

convince most readers that the Orpington, as a utility bird, is better than the Wyandotte, and more profitable for the farmer.
WM. A. RIFE.
Waterloo Co., Ont.

GARDEN AND ORCHARD.

Niagara Peninsula Fruit-growers in Session.

The vital importance to our fruit-growers of organization for business is becoming more evident every year. To meet the situation, the Ontario Fruit-growers' Association, under the direction of the Minister of Agriculture, is encouraging the formation of local fruit-growers' associations, or local unions, in every fruit center. During the winter meetings are held, which are addressed by fruit experts, and plans are discussed and matured for the summer's business.

Acting on this principle, the Niagara Peninsula Fruit-growers' Association concluded on March 18th a very interesting week of meetings at the following places, viz.: Stony Creek, local directors, Erland Lee and Joseph Tweedle; Grimsby, A. H. Pettit and Harry Griffith; Beamsville, Rev. W. J. Andrews; Jordan Station, C. M. Honsberger and S. H. Rittenhouse; Queenston, Isaac Usher, Wm. Armstrong, and Charles Lowry; St. Catharines, C. E. Fisher, W. H. Bunting, and W. C. McCalla. In addition to these several other gentlemen were sent as delegates to speak and aid in the discussions, as E. D. Smith, of Winona; L. Woolverton, of Grimsby; R. Thompson, F. A. Goring, F. G. Stewart, W. M. Hendershot, of St. Catharines.

The chief speakers, however, were Mr. A. W. Brown, a fruit expert from Wyoming, Delaware, U.S.; Prof. Lochhead, of the Ontario Agricultural College, Guelph, and Mr. W. T. Macoun, Horticulturist, Central Experimental Farm, Ottawa. The attendance was very large at each place, and large numbers followed the speakers from one meeting to another, taking advantage of the H. G. & B. electric road. Spray pumps were shown by the Spramotor Co., the Niagara Gas Sprayer Co., and by the inventor of the Little Giant pump, a one-horse machine, taking its power from the cart wheel.

INSECTS.

Prof. Lochhead spoke on insects and fungi. He pointed out that the great increase of our insect enemies of late years was a natural result of the large plantings of certain trees and plants, which afforded them food. The conditions were not natural; they were artificial, and hence the need of artifice to keep these insects in check. The fruit-grower needs to know the life history of the various insects in order to properly apply the remedies. Some insects, for example, sucked the juices of plants, such as the scale insects, and the Aphidæ. These cannot be destroyed by poisoning the surface of the leaves with Paris green. They must be treated with lime, or sulphur, or whale-oil soap, or kerosene, or some such material as would either destroy by contact or stop up their breathing pores and strangle them. Other insects were leaf-eaters, such as the tent caterpillar, the cankerworm, the potato beetle, etc., etc., and these could be easily destroyed by poisoning the leaves with some solution of arsenic. Fungous diseases were to be destroyed by such materials as copper sulphate, lime and sulphur, etc., in various mixtures, of which the ordinary Bordeaux is so well known. Now, if we could succeed in making one solution that would do for all purposes, what a great saving of labor and of expense would result to the fruit-grower! Prof. Lochhead expressed the hope that the new liquid called "Limoid," with Bordeaux, would accomplish this. A deputation of fruit-growers from the Niagara District had waited upon the Hon. N. Monteith, Minister of Agriculture, asking that experiments be conducted along this line, and that the best spraying mixtures be made accessible to fruit-growers at reasonable prices, especially in those sections afflicted with the San Jose scale, for unless it is kept in check this insect will utterly destroy the orchards in Ontario. Prof. Lochhead said the Minister of Agriculture had consented to undertake this work, and had asked him to conduct the same. He therefore proposed to try experiments with (1) Limoid; (2) dust spraying; (3) soda, Bordeaux, and other mixtures. He would attempt to treat (1) black rot of the grape, (2) brown rot of plums, (3) leaf curl, (4) the cherry aphid, and other insects and diseases, and hoped for the active co-operation of all fruit-growers.

Prof. Lochhead warned growers of fruit against a common mistake in making Bordeaux by mixing together the milk of lime and the sulphate of copper before fully diluting each with the required amount of water. Such a course was certain to cause flakey bits, which would clog the nozzle of the pump. He also warned them against leaving the bandages for trapping the codling moth untouched during the season. They should be removed and the worms destroyed, otherwise the bandages were simply breeding places for increasing the mischief.

FUNGI.

In speaking of fungous diseases, Prof. Lochhead mentioned the black rot of the grape as one of the coming pests of the vineyard. If not already in the Niagara District, it would soon come (a voice, we have it), and if not treated it would destroy the vineyards. It had already destroyed the vineyards in the County of Essex, because the grape-growers there would not spray. To keep it in check, persistent spraying with Bordeaux was

necessary. It must be repeated several times during the season. Mr. Bunting, of St. Catharines, for example, had been badly troubled with black rot in his vineyard. He had succeeded in utterly destroying it, by persistent treatment with the Bordeaux. It should be applied (1) about the beginning of June, when the new shoots are 12 or 15 inches long, just before blossoming; (2) the first week in July; and these two are the most important treatments. Then repeat every ten days or two weeks, until August 1st, and rot will be prevented.

SPRAYING FRUIT TREES.

Mr. W. L. Brown, of Delaware, is a practical fruit-grower, an expert in spraying, and an eloquent speaker, and treated this rather uninviting subject in such a manner as to hold the closest attention of the audience for two hours at a time. We cannot do justice to his address on the details of spraying, and must be content to report a few prominent points. Spraying, he said, was a necessity to successful fruit-growing. It improved the sample of the fruit, it increased the yield, and it improved the healthfulness of the tree itself. The lime, sulphur and salt mixture he considered a sovereign remedy for San Jose scale, but it was one that would pay for the application whether there was scale or not, for it cleaned the tree of every enemy, whether fungus or insect, that was on the tree in its dormant state. To prepare this mixture he advised the following method: To two gallons of boiling water add slowly, with constant stirring, 20 lbs. of sulphur, thus making a sulphur paste. Put 40 lbs. best stone lime in barrel, add 12 gallons of boiling water, and quickly add the sulphur paste. Cover the barrel with burlap sacking for 25 minutes, to keep in the heat; fill up the barrel with warm water, and the last thing add 15 lbs. salt. Strain liquid into a spray tank, and spray on the trees at once, before the buds begin to open. This will absolutely control the scale. Mr. Brown emphasized the importance of procuring absolutely pure materials, and to do this he would buy them only from some responsible chemical company. To an inquiry as to the use of the salt, his opinion was that it made the liquid a little more adhesive.

The Limoid referred to by Prof. Lochhead, was a preparation by the Delaware Experiment Station, described in Bulletin 68. It was hydrated lime, and was used simply as a conveyor of kerosene, making what was called the K. L. mixture. One pound of Limoid would take up one quart of kerosene, or four pounds to a gallon. To make 100 gallons of the mixture, use 100 lbs. Limoid, and 25 gallons of kerosene, and 75 gallons of water, the Limoid not counting for bulk. This is for sucking insects. K.-L.-B. means K.-L., with Bordeaux added, and is a remedy for fungi. This is made by simply adding 75 gallons of Bordeaux instead of the 75 gallons of water; K.-L.-B.-P. meant kerosene, Limoid, Bordeaux, and poison, and was intended to destroy the leaf-eating insects also. This was made by simply adding Paris green or some other arsenical poison in the usual manner. This is a "Jack of all sprays."

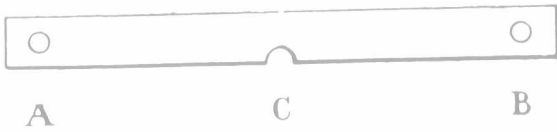
The application of the material is very faulty in many cases, and accounts for many reports of failure. The more carefully the material is prepared the better the effect. If Bordeaux is properly made two applications are in many instances as good as a dozen. The bitter rot is a great evil. It is coming into Ontario, and will spread through the orchards; it renders a large quantity of the product of the apple orchard worthless. It can, however, be controlled by the use of Bordeaux, if properly made, and applied about the 15th of August.

Co-operative spraying is the ideal thing. A local union can buy material wholesale, have the mixtures prepared uniformly in the best manner, and can own the best spraying machinery for quick and effective work.

To Keep Trees in Line.

To the Editor "Farmer's Advocate":

As the time of tree-planting is at hand, this simple diagram may prove a great help to those who have not seen it. The usual method is to stake out a plot, or even a long row, and see that the stakes are straight in



line. How provoking it is to find when you have pulled up your stake and dug the hole, that you can't get the tree just where the stake was; for an inch or two out of line makes an unsightly job. Take a board 8 ft. long, bore a hole in each end (A B in diagram), then cut a notch, C; now place the board with the notch C against the stake, then drive a pin or stake through the holes into the ground (the pins or stakes are a little less in diameter than the holes in board); you then lift the board off the stakes, and when the hole is dug ready to receive the tree, you place board on the pins or stakes, draw the tree into the notch, and leave it there until you have filled in around the roots, so the tree will not move either way. By this simple device you can commence anywhere on your plot, and if your stakes have been right, so will your trees be.

CHAS. GRASLEY.

Crossfield, Alta.

Pruning Fruit Bushes.

By H. S. Peart, B. S. A.

Among the things that should occupy the attention of the farmer and the fruit-grower at this time of the year, one of the first in importance is the pruning of fruit trees and bushes. In the farmer's garden, the bush fruits are very generally neglected, though the pruning which they require is simple, and can be done with comparatively little labor.

Raspberries.—The pruning of raspberries may be summed up briefly as follows: Remove the old canes after fruiting; thin out the weakest of the new canes, so that the row may not be too thick; head back the new canes to about three and one-half feet, so that good strong lateral shoots may be developed near the ground. Strong laterals may be headed back about one-half. In some localities where there is danger of the canes being injured during the winter, it may be best to leave the pruning until spring, but where there is no danger of injury from frost the work is as well done in the fall.

Blackberries and Thimbleberries.—These should be pruned much the same as raspberries, except that the new canes should be left somewhat longer, four to four and one-half feet being considered about right. It is generally advisable to prune blackberries in the early spring, as the canes are liable to freeze back during the winter.

Gooseberries.—Without care gooseberries become a tangled mass, which prevents the proper development and the easy harvesting of the crop. The fruit is borne on one, two and three year old wood; mostly, however, on the one and two year old wood. The aim should be to replace the three-year-old branches with good, healthy, new shoots very early each season. Six main branches, two of which may be replaced annually, is a good base from which to build the frame of the bush. Head back the new growth about one-third, and keep the bush just open enough to permit the easy harvesting of the fruit. If opened up too much there is danger of the fruit being injured by sun-burning.

Red and White Currants.—Currants are borne on the short spurs arising from the old wood, and near the base of the new shoots. Two-year-old canes produce the finest quality and the largest quantity of fruit, although some fine berries may be produced on the three-year-old branches. Train the bush to six main stems, two of which may be removed each season, and replaced by two vigorous young canes. All other new canes arising from the ground should be removed. Head back the two new shoots about one-half, and all other new branches one-third. Keep the head of the bush open enough to permit of free circulation of air, and to admit sufficient sunlight to ripen the fruit properly.

Black Currants.—The treatment of black currants does not materially differ from that of reds. The fruit is borne on one-year-old shoots, arising from older branches. As the bushes grow larger and stronger than the reds, it is well to leave about eight canes, renewing two each season. Head back the growth severely, to encourage the formation of many new spurs from the old wood for the production of fruit. Leave the head open enough to permit of free circulation of the air, and the entrance of sunlight to the center of the bush.

The Farm Garden.

One of the most important things about the farm and one of the most neglected is the garden.

If we are to go by the advice of physicians, we will find that to maintain health plenty of fresh vegetables are needful, therefore it is necessary that every farmer should have a good garden.

The best soil for a garden is sandy loam, but any well-drained soil, well enriched with farm-yard manure, and plowed in the fall, will do. Select, if convenient, a southern slope. In the spring it should be plowed again, rather shallow, and as early as the land is dry enough to work well. Then, in a day or two, if the weather be favorable, and the season far enough advanced, the planting may begin. Put in the lettuce and radishes first, follow with onions, beans, beets and so on. As to laying out the garden, do not sow in beds, but in drills, three feet apart, so as to give the horse cultivator room to work, as this will save more than half the labor, and there will be fewer weeds.

As to the variety of seeds to plant of the different vegetables, I would advise a beginner to leave the much-talked-of novelties alone, and stick to standard sorts, which can easily be found by perusing the pages of a seed catalogue. The best way for the farm gardener is to buy his seeds of some reliable seedsman, and not bother growing his own, as his time will be worth more than the money saved. I advise buying Dutch onion sets, instead of onions, as they will be to the busy farmer cheaper in the end.

I will give a short list of tested varieties of the leading vegetables for the benefit of the beginner. In beets, Crosby's Egyptian and Edmonds' Turnips; beans, pole, Lazy Wife and Wax Saddleback; cabbage, Jersey Wakefield and Danish Ballhead; sweet corn, Early Cory and Stowell's Evergreen; carrots, the Ox-heart or Guerande; cucumber, the White Spine; lettuce, Nonpareil; melons, Strawberry Muskmelon, and Cole's Early and Hungarian Honey Watermelons; radishes, Early Scarlet, turnip-rooted, and Rosy