

is usually done early in May. From experience at Guelph a larger yield of seed has been produced in this way than where the roots were planted in the spring.

For commercial purposes the plants growing seed are usually cut when about two-thirds of the seed has turned brown. These are placed in small stooks and threshed when dry. The seed may be threshed with an ordinary grain thresher but in a small way it is easier to strip it from the plant early in December and later in the month secure the seed that matures at a later date. It is important to secure the seed before it is damaged by frost as this may injure germination. As a result of six years' work at the College an average of 6.6 ounces per plant for mangel seed was obtained from a number of the best plants each year. An average yield of carrot seed per plant is a little less than two ounces and from Swede turnips only about four-fifths of an ounce per plant.

In order to get at the germination of Canadian-grown mangel seed thirteen separate tests were made in six years, and Ontario mangel seed gave a particularly high percentage of germination in 1909, 1911 and 1913 and a comparatively low percentage in 1912, and 1914. This is in comparison with imported seed. In the average of six years the Yellow Levianthan seed produced at the College gave a higher percentage than seed of the same variety from any other source. Ontario-grown mangel seed has made a comparatively high record in germination, and has by actual test surpassed the imported seed in yield of roots per acre in average tests in five years in which the number of plants used was comparatively equal.

C. C. Rebsch, of Port Rowan, continued the discussion on this subject.

#### GROWING OF VEGETABLE SEED.

The growing of vegetable seed was the subject discussed by S. Johnson, of the Department of agriculture, Toronto. His topic was very thoroughly threshed out at the Ontario Vegetable Growers' Association Convention early in November, a report of which has already appeared in these columns. Mr. Johnson made the statement that not five per cent. of next season's crop or any other crop of vegetables grown by market gardeners or vegetable growers of this province will be grown from seed produced by themselves, first, because gardeners and vegetable growers have not the time to spend in carrying on the necessary operations of seed growing. The cost of labor is high and care must be taken in selecting, staking, cutting, drying and threshing. He did not think that a vegetable grower could afford to pay a competent man to look after the seed-growing end of his business. Threshing and cleaning machinery are all expensive and when some vegetable growers cannot find capital to adopt improved methods of growing they certainly cannot be expected to purchase these implements. Besides this, the average vegetable grower works on a small farm of about ten acres and has not the room to give sufficient distance between varieties to prevent cross fertilization. Therefore, we must depend on some one who will grow vegetable seeds on a large scale and make a business of producing them as a specialty leaving the production of vegetables to those already engaged therein. The following list of varieties is recommended by Mr. Johnson as standard among the vegetable growers around Toronto.

Beet—Early Flat Egyptian, late Detroit Dark Red Eclipse. Cabbage—Early Round Copenhagen Market Early pointed Wakefield, late Short Stem, Ball Head. Carrots—Chantenay. Celery—Early Paris Golden, White Plume Winter, Winter Queen. Corn—Golden Bantam, White Corn. Lettuce—Grand Rapids, Big Boston. Melons—Rockyford Type, Paul Rose, Petosky. Onions—Southport Globe, Yellow Danvers Globe, Yellow Red Wethersfield Red. Peas—Early Gradus, American Wonder late Stratagem. Tomatoes—Red Earliana, Chalks Jewel, Red Rock; for factory use, Stone Ignatum. A. McMeans of Wheatley, continued the discussion on the growing of vegetable seed.

#### THE CANADIAN SEED GROWERS' CONVENTION.

Tuesday morning was given over to the annual convention of the members of the Canadian Seed Growers' Association resident in Ontario. At a meeting the previous day a committee had been appointed to formulate plans for the establishment of what finally came into being as the Western Ontario Seed Growers' Association, an association formed to aid in the production and dissemination of high-class seeds with members, bona fide seed producers, who will put out seed guaranteed as to quality. The officers of the new association are G. H. Clark, Seed Commissioner, Ottawa; Prof. C. A. Zavitz, O. A. C., Guelph; A. MacKinney; Fred Foyntson; and R. W. Wade, Sec.-Treas. Guelph Winter Fair. The new association is to commence business at once.

#### THE SEED CENTER.

Will Barrie, of Galt, Ont., Secretary of the Galt Dawson's Golden Chaff Seed Wheat Centre,

outlined before the meeting the work of the seed centre, and advocated threshing from the field or the use of small threshers operated by six or eight horse power gasoline engines or electric power, as the case may be, in order to overcome the all too prevalent means of distributing foul weed seeds by being carried from farm to farm by the large threshing outfits commonly used in Ontario. He made the statement that from selected seed on their own farm they have been able to get from ten to twelve bushels per acre, and forty cents per bushel more in price for wheat than was the case with fairly good seed but not specially selected.

Great interest was taken in the address of Ross Martindale, of York, Ont., Secretary of the Grand River Alfalfa Seed Centre, which was organized at the former place on July 1st, 1913. Haldimand County with its heavy clay loam soil, and rolling topography is especially well adapted to growing alfalfa. The crop has been produced on these farms for the past fifty or sixty years, and there is every reason to believe that the first seed sown was of the variegated variety. This, next to Grimm's alfalfa, has proved most hardy in Ontario. The object of the Seed Centre is to encourage the production of hardier strains of alfalfa, and by means of co-operation to market the same to best advantage. Accordingly, a bushel of Grimm's seed was procured this year, and six acres have been sown from this which promise well. Only twelve members are taken into the circle, the speaker believing that a small number is preferable, because there is less expense connected with the work, it is convenient and easy to control, and there is no difficulty in members getting to the meeting. Last year 63 bushels and 33 pounds of seed was sold, nearly all testing number one. The average price for the seed was \$20.00 per bushel, and the

gin with plenty of capital, and always have money on hand to run a cash business.

#### THE CORN SITUATION.

W. J. W. Lennox in a brief address outlined the seed corn situation in Ontario. The main efforts of the Department at the present time are put forth to encourage the sale of corn on the ear. Too much seed corn is sold, in Ontario, shelled in bulk, and while a great deal of it is of high quality considerable is of only questionable value and should not be relied upon. He also believed that we had too many varieties of corn in Ontario, and recommended in Dents, Wisconsin No. 7, White Cap, Golden Glow, and Bailey, and in Flint, Longfellow, Compton's Early and Salzer's North Dakota.

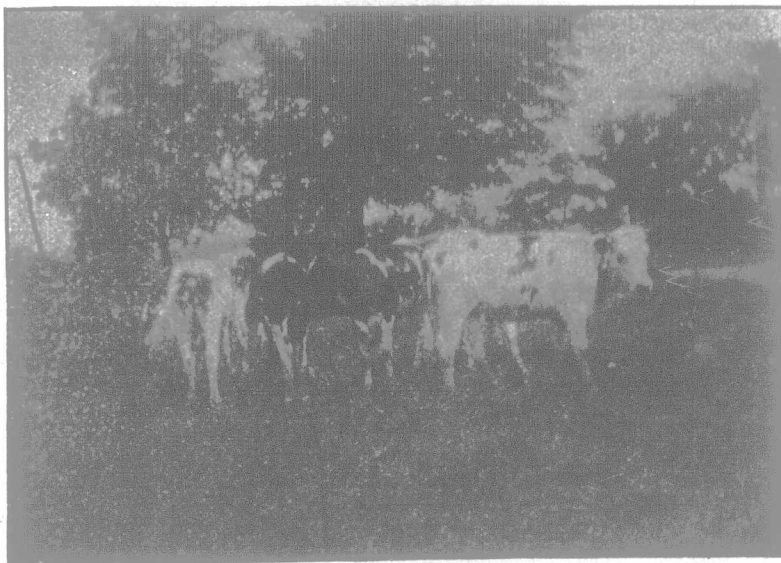
A number of papers and addresses were given by District Representatives of the Ontario Department of Agriculture, outlining some of the observations they had made during the past year when inspecting field crops in their respective localities. P. S. D. Harding, of Perth, Ont., I. B. Whale, of London, Ont., G. R. Green, of Woodstock, Ont., and C. Main, of Frontenac, each had some good work to report. The outstanding feature of these observations was that farmers are beginning to become interested in the work the District Representatives are doing towards better seeds, and see the value of seed selection and greater care in caring for their seed to keep it pure and free from weed contamination. Each man showed new problems developing, which make it necessary to continue experimenting year after year in order to find out just what each particular locality requires in the way of variety. It was in all a very interesting meeting.

#### THE LIVE-STOCK SITUATION.

"Live-stock Conditions East and West" was the big subject assigned to four well-known live-stock men on Wednesday

afternoon. Prof. M. Cumming, Truro, N. S., not being able to be present, sent a paper which outlined the needs and prospects of the industry in Nova Scotia. He pointed out that the great difficulty to be met by live-stock men in his province was in selecting and transporting animals from Ontario to that province. It costs a man in Nova Scotia from \$50.00 to \$75.00 to come to Ontario and buy an animal, consequently, there is a need that men get together and buy in large numbers to keep down expenses. Besides this, the transportation charges on single animals are almost prohibitive, and it is very difficult indeed to send a single animal by freight. Live-stock breeders in Ontario must aid those in Nova Scotia to solve this problem, and Prof. Cumming believed that the best solution would come by establishing a central live-stock purchasing and distributing agency in Ontario. The agency should be a part of the United Ontario live-stock associations, and the manager appointed by these or by the government. This manager must be a good judge of live stock and be untrammelled in his work. Live stock breeding has been making rapid advancement in the East. The breeders down there know more about good live stock than they did ten years ago. They demand pedigree as well as individuality. High records have been made by some of the cattle in that province. The dumping of poor stock from Ontario into Nova Scotia and the eastern provinces will certainly injure the trade, and Prof. Cumming looks to Ontario to organize the central agency mentioned and aid Nova Scotia breeders to work out the scheme.

H. S. Arkell, Assistant Dominion Live Stock Commissioner, by the aid of charts and maps took the audience for a trip over the Prairie Provinces, discussing the particular adaptations of each of the many well-known localities to the different classes of live-stock husbandry. Up from Winnipeg and away west to the Rockies he went; then north through the northern-most part of settled Alberta; then east and back to Winnipeg. He showed how in certain parts agriculture is becoming permanent, and a steady growth in mixed farming and live-stock husbandry is being effected. Manitoba is an instance of this. There has been little change in the numbers of live stock in Manitoba during the past few years, but in the whole of the West there has been a considerable increase, and, whereas a few years ago large numbers were being imported for consumption, this year there were exported 31,455 cattle and over one million hogs, Manitoba is settling down to producing live stock, particularly cattle and horses. The West is endeavoring to supply their own needs, but there will for years



A Group of Yearling Heifers.

To be sold at "Willowbanks" December 30th, property of C. V. Robbins. (See advertisement, this issue.)

total receipts of the centre \$1,291.70. The total expenditure for the year's business was only \$47.35. One hundred and seventy letters and cards all told were received, most of them being enquiries for alfalfa seed. The result has been that the members are taking every precaution to keep their fields clean, and are exercising greater care in harvesting, threshing and cleaning.

#### BUYING AND SELLING CO-OPERATIVELY.

F. C. Hart, head of the Co-operation and Markets Branch of the Ontario Department of Agriculture, spoke briefly on the subject of marketing seed. In his opinion Seed Centres should have attached to them proper machinery for selling their seeds co-operatively, and when the proper time comes he believes that all registered seed should be handled by one concern, probably a provincial organization; but, we must not expect too much of co-operation, and, as in every other successful business enterprise, small beginnings lead to greater things while large starts generally result in failures. Adequate organization must come through the local Seed Centres first. The business must be learned by experience, the principle of selling co-operatively is essential, and members of the local seed centres must realize this fact. By starting in a small way with few members it is possible to get men that will work together, and this is the only road to success. Above all things a good man must be had as a manager, and it is not always that the best producer is the best manager. Again the price asked has an effect on the selling. It is possible to put the price so high that sales will be curtailed thereby. As pointed out by Mr. Martindale, the aim should be to produce the seed at a profit to the grower, and sell it at a price which will induce and pay the purchaser to buy. Mr. Hart was hopeful that large things would come from the Seed Centres properly organized. Be-