

ate potatoes and the Extra potatoes. It was, therefore, 1913 to use only these two. The same two varieties in 1915.

variety of potatoes has given acre of all the varieties Ontario Agricultural College experiments for the past nine and some people object to The Extra Early Eureka are popular with some growers to secure early potatoes market. In the co-operative Davies' Warrior gave an extra Early Eureka of 95.9 co-operative tests in 1913 average of 134.11 bushels a ka of 125.76 bushels per e seen that the varieties lds per acre in each of the ls for 1915 are practically and 127 bushels per acre t should be remembered

ario in the past year was ng to the reports of the es, the average yield of vince was only 76 bushels, r Ontario for the past 34 which have been grown at and the Extra Early Eureka rot, the average for two cent., while that of a few per cent."

#### SEED POTATOES.

O.A.C., discussed potato A glance at the figures au of Industries regarding ear makes us realize more recognized by every farmer ario that the potato crop age in regard to quantity. the average yield per acre he last thirty-four years t year (1915) the average Ontario was 76 bushels, 1915 was over 5,000,000 yearly crop for the last notwithstanding the fact potatoes was much above was to some extent due nditions were such that ere stimulated at the at the potatoes terded cause, however, was an Ontario of the fungus and Rot. It is a cono place the reduction of caused by this disease at 0c per bushel, would be

atoes is a fungus disease and the tubers. It causes a rotting of the tubers. diseased leaves during of spores are produced. wn through the soil and se is carried over from erted tubers. Many of e are thus readily recogar sound and cannot be in a year following an of the seed potatoes will ry difficult matter this potatoes which are not fungus. This does not have an epidemic of depend upon climatic comparatively dry summer, little or no potato rot; et summer, the potato se than in was it 1915. potato rot are brought ected seed potatoes and

ve going to avoid using one would be inclined o localities where the s year. Those who are potato rot fungus know year after year without therefore that seed from y free from rot the pre infected, and that the o an epidemic of rot if

y by means of which e from infection can be eties of potatoes which and Rot. Varieties of gard to their suscepti-ent and extensively State and Rural New ceptible to rot, while g. The results of the Department of Field arative susceptibility to rot are in this con- In 1915 two varieties ot under similar con-experiments for five at those varieties e Davies' Warrior, Beauty and Hulborn's

Abundance; and those most subject to rot were Early Rose and Beauty of Hebron."

Prof. Howitt strongly advised those who are anxious to avoid loss from potato rot to select varieties which experiments have shown to be the least susceptible to the disease, and, in addition to this, to spray thoroughly every year.

#### SWEET CLOVER.

Prof. Zavitz opened the discussion on Sweet Clover describing the white-flowering plant as a slow grower the first year, but a rapid grower the second season. He went away back to the year 1899, and, according to his figures, Sweet Clover yielded less per acre for pasture than either Common Red or Alsike, and the report stated that the stock refused to eat it.

Prof. Fulmer stated that analyses showed Sweet Clover to contain as many feed nutrients as other legumes.

It was brought out in discussion that all the cattle on some farms had been found to eat it readily, and that the yield was heavy and the effect of the crop on the soil beneficial. There is room for much more work with this crop, about which there is such a difference of opinion.

Morley Pettit discussed the plant from the viewpoint of the honey producer, claiming that it was not always considered a valuable honey plant.

#### EXPERIMENTS IN BEE-KEEPING.

Four hundred and twenty-one experiments were conducted in Apiculture in 1915—Covering: Swarm Control, Spring Management, Methods of Introducing Queens, Combless Packages for Transporting Bees, Wire Cloth Bee Escapes, Wintering and Special Experiments with Foul Brood. Those who experimented owned 14,808 colonies. By holding the colony together swarming was prevented in the production of extracted honey. In comb honey production artificial swarming meant more honey and less work. The fasting method of introducing queens was successful and so was the smoke method, but Morley Pettit, who presented the report, cautioned that all details must be carefully looked after. The shipping of bees in combless packages had been found practicable, and bees were successfully wintered outdoors in the four-box hives.

#### ELEMENTARY AGRICULTURE IN SCHOOLS.

In the absence of Prof. S. B. McCready, his paper on Nature Study and School Gardening was presented by J. E. McLarty of the O.A.C. It simply outlined the work as Prof. McCready left it.

Dr. Dandeno, the Director of Elementary Agricultural Education in Ontario, discussed the subject, offering little new on the problem, sticking to the old belief that the country must be made a better place in which to live and the teachers must have a more thorough agricultural training.

#### FARM ACCOUNT NG.

The meeting was favored with an excellent address by P. E. Angle, B.S.A. of Simcoe, Ont., on farm accounting. Mr. Angle is no theorist. He is a practical farm manager who has made a success of a big farming proposition through system and efficiency. Efficiency, according to Mr. Angle, should be the aim of all farmers. Business methods are nothing more than the best methods to assist to greater profit or to obtain the end in view. Changes in farming conditions have made it imperative that the farmer do some cost accounting. Increased production does not necessarily mean increased profit. The farmer must get at the difference between what is taken in and what is paid out. System means crop rotation, increased fertility, fewer fences—all the things that aid in promoting efficiency. There must be system in labor. The farmer must plan ahead. Every competent farmer should be able to figure out a plan for the year. He should be open to new ideas. Mr. Angle referred to the tool bags which each of his teamsters carries to the field with him each day with a complete set of tools, so that if breaks occur no time is lost running back to the buildings for wrenches, wire, etc. The idea was taken from a similar tool-bag used by the Bell Telephone Co. A belt similar to a lineman's belt was also devised to carry pruning tools, so that the pruner always had them handy.

There is a way to do everything. Mr. Angle described how their spray tanks are filled in the orchard, never leaving the tree-row, by the use of supply tanks and compression.

And accounts must be kept. In these labor is the first consideration—man-labor and horse-labor. The speaker produced some forms for loose-leaf book-keeping as practised on his farm, and also an ordinary grocer's bill book in triplicate, in which transactions are entered as made. It requires work to keep these books on man time and horse time, but nothing of value is accomplished without work. It was one of the best addresses of the meeting, and interest in the ruled forms for bookkeeping was shown after the meeting adjourned.

A. S. Ma, nard, of Chatham, led in discussion. He made some rather strong statements, most of which were humorously taken by his hearers. He believed that the gross returns from the farm should be each year 25 per cent. of the original cost and the net pr fit not less than one-third, and should be one-half of the gross returns. His advice was: "Never buy anything until you need it."

#### FINANCIALLY STRONG.

The report of the Treasurer showed the finances to be in good condition, with over \$1,500 on hand. An extra grant of \$1,000 was given by the Government this year.

#### EXPERIMENTS IN WEED ERADICATION.

Prof. J. E. Howitt gave the results of experiments in weed eradication. These experiments have now been conducted for four successive years. The weeds experimented with are Perennial Sow Thistle, Twitch Grass, Mustard, Bladder Campion and Ox-eye Daisy. Five experiments in all have been tried, viz., the use of rape in the destruction of Perennial Sow Thistle; the use of rape in the destruction of Twitch Grass; a method of cultivation for the eradication of Bladder Campion or Cow Bell; spraying with iron sulphate to destroy Mustard in Cereal Crops; a method of cultivation for the destruction of Ox-eye Daisy. Some fifty-eight farmers have co-operated in this work during the past four years. These experiments have not been so successful this past year as in former years, but this is due to the exceedingly wet weather of the past summer preventing the carrying out of the experiments according to directions. Those experimenters, however, who, in spite of the bad weather, were able to give the experiments a fair trial report results which confirm those of the past three years. The results of the four years' co-operative weed experiments show:—

1. That good cultivation, followed by rape sown in drills, provides a means of eradicating both Perennial Sow Thistle and Twitch Grass.

2. That rape is a more satisfactory crop to use in the destruction of Twitch Grass than buckwheat.

3. That rape gives much better results in the eradication of Twitch Grass and Perennial Sow Thistle when sown in drills and cultivated than it does when sown broadcast.

4. That thorough, deep cultivation in fall and spring, followed by a well-cared-for hoed crop, will destroy Bladder Campion.

5. That Mustard may be prevented from seeding in oats, wheat and barley by spraying with a twenty per cent. solution of iron sulphate without any serious injury to the standing crop or to the fresh seedlings of clover.

#### THE IMPORTATION AND DISTRIBUTION OF NOXIOUS WEED SEEDS IN ONTARIO.

Geo. H. Clark, Dominion Seed Commissioner, presented the report on the Prevention of the Importation and Distribution of Noxious Weed Seeds in Feed Grain and Screenings.

Under the present conditions of international grain trade, it is not to the advantage of the grain grower whose land is foul with weed seeds to clean his oats or barley before sending it to market. To clean his feed oats would entail a dockage ranging from 10% to 20%, and since the Ontario feeders will pay an advance in price of not more than 5% to 10% for the cleaned oats, it is to the advantage of the Western grower to ship his weed seeds to the Ontario feeder. These feeders have not yet learned that 10% or 15% of mustard and other weed seeds mixed with feed oats or chop feed are not only useless as a feed, but are actually harmful to the health of livery horses or dairy cattle. The common spread in prices between No. 2 Canada Western oats and the lower grades of feed oats available in the market is about one-half of the difference between the actual feeding value of these grades, and this because of the unwholesome nature of the weed seed content of the lower grades. Efforts have been and will continue to be directed toward securing better methods of cleaning the grain in the Prairie Provinces at the time of threshing; but progress in that direction will of necessity be slow so long as the Ontario feeders and feed manufacturers continue to buy for feeding purposes grain that is badly contaminated with noxious weed seeds.

It is important that Ontario feeders should more clearly understand the actual value for feeding of the cleaned grain as compared with the lower grades that are polluted with weed seeds of all kinds. When the demand for this grain makes a sharp discrimination in price between the clean and the unclean, then it will become unprofitable for the western grower to ship his weed seeds to Ontario.

A representative carload was obtained by the Seed Branch and provided to the Experimental Farms Branch at Ottawa for feeding experiments. The experiments show that in the practical process of separating screenings, the finer weed seeds that were capable of passing through a 1-14 inch perforated zinc screen were not only useless as a feed, but were deleterious to the health of all kinds of stock, except perhaps sheep. After the fine weed seeds have been removed, the balance of the screenings, when ground, make a wholesome feed for all kinds of stock with a utility value equal to, and for some purposes greater than, bran or chop feeds made from coarse grains.

Following these experiments and the recommendations made as a result of them, the government terminal elevators have adopted the plan of separating out and destroying all of that part of their screenings that would pass through a 1-14 inch perforated zinc screen. The balance of the screenings, which consists largely of wild buckwheat and small broken grains of wheat, are ground in simplex grinders to make sure that the vitality of all seeds is destroyed. The feed so manufactured is now available to the public. It is the property of the government terminal elevators and the revenue derived from it is used for the maintenance and operation of the elevators. It is the cheapest feed I know of in the market to-day. At the present time private elevator interests are carefully watching the operations of the government terminal elevators in the handling of their screenings. If the results indicate that larger returns are to be obtained from their elevator offal by following these methods, then I have no doubt the practice will become more general. This year probably 150,000 tons of grain screenings will accumulate at the terminal

elevators at the lake front, and while the great bulk of this is exported to the United States, considerable shipments are coming to feed manufacturers in different parts of Ontario.

A lively discussion followed. Prof. Howitt brought up the deficiencies of the Ontario Weed Act, and introduced the same suggestions for its improvement that were brought out last year. Finally, Mr. Clark moved this resolution, which was carried: "That the Experimental Union memorialize the Hon. Jas. Duff, Minister of Agriculture in Ontario, to consider the advisability of amending the Noxious Weed Act, or other law, to declare unlawful the sale and distribution of feeds in Ontario containing more than two per cent. of weed seeds which will pass through a screen 14 meshes to the inch."

#### CORN, THICK OR THIN. FOR SILAGE.

Prof. Fulmer read a paper on the feeding value of corn, based on work described in Henry's Feeds and Feeding. It was pointed out that the riper the corn got the more carbohydrates it contained. Also that thick sowing in rows gave higher yields of feed nutrients than planting in hills. This bears out our own work at Weldwood this year.

In discussion, it was brought out that the corn sown in drills, provided it has the same number of days to mature as hill-planted corn, will be equal to the hill-planted in maturity, and even though it has no ears, this year's analysis shows it to be of equal feeding value. Remember, it must be mature. Because it is sown thickly is no reason for anyone to believe that it will not mature. Give it the same number of days that the corn planted in hills gets, and be sure to give it time to ripen, which it will do even though it hasn't an ear.

#### MATURE AND IMMATURE CORN FOR SILAGE

Prof. G. E. Day outlined experiments now in progress at the O.A.C. on mature and immature corn for silage. So far as the test has gone, ripe Longfellow is giving much better results than immature Mammoth Southern Sweet in feeding trials on dairy cows. This has been generally believed for some time. These tests, while still incomplete, show a decided advantage for the mature corn. The results of this test will be more thoroughly gone into in next week's issue. Again we state that these results are not an argument against sowing thickly in the row, because, by sowing early and allowing time, the corn will mature in the thickly-sown row. In fact, it should mature as quickly as in hills if it is sown thickly enough. Look for Prof. Day's results in full in next week's issue. They are valuable. And we believe further work will bear out his findings. In both thick and thin seeding and mature and immature corn for silage further work is urgently required.

#### SEEDS FOR 1916.

In the absence of W. J. W. Lennox, Mr. Clark discussed the outlook for seeds in 1916. Although the quality may be somewhat below average, no shortage is predicted in spring wheat, oats and barley. Rape and vetch and beans and peas will be scarce. Alfalfa seed will be scarce. Red clover seed is very scarce and will be unusually high. Alsike is in fair supply, but will be high, as more will be used in place of other clovers. Timothy seed in quantity and quality is uncertain. Seed corn of the best quality promises to be scarce. There will be plenty of mangel seed, but Swede turnips will not be plentiful. There will be some shortages in garden vegetables of certain kinds.

#### FERTILIZER TESTS.

In bulletin form Prof. Zavitz outlined the results of fertilizer tests.

Complete fertilizer with oats gave an increase of 9.8 bushels per acre at a cost of 42 cents per bushel.

Muriate of Potash with corn gave an increase of 1.2 tons per acre at a cost of \$3.33 per ton.

Nitrate of Soda with mangels gave an increase of 5.9 tons of roots per acre at a cost of 81.4 cents per ton or 2.5 cents per bushel.

Complete fertilizer with swede turnips gave an increase of 5.4 tons per acre at a cost of 78.5 cents per ton or 2.4 cents per bushel.

Complete fertilizer with potatoes gave an increase of 3.8 bushels per acre at a cost of 11.2 cents per bushel.

Complete fertilizer with winter wheat gave an increase of 5.2 bushels per acre at a cost of 82 cents per bushel when applied in the autumn and an increase of 8.3 bushels per acre at a cost of 51 cents per bushel when applied in the spring.

#### WHAT OF FRUIT-GROWING?

A part of the last afternoon was given over to the discussion of fruit-growing in Ontario. Prof. W. T. Macoun, of Ottawa, stated that he believed that a good farmer can make more money out of fruit than a poor fruit-grower can. In his opinion there is no danger of over-production of the highest possible quality of fruit. There is always danger for the grower of poor fruit. Apples, in his belief, would be sold on their merit. He advised growers to locate near a large local market and sell fruit locally. He believed the diversified fruit-grower had the best chance of success. Summer apples pay close to town, and small packages generally prove most profitable. Variety is most important. We have many good varieties, too many poor varieties, and no ideal variety. There is no good reason why we should not have apples as good as the Wealthy, as free from scab, suitable for all seasons. He pointed out the difference in yields from individual trees, citing two McIntosh trees, one of which in 18 years has yielded almost twice as many apples as the other. The one that bore heavily first kept it up