild or common red plentiful, but nearly all spoiled by curculio. Improved varieties fair. Cherries very light. Pears light to medium. Small fruits suffered from drouth. We had no rain all the spring and up to the 5th of June. Since then we have had some showers, and strawberries may yet do fairly well. Raspberries will likely be an average crop. Gooseberries and currants are fruiting well. As to grapes, so few are grown here that they are not of any consequence.

PERTH AND MIDDLESEX.—Mr. T. H. Race, of Mitchell, writes: The fruit prospects throughout this district are on the whole very promising. Apples promise a full crop. Cherries a full crop. Pears and plums a fair crop, as the trees did not blossom as heavy as last year. In small fruits, black currants are dropping badly and only quarter of a crop can be looked for at best; red and white currants are promising well. Gooseberries are a heavy crop, but the mildew is playing havoc with them in many localities. In some gardens no varieties are exempt from this disease this year, where mildew never appeared before. Raspberries promise a very heavy crop, though the plantations both in wild and cultivated are much more limited than formerly on account of the frosts of last year. As yet there are no indications of dropping except with black currants.

NIAGARA DISTRICT.—Mr. A. M. Smith, of St. Catharines, writes: I think the following will be about the result of the fruit crop for the district I represent.—Strawberries, 75 per cent., early varieties injured by drouth; red raspberries, 50 per cent. badly wintered killed in some places; black-caps, 80 per cent.; blackberries, 90 per cent.; sweet cherries 80 per cent.; sour cherries, 50 per cent.; plums 75 per cent.; fruit buds of Japan and tender sorts hurt by winter frosts; pears, Bartlett and Kieffer 100 per cent., a good many other varieties light, not more than 60 per cent. on the whole; peaches, excepting in the Grimbsy section, very light, not more than 25 per cent.; grapes promise well where vines were not injured by last year's frost, probably 80 per cent.; apples better than they have been for years, 100 per cent., except perhaps on Spys which are light in places.

HURON, BRUCE AND GREY.—Mr. John Stewart, of Benmiller, writes: Apples, the best for a number of years, the fruit is clean and free from spot. If nothing happens, it will be the best crop on record. It would pay to thin out the fruit. Pears will be an average crop. The fruit is clean and free from spot. The Bartlett is bearing the heaviest crop. The plum crop is very large and not much affected with curculio. Cherries are an average crop. Gooseberries and currants will be a large crop. Peaches and grapes very little grown in this district for market.

MR. JOHN CRAIG, of the Central Experimental Farm, writes: The prospects for a good crop of apples in this district are very encouraging. Native Canadian and American plums have set very well and are at this time carrying a full crop of young fruit. Blue plums, (European type) however, were badly injured, last winter both wood and fruit buds, and consequently will yield but lightly. Cherries will also not exceed a medium crop. Raspberries were badly injured in some districts and with the exception of young plantations will probably be a medium to light crop. Plantations three or four years old were much less injured than those which were five, six and seven years of age. Roses, bulbous plants, perennials and the tender shrubs all show the effect of an unusually severe winter. The low temperatures of late December and early January without snow on the ground carried the frost to an unusual depth and wrought considerable injury to fruit trees and tender plants. I have noticed many instances of root killing among apples, pears, cherries and plums. Trees of Duchess and Wealthy have been injured, and in some cases killed, in this district owing to the loss of the seedling roots on which they were budded, while the tops were quite uninjured.

Strawberries on the Experimental Farm will give us a fair crop unless extremely dry weather intervenes. Most varieties have come through in fair condition. Reports have come to us of Woolverton having winter killed badly in this section. In our three year old plantations of 100 varieties there is no variety more vigorous than the Crescent at the present time.

YORK, ONTARIO AND PEEL.—Mr. W. E. Wellington reports: Apples, about 75 per cent., except Northern Spy a failure; Pears, 20; Plums a failure except common red 100; Cherries, 25; Gooseberries, 75; Red Currants, 30; Grapes, 25; Blackberries, 100; Raspberries, 100.

DURHAM, NORTHUMBERLAND, PETERBORO AND VICTORIA.—Mr. Thos. Beall of Lindsay, writes: The apple crop this season promises to be about average taking it altogether. That is the summer and fall varieties will be rather above average, and the winter varieties rather under. Pears will not average more than from five to ten per cent. of average crop. Plums, practically none, Cherries, about ditto. Grapes promise an average crop. Gooseberries, Currants and Strawberries will each give a full average. There is no "Scab" in this neighbourhood and there is but little injury being done by the usual insect pests.

ESSEX, KENT AND LAMBTON.—Mr. Alex. McNeill, of Windsor, writes: The prospects for fruit in Essex could hardly be better. As will be seen from the following estimate, there are no failures and only a few kinds below a full crop. Apples, 100 (full crop); Pears, 95; Plums, 100; Peaches, 100; Cherries, 75; Gooseberries, 70; Strawberries, 100; Raspberries, 100; Currants, 100. There is no indication of any unusual attacks of insects or fungus.

Shrubbery Borders and Beds should be frequently hoed and raked, to give them a tidy appearance. Gravel walks and drives which are made with materials that become very loose during dry weather should be watered and rolled. Keep them clean from weeds by hand weeding, or by application of a weed-killer, which is a much cheaper process in the end than using hoe and rake to them, especially where large gravel is used. The watering of trees and shrubs that were planted late in the season should be continued during dry weather.—Gardeners' Chronicle.

We next proceed to cultivate the soil beneath, and between the trees, until they arrive at their complete size, as the quality, excellence, and maturity of the fruit will, in a great measure, depend upon its proper culture. . . . In fact, it has been ascertained by experience and observation, that apples, pears, peaches, etc., attain to their highest perfection only when the soil about the roots is kept open, and frequently manured.—JAMES THATCHER, *The American Orchardist*, 1st Edition, 1822.

THE STRAWBERRY LEAF-ROLLER.



SHORT time ago a sensational paragraph appeared in the Ottawa papers, stating that the strawberry crop in Prince Edward Co. had been destroyed by "a new blight." Enquiry from growers has shown the reports to be unfounded. A destructive insect is at work, however, as is shown by the following very interesting letter from Mr. Alfred Brown, of Picton, Ont. I quote it in order to draw attention, in the absence of Dr. Fletcher, to a sometimes very injurious insect to strawberry plantations :

"DEAR SIR,—Your favor *re* strawberry blight came to hand Saturday night. After shipping our berries this a.m., I spent balance of day with growers, and could find no trace of damage by *blight*. There are, however, a great many failures owing to the severe winter, some losing all their strawberries and most of their raspberries. Fruit trees generally are damaged more or less. Our three acres of strawberries are not more than 20% of a crop: Wilson, Williams and Beder Wood nearly all gone, and Crescent damaged, but the best of the lot.

I found a grower near Picton having what seems to be a serious pest—a Leaf-roller. He has four acres of 1894 planting, which look as if fire had been over them. His plants set out in 1895, are not quite so bad, but the insect is quite plentiful and gives the rows the appearance of having been affected by a severe drought. I send by this mail a sample of leaves from this yard, also a sample of leaves affected with spot. A neighbor with only one farm between has no insects worth mentioning; another a short distance away has his Wilson's badly affected with the "Leaf-roller."

Our three acres of raspberries are the best show for a full crop we have had thus far. One acre, set this spring, has been damaged to a considerable extent by cut-worms, specimens of which were sent to Prof. Fletcher, yesterday. Very little hay in the county. Spring crops generally good."

As it is important that this pest should be destroyed at once and that growers should be on the look out for it, I cannot do better than give Dr. Clarence Weed's description of this insect, as found in his excellent work "Insects and Insecticides" at page 88. The description, life history and remedy is given as follows :

"*The Strawberry Leaf-Roller—Phoxopteris Comptana*.—This is a small, brownish caterpillar that folds the leaflets of the strawberry by bringing the upper surfaces together and fastening them by silken cords, and feeds upon their substance till they look brown and scorched. It is sometimes exceedingly destructive, and has been considered by some entomologists as the most injurious of the insect enemies of the strawberry. It probably occurs in nearly all the Northern States and, is also found in Europe, where, however, it does not prove troublesome. It hatches from eggs laid in spring upon the strawberry

plants by a small, redish-brown moth. The larva attains its full growth in June, when it is nearly half an inch long, of a brownish or greenish color, with a shining yellowish-brown head. The larva pupates within the rolled leaf, and about mid-summer emerges as a moth. These moths deposit eggs for a second brood of caterpillars that feed upon the leaves late in summer, changing to pupæ early in autumn, and, passing the winter in that condition, emerge again as moths the following spring, thus completing the cycle of the year. In the Southern States there are three, and possibly four broods a year.

Remedies.—The best way to destroy this pest is to mow the field soon after the strawberry crop is gathered, and after leaving it a day or two to become dry, burn it over. This will destroy the leaf-rollers as well as several other kinds of insects, and the spores of fungus diseases. It is sometimes necessary to scatter a little straw over the field where the leaves are not thick enough to burn well. The plants will not be damaged, but will soon send up a new lot of leaves that will grow rapidly, and be free from insect and fungus attack. If for any reason this method is not desirable, the insects of the second brood may be destroyed by spraying or dusting the plants in August with some poisonous insecticide."

This insect is also described and figured in that excellent work, "Insects Injurious to Fruits," by Dr. Saunders. Practically the same remedies are recommended.

In this connection I wish to emphasize the benefits derived from treating a strawberry bed affected with rust in this way. Two years ago I burned every alternate row of plants in our experimental plots, and found the succeeding growth to be exceedingly healthy. The plants came through the winter uniformly in a very successful and satisfactory condition. I believe it to be an excellent practice in large commercial plantations.

Yours very truly,

JOHN CRAIG, *Horticulturist.*

Ottawa, June 25th.

PLOWING WITH THREE HORSES ABREAST.

One on the furrow and two on the land, I use the whiffletree pictured. The long whiffletree *d* is $4\frac{1}{2}$ ft. long, the main clevis *a* being 18 in. from one end. The doubletree, *e*, is 3 ft. long, and the singletrees, *f*, are each 20 in. in length. To hitch up, fasten the clevis, *a*, to the plow clevis; the short end of the long whiffletree goes next to the plowed ground. Then fasten the doubletree to clevis *b*, and one singletree to clevis *c*. Three clevises will be required on the long whiffletree and three on the doubletree. Both larger trees will require five open rings, and if the plow is fastened at *a* with an open ring, another is necessary. Such a rig will answer for a team weighing up to 1200 lbs. to each horse. For heavier horses, the proportion of the trees must be enlarged. This rig can be used for harrowing, rolling or dragging land.—Farm and Home.

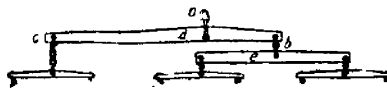


FIG. 973.

❖ Flower Garden and Lawn. ❖

THE ROSE.



DIRECTOR SAUNDERS in his Report for 1895, has an interesting report on roses, and we select several paragraphs :

Hardiness.—Among the summer roses, all the varieties of Moss roses have been found quite hardy, also the Prairie roses and the Persian yellow. Among the miscellaneous varieties in this class Madame Plantier deserves a place in the front rank for hardiness, vigor of growth and abundance of bloom. The flowers are white, double and very fragrant. As already stated none of these roses bloom in the autumn, but they flower profusely during their period of blooming which usually lasts from two to

three weeks.

The Teas or ever-blooming sorts are all too tender for outdoor culture in Ottawa unless they are taken up in the autumn, packed in sand and stored in a cool cellar during the winter. Several of the Hybrid Teas have proven fairly hardy, notably La France and Captain Christy, but of all roses for outdoor culture the Hybrid Perpetuals are by far the most useful and satisfactory, many of them with a little protection are quite hardy, and reward the cultivator with a wealth of bloom which is highly gratifying. The principal part of the crop of flowers is borne from the middle of June to the middle of July, but many of the most esteemed varieties continue to bloom at intervals until late in the autumn.

Planting and Treatment.—The rose needs a rich soil; a good garden loam enriched with well rotted manure dug to a depth of twelve inches or more will suit it well. A more or less sheltered but sunny location is also advantageous, but roses will not thrive in the immediate vicinity of large trees whose foliage interferes with the free access of sunlight and whose spreading roots monopolise the available plant food in the soil. In selecting roses for planting it is a great advantage to have them on *their own roots*, notwithstanding that some of the varieties thus propagated are poor growers, otherwise one is continually troubled with strong growing suckers from the wild stocks, which if not early noticed and promptly removed will often weaken and eventually smother out the graft. In planting spread the roots carefully so as to give them their natural positions, set the plant a little deeper than as grown in the nursery, and press the soil firmly about the roots.

Injurious Insects.—To prevent injury from insects spray or syringe the bushes just as they are coming into leaf with Paris green and water in the

proportion of a teaspoonful of the poison to three gallons of water, stirring frequently while using, and repeat this application whenever leaf-eating insects appear. If thrip is troublesome, spray the foliage while the insects are still young with kerosene emulsion or a strong decoction of tobacco stems, four to eight ounces, boiled for ten minutes in a gallon of water to which $\frac{1}{4}$ lb. of soap may be added. The latter is also a useful application for the green aphid.

Winter Protection.—For winter protection the plan which has been most successful at the Experimental Farm—where the bushes are planted three feet apart each way with six feet of space between every third row—is to dig between the rows and throw the earth about the rose bushes, covering them up to a depth of eight or ten inches. Fill the trenches made by the removal of the earth with fresh manure and loosely cover the earth around the plants with two or three inches of the same material. The stems are usually cut back to about one foot in height before covering. In the spring remove the earth from about the roses, and bury up in the soil as much of the manure as is practicable, and as soon as the buds start remove any dead wood with a sharp knife or pruning shears. Under such treatment the rose beds at Ottawa have been very successful and have given much pleasure to the visiting public throughout the season.

Mr. Saunders closes by giving a list of between thirty and forty varieties which have been found so far, hardy, at Ottawa, and among them the rose illustrated by us last month. We give both the illustration and the description:

Madame Gabriel Luizet.—Fig. 974 represents this rose on a reduced scale. A very strong grower and an abundant bloomer. The flowers are very large, cup-shaped, compact, very handsome, of a creamy rose-color, and slightly fragrant. One of the finest roses in the collection and a fair bloomer during the autumn.

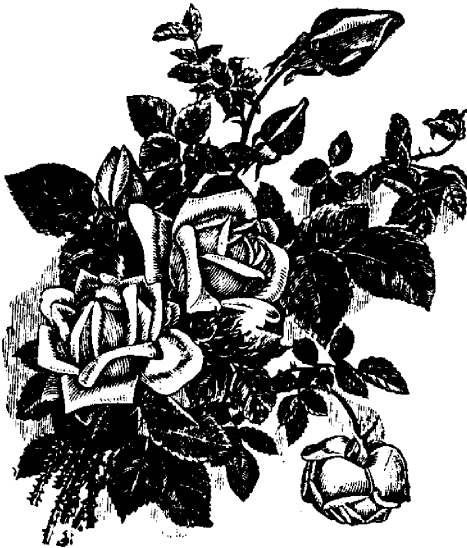


FIG. 974.—MADAME GABRIEL LUIZET.

The Bushel Box is a handy thing. Make them 17 in. long, and 12 in. by 14 in. inside measurement. The ends should be of dressed inch lumber, and the sides and bottom of half-inch lathing, 2 in. in width.

WILD-FLOWERS AND THEIR CULTURE.

People usually make too hard work of cultivating wild plants. They are apt to attempt to imitate the natural conditions under which they find the plants. This, to a certain extent, is wise, but in most cases it is easily carried too far. The problem is simplified when we once come to understand that wild plants grow where they are obliged to grow, rather than where they desire to grow. Because a plant grows in the woods is little reason to expect that it may not grow equally well in the sun. And then, it is not necessary to wait until fall or spring to take up the wild plants. At every outing, whatever the time of year—if the ground is not frozen—I mean to go prepared to bring home roots. In these sultry July days I am bringing home wild herbs, and next year I expect to see most of them bloom. I dig them up with a comfortable ball of earth, cut the tops off nearly to the ground, and keep them moist until I get them home; then they are set in the border, and if dry weather follows, a little water given occasionally at sundown helps them to grow. I do not pretend to say that July is as good a time as April or October to remove plants, but one must capture the good things as he finds them. * * * The native orchids, however, usually require careful management, being among the most difficult of native plants to colonize. Most of them require complete or partial shade and a moist subsoil. If a water supply is at hand, a moist plat under trees or about buildings, where there is some protection from wind, can be made, and clumps of many species can be removed with safety. It is best to remove them in summer, as soon as the flowering season is past. In most cases, however, the plantation will prove to be short-lived, and fresh recruits will be needed from time to time.—L. H. Bailey, in *American Gardening*.

FLORAL DECORATIONS.



THE floral decorations for a wedding, reception, lunch or tea, form fully as important an item as the menu. A most effective center-piece for a dinner-table is a little lake with exquisite water lilies afloat.

A unique piece seen at a recent social gathering was a basket in the shape of a straw hat, silvered and mounted on a tripod. This was filled to overflowing with Mermet roses and their foliage; the effect was most charming.

At a recent reception one of the dressing rooms was a symphony in red. The room was flooded with a rosy-hued light, the pleasing atmospheric effect resulting from the handsome red shade of the lamp. A large mirror reflected the pervading hues of the apartment, the frame being gracefully draped with a

large red crepe shawl, heavily fringed. Red carnations in abundance were used for decorations.

Among the new center-pieces for dinners is a tiny lake with a small fountain playing in the center. Two silver swans are on the lake, and around it is green moss and vines.

Flowers are no longer massed together as they once were. While calling at a beautiful home in California I was pleased, and at the same time surprised, to see a dozen varieties of flowers in as many different vases. The glorious California poppies, whose sheen no artist can put on canvas, were in a large glass bowl where the sun's rays fell on them. They brought to mind Rose Harwick Thorpe's poem dedicated to them :

Flower of the westland, with calyx of gold,
Swung in the breeze and lace woven sod,
Filled to the brim with the glory of God,—
All that the wax-petaled chalice can hold ;
This was the birth of it on the brown plain,
The sun dropped a kiss in the footprint of rain.

The modest little violets, which are such a favorite everywhere, were carelessly arranged in low, quaint shaped little glasses with an abundance of their own foliage. Beautiful roses with long stems were gracefully arranged in tall slender glasses. Pansies in all their glory, varying from a golden yellow to a royal purple and velvety black, were laid in flat dishes on a bed of green vines and leaves. Then there were carnations, camelia japonica, cosmos, etc., each flower showing off to the best advantage. It was truly a study for an artist.

Baskets and shells make admirable receptacles for flowers. A large silver dish is most effective when filled with pink flowers and green leaves or vines.

Sweet peas and mignonette should always be grouped together. While sweet peas are pretty arranged alone, the two together are an improvement. There is no more picturesque and effective decoration for a summer luncheon or dinner than maiden-hair ferns. Having the dining room profusely decorated with this graceful fern, and let the menu so far as possible be in green and white.

Fern dishes are much more reasonable than ever before, so nearly every one can afford at least one. When filled with the lovely growing maiden-hair nothing can be more effective or refreshing.

Tall Chinese vases which can be placed on the floor in corners or near the mantel are much liked for large, long-stemmed flowers. A pretty rose vase is of pale green glass.

Natural effects and an absence of conventionality should characterize the arrangement of flowers at all seasons and in all places.

Simplicity is the cry of the hour in floral decorations as in house furnishing, and the most delightful entertainments are those where carelessness, grace and simplicity are combined.

The Farleyense fern is very popular for the table decorations. Around the candelabra, in the center of the table, a wreath is frequently made of this fern, which is coarser than the maiden-hair and liked better by some. Through this heavy wreath are allowed to peep exquisite roses fastened in wet moss—Gen. Jacqueminot, American Beauty, Caroline Testout, Catherine Mermet, La France and Perle des Jardins all answer admirably for this purpose. Wild flowers prettily arranged make quite as satisfactory decorations as the cultivated ones; in fact wild flower luncheons were quite the rage last year, and bid fair to be this.

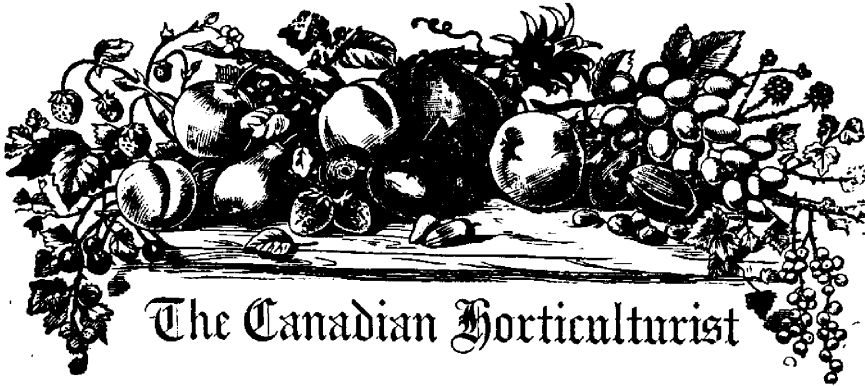
In the way of souvenirs nothing can be more dainty and attractive than tiny baskets of flowers with bows of ribbon tied on the handle.

CARRIE MAY ASHTON, in *Vlck's Magazine*.

Mulching Sweet Peas—Sweet Peas are invaluable where many cut flowers are needed in June, July, and August, and by successional sowings a constant supply of their richly coloured blooms may be had over the whole of that period. It is not necessary, except for market purposes, to sow a long row at one time. A third at three different intervals is quite sufficient unless several sorts are wanted, and even the seed can be mixed. A row 5 yards or 6 yards long if well mulched and watered several times when flowering with liquid manure will produce an astonishing supply, but if mulching and picking off the seed-pods is neglected, a short-lived, meagre crop of bad colour will be the result. A quick lad will in a few hours clear off all the seed-pods from a long row, and thus give the haulm another lease of life. I am growing the lovely pink Princess Beatrice this season, also the White Emily Henderson and the ordinary mixed varieties.

Herbaceous Plants in Summer.—The great majority of hardy perennial flowers are natives of woods or grassy places where the earth is shaded from the hot summer suns. When they are removed to open borders they suffer seriously from summer heat. It is, therefore good practice in these open sunny situations to have the ground mulched or covered with something like decayed leaves or half-rotted straw or anything that will prevent the scorching rays of the sun on the earth. Herbaceous plants do not care so much for bright sun as they do for a cool soil at the roots. For the same reason a loose, open soil is better for growing herbaceous plants than soil of a heavier character, because having more air spaces, it is cooler. In short, it is a cool soil more than shade that herbaceous plants require.

Among the hoed crops which are best suited to young trees, are potatoes, ruta bagas, beets, carrots, beans, and all low hoed crops. . . . All sown crops are to be avoided, and grass is still worse. Meadows are ruinous—JNO. J. THOMAS, *The Fruit Culturist*, 4th Edition, 1847.



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. ✧

THE DROUTH IN ENGLAND has been so serious as to impare the otherwise excellent prospects of the English fruit grower for a heavy crop of apples and pears.

MR. T. C. ROBINSON, of Owen Sound, has again entered upon the nursery business at that place, and will be pleased to correspond with old patrons.

NO PREMIUM PLANTS.—Many subscribers complain they have received no plant this spring. This is because they did not ask for it. Thinking that those not choosing did not desire one, none were sent in such cases.

SELBY'S SEEDLING STRAWBERRY comes to hand from Newcastle, Ont., badly packed, and therefore not in condition to judge of its quality. Mr. N. T. Selby writes that the plant is strong and healthy, and the berry ripens extra early.

THE FIRST CARLOAD of melons from Florida arrived in New York early in June. The crop is short owing to drouth, while in Georgia the average has been reduced more than one half. New York City consumes about 20,000,000 melons per annum.

LIME LACKING.—Compared with the soils of other countries, Mr. Shutt, of Ottawa says, many in Canada appear deficient in lime. This fact suggests that the judicious application of lime, marl or gypsum (at the same time supplying other forms of plant food) would lead to good results.

THE GENTLE BEES.—Mr. John McArthur writes to deny Mr. Holterman's statement, and sends a copy of the American Bee Journal and report of the Convention in which Mr. McArthur's name is mentioned and also a copy, of an article by the editor describing his visit to Toronto Island, and how wonderfully patient of abuse Mr. McArthur's breed of bees was. We have no room for discussing disputed points.

A BIG STRAWBERRY.—Mr. S. T. Pettit, of Belmont, sent us a four quart pail containing some immense samples of the Sharpless strawberry grown on his farm. The soil is clay loam and evidently well adapted to growing strawberries. One of these berries measured $6\frac{1}{4}$ inches in circumference and weighed $1\frac{1}{4}$ oz. Mr. Pettit claims that every farmer should grow a good patch of strawberries for home use whether he grows them for market or not.

THE SAN JOSE SCALE.—The dreadful San Jose scale has been spread all over the Union by trees from California nurseries. The kerosene and soap emulsion recommended by the Washington authorities has proved very unsatisfactory; but the following has been found to be a perfect remedy: Boil 10 pounds unslaked lime and 20 pounds sulphur in 20 gallons of water four hours. Then slake 30 pounds more lime, adding 15 pounds stock salt while slaking. Mix all together and cook an hour longer. Strain and spray as soon as leaves fall in autumn and when buds swell in spring.—Ex.

PROTECTING CHERRIES FROM BIRDS.—Horticulturist Troop of the Indiana Station has been experimenting with bird netting to protect several trees of Russian cherries from birds. Two six year old trees of Bessarabian cherries bore half a bushel of fine fruit each, where protected, those not covered were entirely stripped. About 75 square yards of netting were used for trees 10 feet high; the cost was four cents per square yard. Mr. Henry R. Boardley, of 186 Denmark Road, Lowestoft, England, writes he has a large stock of garden netting at low rates.

A LIVE WESTERN HORTICULTURAL SOCIETY.—The Iowa Society is making rapid progress, judging by the Report for 1895, just to hand. The State grants them \$2500, and the Society has four Sub-societies, to each of which it grants \$150 per annum. There are also sixteen fruit experiment stations in the State, under the control of the Society. The work of these is, however, rather desultory and the fruits planted in convenient vacancies in various parts of the fruit farms, so that little satisfaction can be got from the station reports; of course little can be expected when only \$10 per annum is allowed each experimenter, but it is proposed to increase this to \$50 each per annum. It is also proposed to ask the State for \$10,000, to establish a central station of forty acres in charge of the Secretary, who is also visitor to sub-stations.

In reporting on the work of the stations the Secretary, Mr. G. C. Brackett speaks of the Stoddart plum as one of the best natives of Iowa, of recent introduction. For that State the following list is also commended : DeSoto, Wolfe, Hawkeye, Rockford, and Forest Garden.

He speaks well of Columbus and Chautauqua gooseberries, the fruit of both being large and fine ; and he condemns the North Star currant.

The Russian pears have not proved a success in Iowa, an experience similar to our own in Canada. The Wragg cherry he declares to be identical with the English Morello.

A paper on "Co-operative Fruit Handling and Selling," is suggestive. Such an association must of course secure uniform packages, and honest packing ; a competent man must examine and brand the packages Grade 1 or 2 as the case may be, and when once the reputation of the association is established there is no difficulty in finding sale for the goods at remunerative prices.

PACKING CHOICE EARLY PEACHES in one layer boxes holding 18 to 24 specimens of fruit is practised in England, and suggests to us some better way of putting up our extra selected stock than in baskets. *The English Fruit Grower* says : The first point is to ensure that each fruit is packed so firmly that it will not shift and bruise in transit. Some senders wrap each fruit first of all in tissue paper large enough to cover it. The ends are twisted at the top, and this twist, if kept upright will be useful as a handle to pack and unpack the fruit without handling the fruit itself after it is once wrapped up. The box will hold about 18 or 24 fruits. The fruit, when papered, can be packed in bran or preferably wadding. We say preferably wadding, because its use is very effective. One layer should be spread over the inside bottom of the box. A strip should be put round the sides, then a piece folded about 2 in. or 3 in. deep, according to the size of the fruit, and about 6 in. or 8 in. long, can be wrapped around the sides of the peach. It can then be put in its place in the box, and thus packed closely together and in rows, the box when filled is fit to travel any distance in the United Kingdom without risk. A sheet of wadding placed over all the fruit before the lid goes on is all that is needed to complete the process. Any special wooden box maker will supply peach boxes.

THE GLADIOLUS is the gem of all summer flowers because of its richness, brilliancy and variety of color. No other plant is so easy to grow, so certain to bloom or so brilliant in effect. It is admirable for borders or for groups. The bulbs may be planted from the earliest spring until August. The flowers are extremely durable and thus valuable for decorative purposes. When frosts come, the unblossomed spike may be cut and placed in vases, where many will open. To get the best quality of bulbs, do not let the spikes go to seed.

F. & N.

❖ Question Drawer. ❖

Blight on the Narcissus.

849. SIR.—Can you tell me the cause of the blight on the narcissus buds, samples of which I enclose. I have a large plantation of them and hundreds of the buds are thus blighted.

H. ROBINSON, *Collingwood, Ont.*

Reply by Horticulturist Craig, of the Central Experimental Farm, Ottawa.

I do not find that the Narcissus buds are attacked by any disease, but I am of the opinion that the flower buds have failed to develop properly on account of a weakness of the bulbs, induced by the severe cold of last winter, rather than that have been affected by any fungus disease. A number of cases of hyacinths, narcissi and other bulbs have come under my notice where they have been severely injured by the extreme cold of last winter.

Currant Leaf Fungus.

850. SIR.—I enclose a leaf of my red currant bush affected with a fungus which has been quite serious. Some of the bushes affected last year have since died.

J. PARKINSON, *Portage la Prairie Man.*

Reply by Horticulturist Craig, Central Experimental Farm, Ottawa.

The leaf enclosed is affected with the disease known as *Gleosporium ribis*. This frequently attacks English gooseberries causing considerable damage. It may be prevented by a judicious and persistent use of Bordeaux mixture.

Gall on Rose Leaves.

851. SIR.—I enclose a twig of *Rosa rubifolia* which you sent me a year ago. The bush is growing well, but is being covered with fuzzy stuff which the florists do not understand. Please favor me by telling me what it is and how to get rid of it.

MR. R. CHISNELL, *Hamilton, Ont.*

The fuzzy stuff mentioned by our correspondent is a gall caused by the gall fly. The eggs are deposited on the leaves, and cause the peculiar growth. The galls should be cut off and burned as soon as they appear, as, otherwise, they will soon destroy the bush, as they already have done with the sweet briar in southern Ontario.

British Columbia Apples.

852. SIR.—In the 1st report of the Fruit Growers' Association I notice a reference to British Columbia apples. These are not as well flavored as those grown in Ontario, nor will they keep as well. Spy, Baldwin and Greening will not keep much after Christmas. They are great sized apples and fine in appearance, but rather coarse grained. Seeing Spy

apples in a store in Vancouver early in May, I said, "Northern Spys—How's this." "Oh, they are from Ontario," the man replied, and he added with emphasis, "and they will keep." But Russets are as good as in Ontario and well flavored, and the Newtown Pippin succeeds well also.

W. E. BROOKS, *Mount Forest, Ont.*

English Gooseberries.

853. SIR.—Nurserymen are out concerning English gooseberries which they recommend as being free from mildew. The Keepsake is a determined mildewer, some of my Industry mildew and so do Ashton's Red and Whitesmith a little. White Eagle is free from mildew and of a vigorous growth. It is even superior to the Yellow Scotch, but the latter is far ahead of Industry or any of that class for vigorous growth, and is mildew free. I have not seen the mildew as yet upon the Lancashire Lad, Rifleman, Red Champagne, Crown Bob or Ashton's Red, except a little on the berry of the latter. On Ashton's Red, that is Red Warrington, there is mildew on some of the berries, both here and on our own place. It is curious that Green describes the Lancashire Lad as smooth, when I have it from him hairy, and also some from England. Mr. Spillet describes the Chatauqua as small, but it is not small. It is a difficult to get a perfect gooseberry for this county. Pearl and Downing are too small. Mr. Spillet thinks too much of rapid wood growth. Many of the best English kinds at their home are of slow growth, but in the end become large bushes that will yield sixteen quarts, and will outlast the rapid growers for number of years in first class bearing condition.

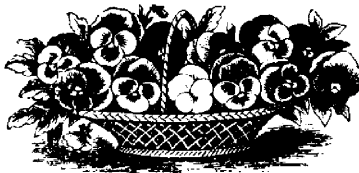
W. E. BROOKS, *Mount Forest, Ont.*

Unfruitful Pear Trees.

854. SIR.—My Clapp's Favorite pear orchard, seven years plants, grows rapidly, and blossoms freely every spring, but fruit drops off. I spray it in spring with sulphate of copper. Had I better sow seeds of some crop in the orchard?

JOHN BEAMER, *St. George.*

A seven year old pear tree, growing rapidly should not be expected to bear much fruit; it cannot well make a heavy wood growth, and bear fruit as well. The subscriber must either wait a few seasons longer, or else seed down the orchard to clover, and check the rapid wood growth.



* Open Letters. *

Fruit in Manitoba.

SIR,—I am confident that apples can be grown here yet, though many people think otherwise; but when young trees grow in the summer and live through the winter, they will surely get large enough, and if they grow large enough, why will they not bear apples? I believe there are twenty-five varieties of apples of the catalogue of Messrs. Stone & Wellington, that will grow here; and, if money were a little more plentiful, I would not hesitate to plant ten acres with two year old trees. Black, white, and red currants look well, and so do gooseberries, raspberries and strawberries.

J. PARKINSON, *Portage la Prairie, Man.*

Unproductive Gooseberry Bushes.

SIR,—Being confined to the house with an attack of catarrh, my mind has been running over my changed luck in growing gooseberries. Formerly for years I never had even a middling crop, but the bushes bore every year seemingly every berry the limbs had room for. What is the matter then that bushes run for fruit (not for plants), last year bore only a scattering crop though they bloomed profusely in spring, and the fruit set nicely, but afterwards disappeared as if by magic. Again, this year the bushes set a fine crop, but again this dropping has gone on till only very few are left.

Let me give a sketch of my experience, so that haply the cause for this may be discovered.

Formerly I had not the time or implements necessary to cultivate, but mulched instead—in some cases imperfectly, but kept the weeds cut under and between the bushes, with ordinary chop-hoe and shove-hoe, so that the soil was not disturbed more than half an inch deep; and year after year had loads of fruit. One hard knoll, the top soil of which had been scraped off often became so hard that *it was impossible to cut the weeds.* (*I always dug in the fall after picking*), and still the bushes on this knoll never gave less than five quarts to the bush, 75 bushes set 4 x 4.

Well, I got improved machinery, a Planet Jr. Horse Hoe, with all its combinations, and started to cultivate deep last year, with the result that I had a poor scattering crop. This year the ground being hard, we decided to dig before setting the scuffler to work. The soil was so solid that it broke out in chunks from 6 inches to 8 inches deep; and though the scuffler was immediately set to work the young fruit again disappeared completely.

I first noticed this with bushes that had been mounded up to grow plants; though only a few lower limbs and suckers were cut away the main stems never bore any fruit. This fact I mentioned to you last summer when visiting my place. The removal of the same wood without any disturbance of the soil, would only have the effect of increasing the size of the remainder of the fruit.

This year I have four rows with 30 to a row, which were mounded up last summer; these mounds were not removed this spring, and the stems above the mounds are bearing a good crop of fruit while the fruit has nearly all fallen from the adjacent rows which are being cultivate.

I notice by reading up everything at my command, that this is not a new idea, but it has been noted by a number of fruit growers in the United States; among the rest, the Rural New Yorker.

Mulching is certainly easier and saves a great deal of hard work, but one cannot have his garden looking so nice and trim. I have no doubt that deep cultivation of the soil early in spring, especially if the weather is dry, will invariably be followed by this result. Years ago I took great interest in the Fay's Red Currant and the Champion Black, and had about 400 bushels of each. These were dug among first thing in the spring and afterwards continually cultivated with a Planet Jr. Hand Wheel hoe. Every year the currants dropped till only the naked peduncles were left. During all this time I had a plot of Downing gooseberries mulched, for the want of time to cultivate, and they bore enormous crops every year. Now, upon the same soil, very rich, almost every berry falls, the only difference being thorough cultivation.

Nantyr, June 11th, 1896.

S. SPILLETT.

Saunders Plum.

DEAR SIR,—I notice an article in the *Horticulturist*, June number page 214, regarding Saunders Plum, which differs very much with my experience with it, also with my neighbors, where quite extensively grown. As grown in this district it is of first quality, very attractive, large yellow plum; good grower, healthy foliage; ripens last of July or first of August. Was exhibited first time at Fruit Growers' Association meeting held in St. Catharines, in 1883, and pronounced excellent quality, worthy of extensive trial. That fruit was grown on the original tree, grown by John Arris, Belleville.

W. H. DEMPSEY.

Saunders Plum.

SIR,—I notice in the June number of the *Horticulturist* on question No. 846 at the request of Mr. J. T. Stewart as to the hardiness of the principal varieties of plums and am surprised at the answer given by Mr. Gordon which may mislead many who intend setting out plum orchards.

I will give a list divided into three classes: hardy, medium and tender according to my judgment and from personal observations, principally while trees are young. Some of these varieties, although tender in the nursery row, may overcome this with age:

Hardy.—Brant of Naples, Gueii, Duanes Purple, Lombard, Shippers Pride, Spaulding, Saunders, Red Egg, Peach, McLaughlin, Monarch, Field, Yellow Egg, and Bradshaw. The latter, although not as hardy as Lombard should class with the hardy sorts.

Medium.—French, Italian, and German Prunes, Gen'l Hand, Smith's Orleans, Grand Duke, Jefferson, Imperial Gage, Moore's Arctic, Pond's Seedling, Shropshire Damson, Abundance, Willard, Satsuma, Ogon, Chabot, Red June, Wickson.

Tender.—Coe's Golden Drop, Victoria, Reine, Claude, Kelsey,

E. MORRIS, *Fonthill*.

Notes from Simcoe Experiment Station.

THE Smith's Giant Black Cap raspberry has proved entirely hardy here. It was exposed to a temperature of 26 degrees below zero without any protection whatever, and the canes are alive to the very tips. If the fruit turns out to be of good quality, it will be an acquisition for this section. It is fruiting heavily this season and we will soon know something of its quality.

THE Baba and Bessemianka Pears are seemingly quite at home and find here a congenial climate. I believe they will be like the Duchess apple in that respect. They are very thrifty so far, seem not to be affected in the least by extreme cold, and the foliage is of that dark green color and luxuriant growth so characteristic to hardy varieties.

WITH respect to your query last year, Mr. Editor, "Does a profusion of bloom draw heavily on the vigor of the tree even though it produces no fruit?" I would say I believe it does. My Flemish Beauty pear trees were last year a perfect mass of bloom. The frost came just as the fruit was setting and almost totally destroyed it. Only a few specimens on each tree survived. This year only a few blossoms appeared on those trees, although they were in a very healthy condition. Did the failure of the fruit cause a larger growth of wood, and consequent failure to form fruit buds? Or, was this year's failure owing to the great quantity of bloom last year drawing heavily upon the fruiting capabilities of the trees? I am inclined to believe the latter.

G. C. CASTON.

Soda Not a Substitute for Potash.

SIR,—In the clipping marked "Small Fruits," page 200 of the June issue of the *HORTICULTURIST*; speaking of the value of Nitrate of Soda as a fertilizer, it is there stated, "As an available source of nitrogen, containing 16 per cent., and also 35 per cent. of soda, which is a substitute for potash for agricultural as well as for industrial purposes, the market does not furnish a better article or one that is more immediately active, and with the phosphate of lime it makes a complete manure."

I wish to point out that soda cannot be substituted for potash in agriculture. Plants have not any, or at the best a very slight, elective ability in respect to the nature of their food, and very many careful experiments have proved that potash as an essential element of their constituents, cannot be replaced by soda. This fact disproves the assertion that with phosphate of lime nitrate of soda makes a "complete manure." To such an end, potash must be applied in one or other of the forms procurable for agricultural purposes. These are: Wood ashes, containing about 5.5 per cent. of potash; the Muriate, containing about 5.4 per cent. of potash; the Sulphate (high grade), containing about 5.4 per cent. of potash; the Sulphate (low grade), containing from 25 to 30 per cent. of potash; Kainit, containing about 15 per cent. of potash.

Yours faithfully,

FRANK T. SHUTT, *Chemist, Exptl. Farms, Ottawa.*

Errata.

SIR,—Correction on page 216 adds to the complication. New crosses from *seeds* (wild varieties), should read "*species*," not "*seeds*."

H. H. GROFF, *Simcoe, Ont.*

↪ Our Book Table. ↩

REPORT OF THE DIRECTOR OF THE DOMINION EXPERIMENTAL FARMS, by Wm. Saunders, F.R.S.C., F.L.S., F.C.S., 1895, containing the results of numerous careful experiments.

FLAX.—A bulletin by Mr. Wm. Saunders, Director Dominion Experiment Farms. This crop is of late receiving increased attention in Canada, and in Ontario there are from twelve to fifteen thousand acres devoted to it. At Baden, Ontario, there is a firm which operates large oil mills for the manufacture of linseed oil, and twelve scutching mills for the manufacture of flax fibre. For oil, this firm alone uses from 450,000 to 500,000 bushels of flax seed annually, and the quantity of oil is from 15,000 to 20,000 barrels annually, all of which finds market in the Dominion.

POTATO CULTURE on the Island of Jersey, by Chas. D. Merrill, Beloit, Wis., published by A. J. Root, Medina, Ohio, 1896, as a supplement to the Potato Culture, by Terry. This is a very interesting and suggestive pamphlet, and every potato grower should read it.

CHEMICAL WORK IN CANADIAN AGRICULTURE, a pamphlet containing a valuable paper on this subject by F. T. Shutt, Chemist, Dominion Experimental Farms, Ottawa.

The Foreign Apple Crop.

Charles Forster, of 76 and 78 Park Place, N.Y., who represents Simons, Jacobs & Co., Glasgow, Scotland; Garcia, Jacobs & Co., London, Eng.; and Simons, Shuttleworth & Co., Liverpool, Eng., is in receipt of the following from Michael Simons of Glasgow, under date of June 3rd from London: "As regards apples I think it may be put down as almost certain that the crop in Great Britain will be about one of the poorest that has been known for a long time. At one time the prospect was favorable indeed, but the long continued drought has produced an abundance of caterpillar and other insects, with the result that the outlook has been completely changed. In France they do not speak very cheerfully of their crop. On the other hand, prospects in Holland, Belgium and Germany are said to be fairly good. I believe, however, that it will not be long before we hear that in these countries too the crop has been destroyed by the same influence that has been at work in Great Britain. I should say that on the whole the outlook for the American season is decidedly good. The general outlook for all other fruits is favorable, especially pears, but as regards these latter, it is said that on account of their abundance, particularly in France, whence the main supply is derived, the fruit will tend to be of small size."