

## CULTIVATION OF THE APPLE ORCHARD.

The apple is supposed to have been cultivated over 4,000 years. During that time much has been learned about tillage and general orchard management, yet, strange to say, in this day and age the average Canadian apple orchard is handled in a shockingly unintelligent and thriftless way. To be sure, there are creditable exceptions, and some whole districts, notably the Annapolis and Cornwallis Valleys, of Nova Scotia, are famous examples of approved culture. Of late years, some few sections of Ontario are waking up to the possibilities that lie in improved orchard practice, but it is probably within the mark to state that nine out of ten apple orchards in this Province bear fruit in spite of the treatment to which they are subjected. Pruning, spraying, fertilizing and cultivation are commonly neglected or indifferently performed. Our present purpose is to consider cultivation.

There are many ways of handling orchard soil, but only two proper ones, and one of these should be regarded as of but limited application. First of all, let us mention four prevalent wrong methods. These are grain-raising, cropping to hay, pasturing sheep, hogs or poultry, and raising hoed crops. The first two methods are the worst; the latter ones have some compensating features, and, while inadvisable as a general practice, they are not wholly bad. The advantage of pasturing is that it destroys worm-infested, fallen fruit, thus waging a war of reduction on the troublesome codling moth; it also distributes some manure on the land. The raising of hoed crops is preferable to cropping grain or hay because it involves early and thorough spring pulverization of the soil and subsequent surface tillage. Its special disadvantage is that the cultivation is liable to be continued too late in the season, thus prolonging wood growth, and resulting in the production of much tender wood that is liable to winter-kill. The stirring of the soil incidental to the digging of a crop of potatoes has been credited with thus prolonging growth and resulting in considerable killing-back during the ensuing winter.

Aside from and beyond the specific objections urged against the above lines of orchard practice, the whole four are bad, because they exhaust the soil of moisture and plant food. In fact, the first three make their heaviest demands during spring and early summer, when the tree is in special need of moisture and plant food to produce growth and fruit. While any attempt to leech from the orchard a crop other than fruit is to be strongly deprecated, where it is resorted to a short rotation of hoe crop, grain and clover is probably better than to continue any one indefinitely.

But the orchard soil, after the trees come into bearing, should be reserved as an exclusive feeding ground for the tree-roots. A bearing orchard makes a severe annual tax on the plant food in the soil, and during a considerable part of the season is liable to be heavily handicapped by lack of moisture as well, unless a liberal supply is conserved by frequent surface cultivation designed to preserve a loose earth mulch. This brings us to mention the two proper methods of orchard treatment. One is "sod culture," the other is clean cultivation.

In the sod-culture method, the practice is to mow the grass which grows and spread it about the trees as a mulch. This, on rotting down, returns to the soil the fertility that has been abstracted by the growing vegetation. It is claimed that sod-culture results in the production of higher-colored fruit. Its chief advantage, however, is its adaptability for hilly or broken land.

On arable soil, cultivation gives better results in the main. It is commonly and quite advantageously modified by sowing in July a catch-crop, such as clover, buckwheat, rape, oats or rye, to be plowed under the following spring. Under this system, tillage should commence as early in spring as the soil is dry enough to work well, by plowing not more than five inches deep in a young orchard, and not over four in an older one. In the case of an orchard that has been long in sod, a less depth is advisable, else the tree may sustain a severe shock by the mutilation of its many small feeding roots that have gradually developed near the surface. The plow should be immediately followed by roller and harrow, and after that some operation of tillage, such as light disking or harrowing, should be performed after every rain of any account, in order to prevent the formation of a crust. The early cultivation improves the physical condition of the soil by breaking up the particles, thus presenting a greater feeding surface to the roots and increasing the water-holding capacity of the soil. The subsequent shallow cultivation not only keeps down weeds, but preserves a dry earth mulch, which checks evaporation of moisture and acts as a filter to admit air into the soil and subsoil. Moisture and air, combined with heat, are the necessary conditions for the transformation of inert fertility into available plant food. Thus we have two essentials, moisture and plant food, supplied in more or less abundance to the

roots of the trees, though, be it understood, that occasional manuring or fertilizing is requisite for best results, even in a cultivated orchard. In July, cultivation should cease, so as to arrest growth and induce maturity of the new wood. This result will be all the better secured, and at the same time a supply of surplus fertility will be stored up for future use, by sowing a cover crop; but of this, more in due season.

The thousands of apple orchards in sod all over the country are a standing disgrace to Canadian agriculture. They can almost always be told by the yellow, sickly color of their foliage, and the small, uncertain quantity and inferior quality of their fruit. It is false economy undertaking to eke an extra crop off the orchard. It requires a certain amount of nourishment to keep a tree alive. To crop the orchard is generally to deprive it of the extra moisture and plant food that should go to the production of a profitable harvest of fruit. The apple orchard will pay handsomely, if given a chance, but the trees must not be planted too thick, and, on reaching bearing age, they should, ordinarily, have the ground all to themselves, with liberal cultivation and enrichment besides. Occasional seeding down may become necessary in such an orchard to check excessive wood growth and induce fruitfulness, but most of our fruit plantations require more working-up.



Bad Orchard Practice.

Weeds of all kinds, almost as high as the tree trunks, sapping the soil of moisture and plant food that should go to the trees. The foliage in this orchard was of a pale-yellowish tint.

## THE FARM BULLETIN.

## THE ONTARIO AGRICULTURAL DEPARTMENT ACTIVE.

The Ontario Department of Agriculture is preparing for an energetic campaign during the spring and summer months. Several of the branches have already completed their plans; others have theirs under way.

## TO ENLARGE THE WINTER FAIR BUILDINGS.

The live-stock branch is busy with plans for the enlargement of the accommodation for the Provincial Winter Fair at Guelph. Twenty thousand dollars was voted for this purpose at the session of the Legislature recently closed. The City of Guelph is making a grant of \$10,000 for the same purpose, so that there will be \$30,000 available. The plans are not yet completed, but will be ready soon. It is probable that this money will be expended in the erection of a building paralleling the present one, and located at a sufficient distance to the north of the old building to admit of light to both structures. By joining the ends with cross structures an open court would be left in the center, accessible by a driveway under the second story, either on the north side or on one of the ends.

## THE FIELD-CROP COMPETITION.

The Superintendent of Agricultural Societies reports forty entries in the field-crop competitions, as compared with ten last year. This work has been greatly enlarged this year, and one hundred entries could be taken care of. The time for receiving entries from the secretaries of the societies has been extended to May 24th. The success of Ontario agriculture depends primarily upon the field crops, whether the product is to be sold off the farm or fed to live stock. Every effort to increase the yield and improve the quality of the crop should be encouraged. Last year the ten societies represented in their entries a total of 3,000 acres of crop. There was an average of twenty members to each entry, or fifteen acres for each individual farmer taking part in the contest. Figured on this basis, and an average of twenty members for each society, there is at date of writing a total of 12,000 acres represented in this year's competition, which will probably be increased to 15,000 acres when all the entries are in. The effect of this cannot but have a wholesome effect in improving the general farm crops of the country. A minimum of five acres is fixed for every individual entry.

The seed fairs held under the auspices of the Agricultural Societies Branch have been well attended. The spring stallion shows have so far proven very successful this spring. There are several more yet to be held. The judges sent out by the Superintendent to these shows, have, judging from the reports received, given good satisfaction.

## FARMERS' AND WOMEN'S INSTITUTES.

The Farmers' Institute Branch is preparing for its summer campaign. Five hundred Women's Institute meetings have been arranged for. The ladies who are to address these meetings and conduct demonstration work have recently completed a two days' session at the Macdonald Institute at Guelph, where, under the tutelage of Miss Watson, they received pointers and suggestions as to the best topics to discuss, and as to the best methods of making the meetings effective in improving the home life on the farm. Several new speakers, some of them with experience in this line of work in other countries, have been secured. These give promise of being able to render valuable service in Women's Institute work.

The Dominion and Provincial Departments of Agriculture will co-operate again in the holding of seed meetings. Thirty-five meetings have been arranged for, of which a fuller announcement will be made later. Messrs. T. G. Raynor and T. H. Mason, of the Dominion Seed Division, will be the chief speakers at these gatherings.

A number of the annual meetings of Farmers' Institutes, to be held in June, will be addressed by members of the staff of the Ontario Agricultural College.

The organization of Farmers' Clubs has progressed very rapidly during the past winter. While organized under the auspices of the Institutes, they are in a sense independent, in that they elect their own officers and manage their own affairs.

## ONTARIO FRUIT FOR EXHIBITION IN LONDON.

The Fruit Branch has recently forwarded a special exhibit of Ontario fruit to the Franco-Anglo Exposition, to be held in London, England, from May 1st to October 31st. The Dominion Government is making a display for Canada, and will have a Canadian building erected for the purpose. The Ontario exhibit will not be placed in this building, but in the building erected by the Grand Trunk Railway Company. In the Dominion display the Provinces will not be individualized, and the Ontario Department thought it wise to make a special show of fruit from Ontario.

The exhibit consisted of apples in the natural state, and wax models of peaches, plums, pears, cherries, and other small fruits grown in Ontario. The apples were put up in bushel boxes of standard measurements, and were of the finest quality, selected from last season's crop. There were some twenty varieties in all, comprising Spies, Kings, Greenings, McIntosh, Russet, Mann, Baldwins, Seeks, Canada Reds, Wagners, Pewaukees, Starks, Ben Davis, Gano, and others.

Mr. P. W. Hodgetts, Secretary of the Fruit-growers' Association, accompanied the shipment to St. John, and saw it safely in the cold-storage compartment of the vessel.

## INCREASE OF SPRAYING.

Considerable spraying is now being done in the country. Some of the co-operative Fruit-growers' Associations are making special efforts in this direction. The Norfolk County Association has purchased 30 additional spraying outfits this spring for the use of its members. This organization uses a power spraying outfit operated by hand. The pump is operated by a man in the tower. The plan has proven very effective. The St. Catharines Cold-storage and Forwarding Company has purchased 45 additional outfits, and is carrying on a more thorough spraying campaign than ever this season. These two associations, and other large organizations, purchase their spraying material in car lots, thus saving materially in the cost.

The Department is continuing the bonus to the smaller spraying associations this year, but on a somewhat different basis. Last year a straight bonus of \$50 each was given where spraying was carried out as directed. This year so much per acre will be given, and the man who does the best spraying will get the largest bonus. The grant for this work is \$6,000. Last year there were 80 applicants for the bonus, whereas the funds appropriated for this purpose were sufficient for 100. The bonus was only given for power spraying. This year it will be given for both power and hand spraying. The inspectors endeavor to visit each applicant for the bonus three times during the season, twice when spraying is being done and once when the fruit is on the trees.

The fruit crop prospects this season so far are exceedingly bright.

## BEES HAVE WINTERED WELL.

Mr. Hodgetts, who is also Secretary of the Ontario Beekeepers' Association, reports bees, generally, as having come through the winter in good condition. Beesmen expect a big season. In addition to meeting and arranging a scale of prices for honey, the association's committee, appointed for this purpose, will this season prepare a list of beekeepers who have surplus honey for sale and send it to prospective buyers. At least as many foul-brood inspectors will be engaged this season as last, and probably one or two additional.

There were two cases of black brood reported last year. This type is more serious than the ordinary foul brood, and care will be taken to stamp it out.