

Garden Orchard and Forest.

GARDENING OPERATIONS.

Kitchen Garden.

If planted out as advised in former calendars, the crops of broccolis, Brussell's sprouts, savoy, and Scotch kale ought to be strong and vigorous. Where they have been planted between rows of peas and potatoes, fork up the ground between the rows as the crops of the latter are removed. Continue to take up the early crops of potatoes as they complete their growth. Celery in all stages requires an abundant supply of water; give liquid manure and clear water alternately. The earthing-up is only to blanch it ready for use; therefore that operation must not be performed until it is nearly full grown. Running and French beans, broccolis, cauliflowers, and late peas must have a few thorough soakings of water, to help them through this dry weather. Remove dead and decaying leaves from cucumbers and vegetable marrows. Plant out late-sown endive in beds and on warm dry slopes. Plant the largest in beds, to come in first; and the next size on the slopes to follow them later in the winter. They are not likely to suffer from damp when planted on slopes, besides being more easily protected with long straw or straw hurdles; the latter are preferable, because they can be moved about without making a litter. All the endive which is sent to London markets after Christmas is grown on banks facing to the south. The banks are about three feet high, with a sharp incline, and are made at the foot of hedges which divide the field. Half the crop of parsley sown early, and now full-grown, must be cut back, to produce a fresh supply for the winter. The leaves now full-grown will probably turn yellow and be useless after a few sharp frosts. Thin out the late crop, and leave plenty of space for each plant to develop itself, as much larger supplies will be obtained than from crowded plants.

Fruit Garden.

Throw nets over fruit-bushes to keep off the birds, and give a little shade to keep a few bunches hanging for a late supply. Put wasp-traps about vines and peaches. Nail in all good shoots on wall-trees, that they may have the heat of the wall to ripen them. Encourage in every possible way the ripening of the wood of the season. If any trees have been allowed to get crowded, thin them a little now to admit the sunshine amongst the well-placed shoots and spurs. Windfalls to be sent into the house every morning for immediate use. Gather fruit in dry weather, and as a rule not till quite ripe. Plant strawberries, or there will be no time for them to get established before winter.

Flower Garden.

Propagate bedding plants for stock. Of geraniums, ripe hard shoots make the best plants. Fuchsias come best from the points of young growing shoots. Strike verbenas and petunias from the points of young shoots. Caeolarias should be struck in good loam and leaf-mould. Herbaceous plants may also be struck in quantities to keep over winter in frames, such as pansies, dicytras, double walls, double Canterbury bells, double feverfew, and hollyhocks. Keep dahlias and hollyhocks well fastened, and put stakes to chrysanthemums before their heads get heavy, as a protection against storms. Pompones may still be struck for blooming in pots. Plant out pinks and carnations in nursery beds, in well-manured loam. Give plenty of water to chrysanthemums, with occasional doses of strong liquid manure. Look over your bins and heaps of compost with a view to replenish for autumn potting, as there will soon be a heavy demand for that purpose. Pansies may be sown, as may also most hardy annuals, to stand over winter for early blooming next spring; the latter should be sown thick, on poor, dry, hard ground, to induce a stubby and hard growth. Some seed should be saved for a second sowing in September, as, in the event of protracted warm weather, such as we had last year, some of the first sown may bloom this season.

POTATO DISEASE.

The *South Eastern Gazette* states that the potato disease has made its appearance in the neighborhood of Rochester and Chatham, during the last few days, and is fast spreading. The late heavy rains are believed to

have some connection with the reappearance of the disease. "Rusticus," writing to the *Times*, gives the following remedy for the disease:—"The best known remedy is to cut off the haulm close to the ground as soon as it shows symptoms of attack. By this means you preserve the tubers sound, though they will not increase in size after; but they will ripen perfectly, which process commences immediately upon being deprived of the haulm. The above is not my own experience only, but also that of one of our greatest horticulturists."

PHYLLXERA, OR GRAPE ROOT LOUSE.

At the September meeting of the Philadelphia Academy of Natural Sciences, among the distinguished visitors present were Prof. C. V. Riley of St. Louis, and Dr. J. E. Planchon, professor of botany at Montpellier in France, the latter of whom is now in this country under authority of the French Government, to investigate our grape diseases. By invitation of the President, Dr. Ruschenberger, Prof. Riley gave an account of the *Phylloxera* or grape vine root-louse, with his most recent discoveries in regard to the same. He had little doubt but the insect was at the root of most diseases that attack the grape in this country, as it was certainly in Europe. Prof. Riley inquired of Mr. Riley the true position of the insect in scientific classification; Prof. Riley replied that it was not yet well settled. Its appearance brought it somewhere near the aphides; but it did not have successive broods from one impregnation; aphides did. In this respect it approaches *coccus*. He thought it between the two families.

Prof. Planchon described the ravages of the insect on the grape roots in France, and thought them less destructive on the roots of American species of grapes than the European; and one of the objects of his mission was to ascertain the fact definitely, so that in Europe some American vines might be used as stocks for their vineyards.

It was clear from the fact that the European vines had been but recently attacked by it, and had suffered so severe from it; while in America the home of the insect—the wild vines had done so tolerably well for so many ages, that the *vitis vinifera* with it was more of a favorite. He excused himself from any lengthy remarks on account of his limited English, and would briefly say, that he agreed entirely with Prof. Riley's views regarding it.

Mr. Thomas Meehan gave a history of grape culture and grape diseases in Pennsylvania from the earliest time to the present, and showed that the failures had never been satisfactorily explained on any theory some times given, such as change of climate, or depletion of the soil. There were always some facts or figures which rendered every previous theory inadmissible to his mind, as he had frequently stated in other places. Prof. Riley's insect discovery, however, met all the requirements of the case, so as to give an air of possibility to Mr. Riley's views, such as no other theory has possessed. That when we saw the foreign grape and others which often did perfectly well for years in one locality, and then failed, it seemed absurd to suppose that the climate or soil suddenly gave out; but a sudden incursion of a brood of root-insects was a cause that could have such a sudden effect.

Dr. Joseph Carson gave an account of vines in a city garden, doing well for several years, and then suddenly failing, while climate changes must have remained unchanged. He was satisfied, from many circumstances, that failure, whatever it was, proceeded in the first place through imperfect roots. —*Gardener's Monthly*.

CIRCULATION OF SAP.

As many of our farmers are just out of the sugar-bush the following will be interesting to them;

President Clark, of the Massachusetts College, has been experimenting on the circulation of sap, and the facts he noted have recently been made public. The sugar maple (*Acer saccharinum*) was taken for his experiments. It is well known now that the sap of plants is not at rest in the winter, but that moisture is absorbed continually, even the roots are thoroughly encased by frost. They probably thaw the icy matter by the aid of their natural heat, or in accordance with Mohr's theory, there are particles of vapor in the soil so finely divided that they do not freeze, except under a very low temperature; and hence the roots can avail themselves of this matter without any thawing process being required. At any rate, the absorption goes on all winter, and greater towards spring. The sugar maple becomes "tapped," or bored into, the sap oozes out, and is caught in vessels and boiled for sugar, which is left on evaporation.

Professor Clark finds that there is an average increase in quantity from its first flow till a maximum period is reached, and then there is an average decline. But there are interruptions from day to day, sometimes more, sometimes less; and what is the cause or causes of these fluctuations is, was his purpose to find. It is remarkable that steady cold or steady warm weather had the effect of lessening the flow, while the greatest amount of sap ran when there was warm days and cold nights. The whole stem structure is filled with the rising sap; but the north side of a tree gives out more, and continues two weeks after the south side is dry. This accords with Risler's recent experiments, which show that direct sun-light is a leading agent in evaporation; and thus on the south side evaporation will be greater than on the north, and there would be less left for the "tap." The quantity of sap flowing from different heights of the trunk was tested, and at twenty feet the greatest quantity was given out. Of course trees will vary in quantity given health and other peculiarities; but the average yield in an average size maple forest is sixty pounds of sap per tree, while as much as 1,400 pounds has been reported from one tree at Leverett. It does not appear that the tree suffers in the least from so heavy a drain on it. A very interesting phrase of the experiments refers to the pressure of the following sap. On the 11th of April it was the greatest, and was equal to sustaining a volume of water nearly thirty two feet high.

THE CURCULIO.

Mr. Dennis Melcher, a very intelligent farmer, west of Burlington, Iowa, recently informed President Brackett, of the Iowa Horticultural Society, that, having seen a paragraph going the rounds of the papers a year ago, to the effect that corn cobs, soaked in molasses thinned a little in water, and hung in plum trees, would prevent attacks from the curculio, he resolved to give it a thorough trial, and accordingly hung upwards of 50 cobs thus prepared in each of several trees, omitting some, that the effect might be observed.

Mr. Melcher declares that the experiment was completely successful, and that trees thus ornamented were loaded with plums, while the others were stripped, as usual. He further says that the tree having cobs hung on the lower branches bore the most fruit, and that the cobs were filled with white worms, who seemed to prefer them to the fruit. His theory is that the pests ascend directly into the tree after emerging from the ground, and that, if plenty of cobs are furnished them on the lower limbs they will go no further or higher up.

I remember that at the time this item was inserted in the papers, Mr. Riley undertook to ridicule it, as at variance with all the known habits of the insect. A trial was made in various places, but by none that I know of who made it as thoroughly as Mr. Melcher. He gives the results of only one year's trial, being entirely satisfactory, and with his experience to guide us so cheap an expedient is certainly worth full and exhaustive trial all over the country.

This mortal enemy of that splendid fruit, the plum, finds so congenial a home in our prairie soils, that even the laborious and log-continued system of haking trees, as recommended by most horticulturists, fails to dislodge him. Besides seriously injuring the trees in many cases, where careless laborers have to be employed to do this task. Very many fruit growers have consequently abandoned the plum altogether. —*Prairie Farmer*.

VARIETIES OF POTATOES TRIED BY AN ENGLISH FARMER.

At the meeting of the Midland Farmers' Club, Mr. Farndell said he had tried some 135 varieties of potatoes last year, and out of those he had selected 22 as the best sorts to be grown in the midland counties. Those for early cropping were three of the Ash-leaf varieties, Early Rose, Early Shaw, Giant King, and Breese's King of the Earlies. For second early crop, Jackson's Early White Kidney, Manning's Kidney, Dawe's Matchless, Breese's Prolific, Peerless and Climax, Early Don, Drummond's Prolific, Gryffe Castle, Dalmahoy. For late crop, Pater-son's Victoria, Snowball, Red Skin Flour Ball, Walker's Improved Regent, Old Dunbar Regent. There was scarcely any disease at all in those he selected. His own experience of potato growing was in favor of lightly plowed land, shallow planting and well earthing the rows.

In this list we see Breese's four choice varieties, and the Early Rose, a strong argu-

ment in favor of the advantages of the interchange of agricultural seeds between different and distant countries. Those four varieties had been introduced here by the Agricultural Emporium, and this season we have imported from England the Flour Ball. Of this variety Mr. Wise, an eminent English agriculturist, says: "With regard to the Flour Ball, he considered it was the very best potato grown."

APPLE GROWING IN NEW YORK.

The same authority says:

"Occasionally the apple crops of the western or lake counties of New York bring the owners large sums of money. Lying within the limits of Niagara county, and bordering on Lake Ontario, are 30,000 acres of land, all suitable for orchard purposes. The breezes from the lake keep up a steady temperature, cool in summer, and far from severely cold in winter, affording a climatic temperature of uniform degree. The orchards are uniformly well cultivated, and the apples are nearly always large, fair and in excellent demand. The varieties most popular are Baldwin, Rhode Island Greening, and Roxbury Russet. From one orchard of 19 acres, there were sold \$7,230 worth of apples; from another orchard of 140 Baldwin trees, there were sold 980 bbls. for \$325 per bbl."

To the north of the lakes and river the country is at least as good for the production of fruit. The neighborhood of St. Catharines, Grimsby, Niagara and that whole section is famed for its fruit; indeed the whole of Ontario produces food abundant in quantity and excellent in quality. The Canadian fruit growers bore off some of the most valuable prizes at the great American Fruit Exhibition last season, and every year large quantities of our apples are shipped to the United States, as much superior to those raised south of the line. —S.

HUNGARIAN GRASS.

The great value of Hungarian Grass seems to be as yet but partially known. Mr. T. of London township, last season saved over three tons of excellent hay from less than half an acre of ground. This season he has sown two acres. His stock, he says, prefer it to any other hay. He is careful to cut it when the seed is formed, but not ripe, as it, at this state of its growth, contains all its nutritive properties. His last year's crop of this grass was four feet high and very thick, as he sowed an abundance of seed lest the stems might grow too coarse.

In the London market, and indeed, throughout the Province, hay was sold at very high prices, owing to its scarcity. The same complaints reach us from Nova Scotia and the other provinces. Were farmers to sow more of their land with Hungarian Grass, it would help to meet this demand.

THE POTATO BUG.

The *Oshawa Indicator* says that a downtown gardener, by way of experiment, powdered his potato plants, which were covered with potato bugs, with common chimney soot. He was agreeably surprised to find that it killed every bug on the vine. If this is verified by other experiments, it will be good news for those who have a small potato ground and lots of bugs and soot.

Many of our readers have become tired and discouraged in trying to grow good cabbage. No sooner have the plants outgrown the attacks of the black flea, than a more destructive and dis-usting pest comes in the shape of a green worm, which penetrates to the very heart of the cabbage. We believe the best mixture yet known to destroy them is made of 20 parts super-phosphate, 3 parts air-slaked lime, 1 part carbolic powder. These three, mixed together and dusted over the heads, check the voracious habits of the green worms on cabbages better than any other remedy tried. As this compound acts as a fertilizer to the growing cabbage as well as a preventive against the insects, it may be used say once a week, and quite freely, while there are any worms on the cabbages. Rich ground, strong plants and good culture are the best means of keeping off lice from cabbage. There is no reliable remedy that we know better than those named. —*Ex.*

The Ontario Peat Company, said to have a capital of \$400,000, intends to commence operations on the Welland Canal peat beds at once.

BEWARE OF F

The Horticulture to planters of "A mistake by many, that shrubs, and the wood mould, from some once uses it for the new tree has ever been recommended chip manure mainly from fungi, which a little moist formed, it is totally preventing the tree or shrub

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