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The Dominion Experimental Farms

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THE DOMINION EXPERIMENTAL FARMS

*A system of experimental stations operated by the Federal
Government which investigates agricultural prob-
lems and is capable of giving continuous
service to Canadian farmers*



Clydesdale mares and foals, Experimental Farm, Agassiz,
British Columbia.

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THE DOMINION EXPERIMENTAL FARMS

THE Dominion Experimental Farms System stretches across Canada from the Atlantic to the Pacific ocean, and is the most comprehensive system of its kind to be found in the world. The purpose of this little book is to give those who are now farming and those who plan to take up farming in Canada, the briefest outline of its scope and work, and to show that the same assistance, advice and material aid, which have been given thousands of farmers in the past, are at their disposal at all times and wherever they may make their homes.

History and Development

The preliminary investigations leading to the establishment of the Experimental Farms Branch of the Department of Agriculture began in 1884, when a select committee of the House of Commons was appointed to inquire into the best means of encouraging and developing Canadian agriculture. As a result, Dr. William Saunders, of London, Ont., was instructed, late in 1885, to visit experimental stations in the United States and European countries with a view to formulating a policy for Canada. Following his report to the then Minister of Agriculture, Sir John Carling, an Act was passed for the establishment of an Experimental Farm for the provinces of Ontario and Quebec jointly—this Farm to be known as the Central Farm—together with one for the Maritime Provinces, one for the province of Manitoba, one for the Northwest Territories, and one for British Columbia. The Act cited the main lines of investigation to be pursued. These included live stock breeding, dairying, the testing of cereals and other field crops, grasses and forage plants, fruits, vegetables, trees, and plants; the study of seeds, fertilizers, plant diseases and insect pests, the investigation of diseases of domestic animals, and such other experiments or researches as might benefit agriculture. Within two years of the passing of the Act, the five Farms had been selected, and were in practical operation. They were: The Central Farm at Ottawa, and the Farms at Nappan, Nova Scotia; Brandon, Manitoba; Indian Head, Northwest Territory; and Agassiz, British Columbia.

**Past and Present
Condition of
Canadian
Agriculture**

At the time of the establishment of the Experimental Farms, the value of good seed and suitable varieties was but little understood, systematic rotations were very little followed, good cultural methods were neither studied nor practised, the use of fertilizers

was not fairly understood or systematically followed, the advantages of surface tillage to preserve soil moisture on one hand, and of underdrainage on the other, had not been brought to the attention of the farmer, the uses of leguminous plants to increase soil fertility were unknown, the necessity of careful breeding, feeding, housing and management of live stock was not recognized,—or, in short, agricultural education and practice in the Dominion were in their infancy.

When these facts are realized it will be readily understood how necessary it was that the simple yet fundamentally essential elements leading towards agricultural stimulation should be studied and the results made known as widely as possible. The comparatively advanced state of Canadian agriculture and Canadian agricultural investigations as we have them to-day, is largely due to the patient work upon simple basic problems, as carried on by the pioneer agricultural investigators of the Experimental Farms.

Dr. William Saunders remained Director of the System Until March 31, 1911, retiring on account of old age and ill health. On that date the number of Experimental Farms and Stations had increased to nine. He was succeeded as Director by Mr. (later Dr.) J. H. Grisdale, who had been Agriculturist at the Central Farm for some years.

Rapid Development 1911 to 1920 The year 1911 marked the beginning of a more rapid expansion of the Experimental Farms System. This was made necessary by the increased settlement in Western Canada and the greater attention being paid to agricultural investigation and effort on the part of various institutions throughout Canada and other countries. During Dr. Grisdale's regime as Director, therefore, several new divisions of the work were established at the Central Farm, and other divisions were subdivided, while the number of Experimental Farms was increased from nine to twenty.

Recent Development When Dr. Grisdale left the position of Director in March, 1920, to take the higher post of Deputy Minister of the Department of Agriculture, he was succeeded by Mr. E. S. Archibald, B.A., B.S.A., who had served as Dominion Animal Husbandman under Dr. Grisdale for several years, and for nearly a year had been Acting Director of Experimental Farms in addition.

Since that time, war and post-war conditions have not permitted the opening up of new Branch Farms as rapidly as heretofore, only one more Farm having been established, namely at Swift Current, Saskatchewan, and the Tobacco Station at Harrow, Ontario, raised to the status of an Experimental Station. The main efforts of the present Director and his staff have been devoted to systematizing and broadening the various

lines of experimental work, and the equipping of the newer Branch Farms for carrying on full lines of investigation—a huge task which is by no means completed. At the present time over 3,000 main experimental projects are being studied on the various Farms and most of these include a number of sub-projects.

**Status and
Scope of the
Experimental
Farms**

The Experimental Farms System comprises the Central Experimental Farm at Ottawa, twenty-two Branch Farms and Stations, one Tobacco Experimental Station, one Horse Breeding Station, and eight Experimental Sub-stations.

The Branch Experimental Farms and Stations are located as follows:—In Prince Edward Island, at Charlottetown; in Nova Scotia, at Nappan and Kentville; in New Brunswick, at Fredericton; in Quebec, at Cap Rouge, Lennoxville, Ste. Anne de la Pocatière and La Ferme; in Ontario, at Harrow and Kapuskasing; in Manitoba, at Brandon and Morden; in Saskatchewan, at Scott, Swift Current, Rosthern and Indian Head; in Alberta, at Lethbridge and Lacombe; in British Columbia, at Agassiz, Summerland, Sidney and Invermere. The Tobacco Station is located at Farnham, Quebec. The Experimental Sub-stations are located in the thinly settled districts of northern Alberta, the Northwest Territories, and the Province of Quebec, and are conducted with the view to ascertain the northern limits of agricultural production in the Dominion. These Sub-stations are located as follows: In Alberta, at Beaverlodge and Fort Vermilion; in the North West Territories, at Fort Providence, Fort Smith, and Fort Resolution; in British Columbia at Salmon Arm; in Yukon Territory, at Swede Creek; and in Quebec, at Betsiamites.

As a connecting link between the Experimental Farms and the farmers of Canada, there has been established a system of Illustration Stations, numbering 125 at the present time, where outstanding results of experimental work are demonstrated on farms owned and operated by individual farmers.

At the Central Farm, Ottawa, the headquarters of the System, are located the office of the Director, as general administrative officer, and fourteen divisions, each under the control and supervision of a divisional chief. The divisions are as follows: Animal Husbandry, Field Husbandry, Horticulture, Cereals, Forage Plants, Poultry, Bees, Tobacco, Economic Fibre Production, Chemistry, Botany, Agricultural Bacteriology, Illustration Stations, and Extension and Publicity.

In these divisions originates the preliminary work of research and experiment, which is afterwards extended in its more practical aspects to the Branch Farms and Stations. The results of the work throughout the system in any particular line are then collated and made public.

ANIMAL HUSBANDRY DIVISION

To the farmer and prospective settler, the Animal Husbandry Division is enabled to offer the results of experience acquired through practice and experiment, accruing from the maintenance of over ten thousand head of live stock on the Dominion Experimental Farms in different parts of every province in the Dominion of Canada.

Direct or Practical Service to the Stockman

In the studs, herds and flocks on the Dominion Experimental Farms there is represented practically every breed suitable to general and special conditions of climate and soil. This selection of breeds has been arrived at, in many cases, only after years of trial. Unsuitable breeds have been eliminated. Desirable breeds have survived and been subject to improvement through the best calculated methods of breeding and management

The Place of Live Stock in the Varying Types of Canadian Agriculture

The next logical step has been the best possible co-ordination of live stock with the various methods of farming in Canada; in the older, central parts; in the great Prairie Provinces; the specialized conditions of British Columbia; and, lastly, the newly settled frontiers, ever pushing into great areas still to be brought under cultivation.

A Source of Foundation Stock and High Class Sires

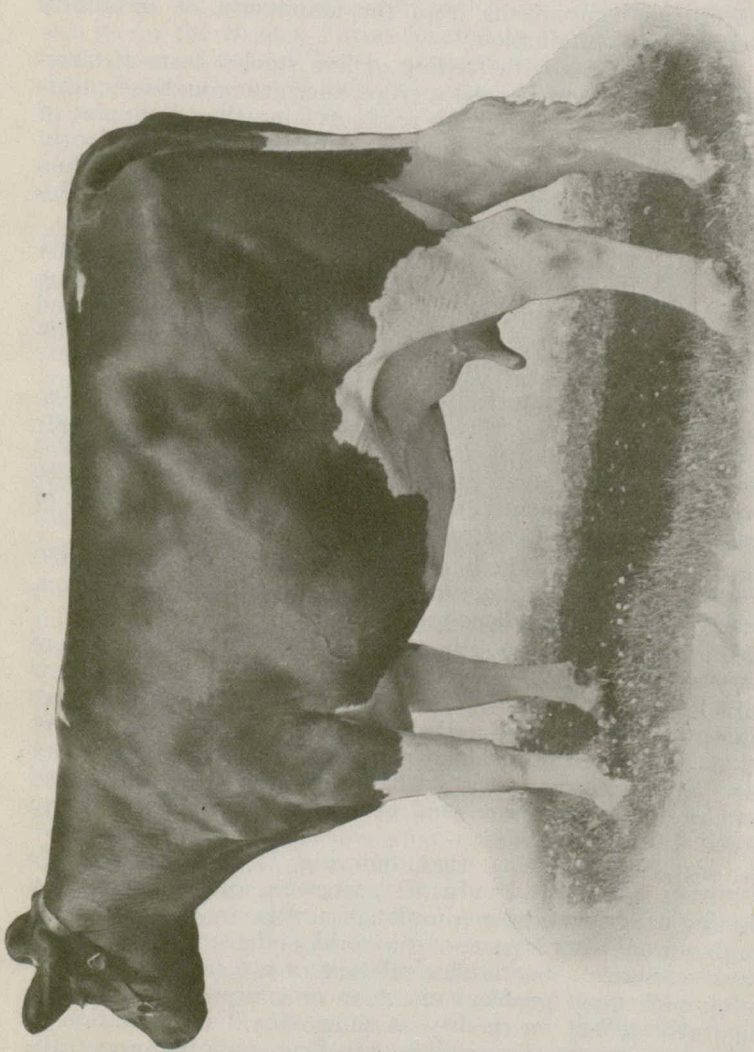
Aside from advice concerning such matters there is available an even more direct service to the farmer and settler in the way of the distribution of high-class pure-bred sires, they in turn the progeny of specially selected herds and flocks, and no effort is spared in maintaining the excellence of these breeding centres. Frequent importations are made. Only sires with highly qualified ancestry in breeding and production are purchased, and the stock that is offered the farmer to head his flocks and herds is in turn subject to rigid selection.

Grading Up

It must not be inferred that only pure-bred stock is maintained. On the great majority of the Experimental Farms and Stations, experimental and demonstrational work is under way in the grading up of ordinary farm stock by the use of high-class, pure-bred sires. Always there is kept uppermost in view the practical, the economical, the financial aspects of the industry.

Experimental, Demonstrational and Research Activities

As would be implied, the major function of these farms is experimental. Every animal, every building, every device serves two distinct purposes. It is maintained, first, for its own individual or utilitarian value, and second, for the experimental evidence or data which may be collected through it.



A world's champion cow, Holstein Friesian, born and raised on an Experimental Farm, 365 day record, 30,886 lb. milk, 1,681 lb. butter.

Breeding and Feeding Concerning lines of experimentation in Animal Husbandry problems, space permits of an enumeration remarkable only for its brevity.

1. Breed comparisons from the standpoint of suitability and economy of production.

2. Experiments with feeding of live stock; tests of farm-grown feeds—hay crops, ensiled crops, succulent roughages; tests of grain, mill feeds and mill by-products from the standpoint of economy of purchase and production; experiments with variously compounded rations to learn the effects of these on milk production, in the production of power, of beef and mutton, in studies of the effect of feeds and feeding on type in market hogs, etc.

Housing and Equipment 3. Experiments in the housing of live stock under the varying climatic conditions of Canada, working always toward the type of building of maximum utility and minimum cost, and including tests of live stock building equipment and accessories thereto.

The Health of Live Stock 4. Live stock hygiene; the effect of cheap housing, exercise, feeds, methods of feeding and management, on animal welfare; the practical effect of common sense methods of management as applied to prophylaxis or disease prevention; experiments and trials with different methods of disease treatment and control.

Farm Manufacture and Marketing 5. The handling, preparation for market and manufacture of farm produce; milk, butter, cheese; dressed meats, bacon, etc.

Reliable Information From the standpoint of approved practice and from the theoretical or experimental side, there is available to the farmer, the settler or the student, a vast store of information, to which is being added year by year, further facts and figures, the result of experiment as applied to newer fields. Such information is available through publications and through every Superintendent of every Experimental Farm devoted to live stock work.

Special Studies in Dairying 6. Seeing that dairying is one of Canada's greatest industries, special studies are carried on including the trial and introduction of new varieties of cheese, as manufactured in other parts of the world, and also the origination of new varieties. Bacteriological studies are undertaken concerning such great problems as clean milk production and the comparative effect on quality as shown by the elimination of sources of contamination; milking machines and other apparatus entering into the production of milk are studied from the bacteriological as well as from the standpoint of mechanical efficiency.

Finally, the Animal Husbandry Division enters co-operatively into many other lines of experimentation with other divisions, such as practical tests of various feeds.

FIELD HUSBANDRY DIVISION

To obtain practical information regarding the most profitable methods of growing farm crops, field experiments are conducted on the Central Experimental Farm, Ottawa, Ontario, as well as on the Branch Farms located in representative regions throughout Canada. These experiments are conducted by trained men, and many have been in progress a sufficient number of years to furnish reliable information on many problems. The Experimental Farms System, moreover, is a permanent institution and is able, therefore, to assist farmers in solving problems as they arise, and, indeed, in many cases to prevent their occurrence.

The following statement briefly outlines the work of the Division of Field Husbandry.

Rotations Rotation experiments are conducted on all the Dominion Experimental Farms to discover which crops and what arrangement of crops give the most profitable results. It has long been known that the growth of any one crop continuously, without rotation with other crops, results in decreased productivity and hence less profits. It is not known, however, what is the best rotation for various purposes and for various regions in Canada. Experiments are being conducted, therefore, to secure this information which is available to the public upon request, free of charge.

Cultivation of the Land Many methods of land cultivation are being compared to discover which give the most satisfactory results. There are many types of soil which require different treatment from other soils in order to give the best results. There are many different climates in the Dominion of Canada, and methods of soil cultivation which are successful in one region may be an absolute failure in other regions. It is more economical to obtain this information from the Dominion Experimental Farms than to take many years of one's life to learn it by one's own experience at one's own expense.

Manure and Fertilizers In the humid regions of Canada, that is, in the eastern provinces and in parts of British Columbia, the practice of using farm manure is the general custom. The practice of using commercial fertilizers is not yet extensively followed, except with specialized crops, but it is gradually increasing. The Experimental Farms have field experiments in progress regarding these problems and are able, therefore, to give reliable and impartial advice as to the most profitable methods of use. In the Prairie Provinces, owing to the lighter rainfall and to the greater soil fertility, the use of manure or fertilizers as a general farm practice has not yet become imperative.

Drainage and Irrigation Experiments have been conducted to learn the best methods of surface and tile drainage. In the humid regions of Canada, where this practice is followed, this knowledge may be applied, thus preventing loss through

lack of experience. In the few parts of Canada where irrigation is practised, that is, in a portion of southern Alberta and in the interior valleys of British Columbia, Experimental Farms have been established for many years and have reliable information on this matter.

Farm Machinery Types of machinery and methods of farming differ somewhat in different parts of Canada. Experiments are conducted along this line to discover the most satisfactory machines for various purposes. Tractors are used in order to learn under what circumstances their use is profitable. New farm machinery, of almost all kinds, is tried to determine its value in comparison with the standard machines.

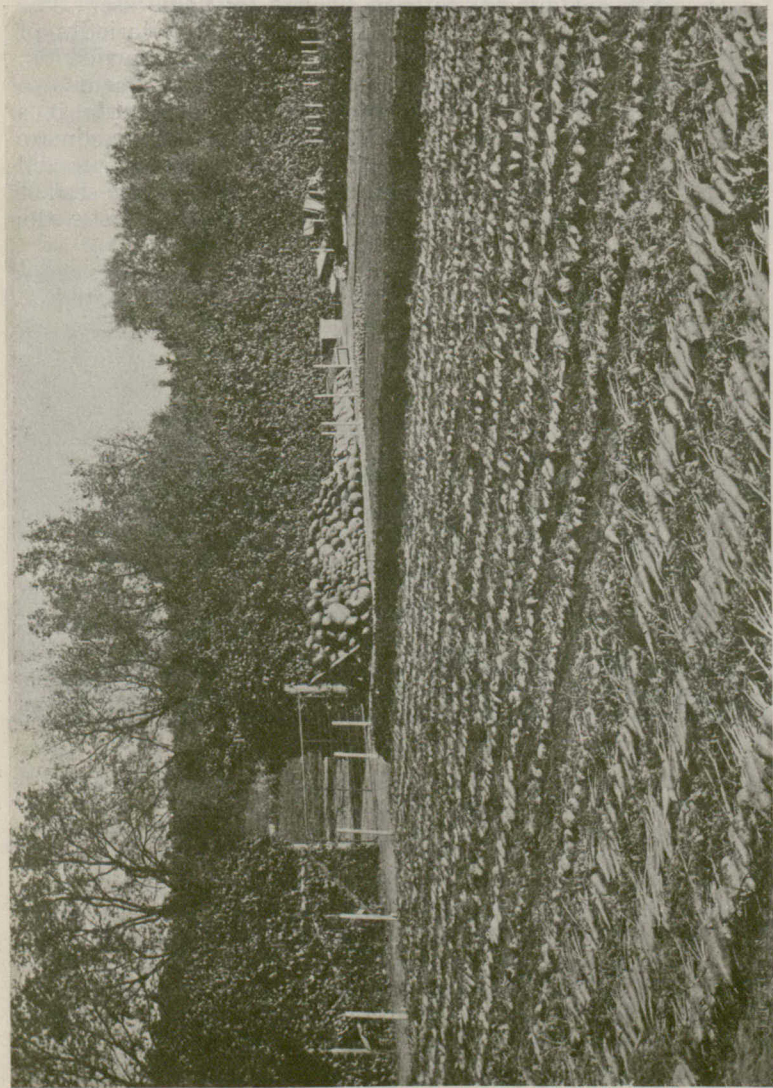
Clearing and Breaking Land Information has been secured on the cost of clearing land from forest conditions. Various methods have been tried to discover the most satisfactory. In the Prairie Provinces, where there is very little native tree growth, experiments have been conducted to learn the best method of breaking, that is of ploughing the native sod, in order to secure the largest crops in succeeding years.

Cost of Producing Crops One of the most important factors in successful farming is economy in the cost of producing crops. If the cost per acre is excessive or if the yields are too small the returns will certainly be reduced and may perhaps be insufficient to meet expenses. It is the part of prudence, therefore, to secure from the Dominion Experimental Farms reliable information on this problem.

DIVISION OF HORTICULTURE

The Division of Horticulture may be divided into four main parts or subdivisions, namely, Fruit Growing, Vegetable Gardening, Ornamental Gardening, and Plant Breeding.

Fruit Growing There are many climates in Canada and the methods of growing fruits vary considerably between the mildest and coldest parts of the Dominion. When the Experimental Farms were established thirty-seven years ago, it was necessary to obtain accurate information from experimental work on many matters relating to horticulture, for up to that time little information was available. Hence many experiments have been conducted in different parts of the country in regard to the relative merits of varieties, methods of cultivation, spraying, grafting, and other matters relating to the growing of fruit. To-day the settler and prospective settler can get the results of this work free for the asking through the many valuable reports and bulletins which have been published, and, as there are one or more Experimental Stations in each province, all he has to do is to communicate with his nearest Station to get the information he needs on any point in connection with the growing of fruit.



A corner of the vegetable garden, Experimental Farm, Brandon, Manitoba.

Vegetable Gardening

Every settler should have a vegetable garden, and as vegetables succeed particularly well in Canada, it is not difficult to grow enough for home use. The Division of Horticulture has tested hundreds of varieties of vegetables in different parts of Canada, and has carried on, through the Branch Stations, many cultural experiments, so that no matter in what part of Canada a man may settle, it is possible, through the results from the Station having the climate most nearly like that where he has become established, to tell him the best varieties to plant, the best time to sow the seed of each kind of vegetable, the best distance apart to have the



Young Apple orchard, Experimental Station, Summerland, British Columbia.

plants, the best insecticides and fungicides to use to control insects and diseases, and any other matter in regard to the growing of vegetables. Many pamphlets have been published dealing with the cultivation of different kinds of vegetables and these can be obtained free. The potato has been given particular attention in the Horticultural Division and practically every phase of the cultivation of this staple crop has been dealt with. A very exhaustive bulletin on the potato is available.

Ornamental Gardening

If one is to enjoy home life to the full in Canada there must be beautiful surroundings to the home. Annual and perennial herbaceous plants and flowering shrubs, including such favourites as the sweet pea, phlox, verbena, aster, larkspur, iris, paeony, rose, mock orange, spiraea, lilac, honeysuckle, and many others, succeed admirably over a very wide area in the Dominion. Varieties of these have been experimented with to learn which are best for different parts of the country, and in the annual reports and in bulletins on Herb-

aceous Perennials and Roses and in one on Planning the Home Grounds, reliable information is given, so that the settler is saved the expense, if he gets this information beforehand, of paying for something that will not succeed well in his district.

**Plant
Breeding**

It is the aim of the Division of Horticulture to originate better varieties than those already in existence, suitable for the special conditions which are met with in different parts of the country; hence for many years an important part of the work has been to obtain new varieties and introduce them. It may be mentioned that as a result of this work the Experimental Farms have, on six different occasions, been awarded the Silver Wilder Medal, the highest award made by the American Pomological Society. These were given for new varieties of apples. Hardier fruits are available for the prairies as a result of this work and certain early varieties of vegetables, originated by the Horticultural Division, are proving of great value and ensuring better crops, especially where the summer season is relatively short. New varieties of flowers are being produced. Lists of the best sorts are published, which are available free to anyone who desires them.

Correspondence

It is mainly through the correspondence that the staff of the Horticultural Division learns whether their work is of general value or not, and the large number of letters received from settlers each year is a testimony to the fact that many persons are anxious to obtain reliable information in regard to horticulture and know that the information they receive will be of value to them. When a man desires to learn something that he thinks will be useful to him in his work he writes to either the Horticultural Division at Ottawa or to his nearest Experimental Station, and the information is promptly and gladly sent him without charge. In this way a man is often saved much useless expense.

CEREAL DIVISION

The chief function of the Cereal Division is to obtain for use in all parts of Canada the most profitable varieties of cereal grains, peas, field beans, flax and hemp.

The accomplishment of the above task is sought in the following main ways, namely:—

(a) By collecting and testing, both at the Central Farm at Ottawa and on the various Branch Farms and Stations throughout Canada, the leading varieties from all parts of the world.

(b) By isolating what is known as pure lines or strains in old varieties.

(c) By producing new varieties by artificially crossing different strains.

(d) By conducting milling and baking tests of different varieties or strains of wheat in order to determine the best varieties for breadmaking.

(e) By co-operating with the Flax Division in connection with the production of fibre varieties of flax, as this division is especially equipped to investigate the fibre producing qualities of different sorts.

(f) By co-operating with the Botanical Division in connection with the production of disease-resistant varieties.

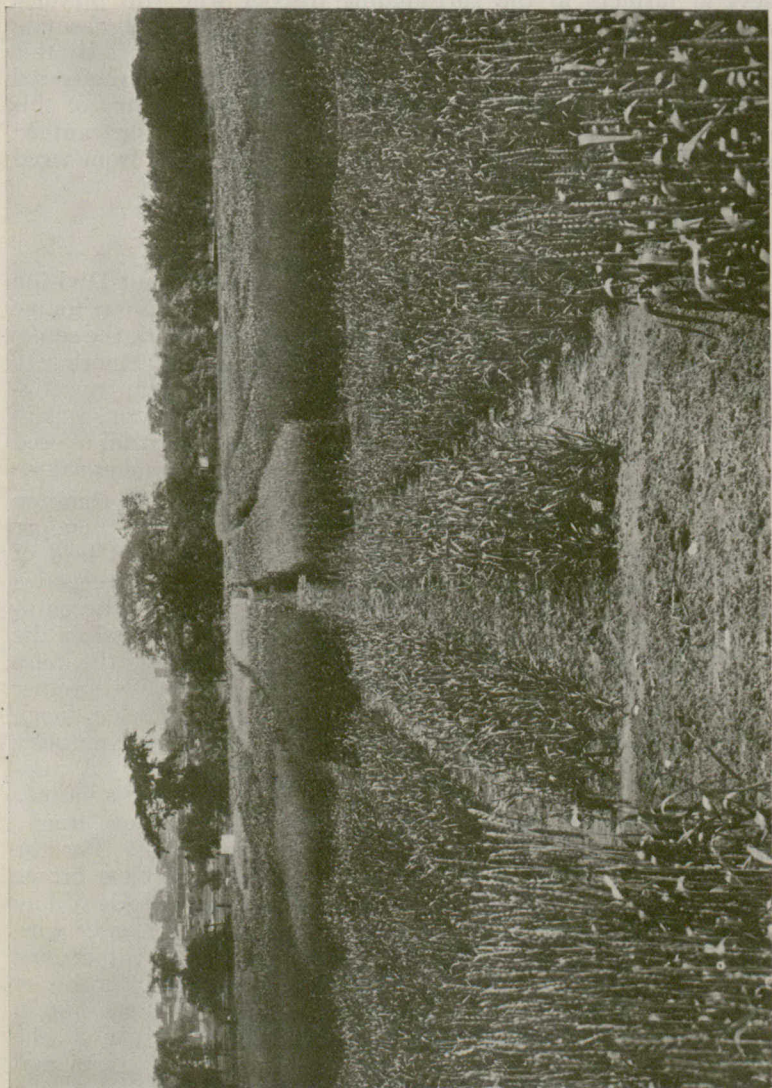
(g) By co-operating with farmers in testing varieties on the farms of the latter in order that well adapted varieties may be grown in the different districts.

(h) By producing and propagating for distribution what is known as Elite Stock Seed of pedigreed varieties and making this seed (Registered Seed) available to farmers in commercial quantities. In this phase of the work the division co-operates with the Canadian Seed Growers' Association, which organization is specially equipped to administer the handling of this class of seed on a large scale.

The existence of permanent Branch Farms or Stations in every province in Canada permits not only the methodical prosecution of the above work, but provides farmers in the different provinces with sources of valuable information regarding various phases of crop production.

Experimental Farms as Seed Centres In addition to carrying on work in producing and proving superior sorts for different regions, the policy has been adopted of making each Branch Farm a seed-producing centre, as far as possible. Each Farm sows a good many acres of cereal grains each spring, either with Elite Stock Seed or with the progeny of this seed which latter is known as Registered Seed. The fields are inspected during the growing season by official inspectors operating under the "Seeds Act" of Canada. The fields found to be free from impurities and otherwise desirable receive certificates of registration from the Canadian Seed Growers' Association on exactly the same basis as that on which members of that organization receive certificates for their fields. The threshed grain is then cleaned thoroughly and again inspected by the above officials. If the threshed grain is up to standard, not only in purity and quality, but in per cent germination, it receives officially the grade called *Registered*. All sacks containing Registered seed are sewn, tagged with special tags and sealed by an official seed inspector. This seed is then ready for sale to farmers at reasonable prices.

At some of the Stations special seed cleaning machinery designed to clean seed rapidly as well as thoroughly has been installed. Such Stations are offering their services to farmers who wish to have their seed cleaned and carefully graded. This service is performed at cost which amounts to only a few



Part of the cereal trial grounds, Central Farm, Ottawa.

cents per bushel. It is the hope that every Branch Farm will become the nucleus of a seed-producing centre composed of several farmers in the surrounding district who will produce registered seed and have it cleaned at the Station cleaning plants and made available for sale to the general public. By this arrangement very considerable quantities of high class registered seed will be made available. The value to the country of this opportunity for farmers to purchase a supply of guaranteed seed of approved varieties of high vitality and free from weed seeds can hardly be estimated.

FORAGE PLANT DIVISION

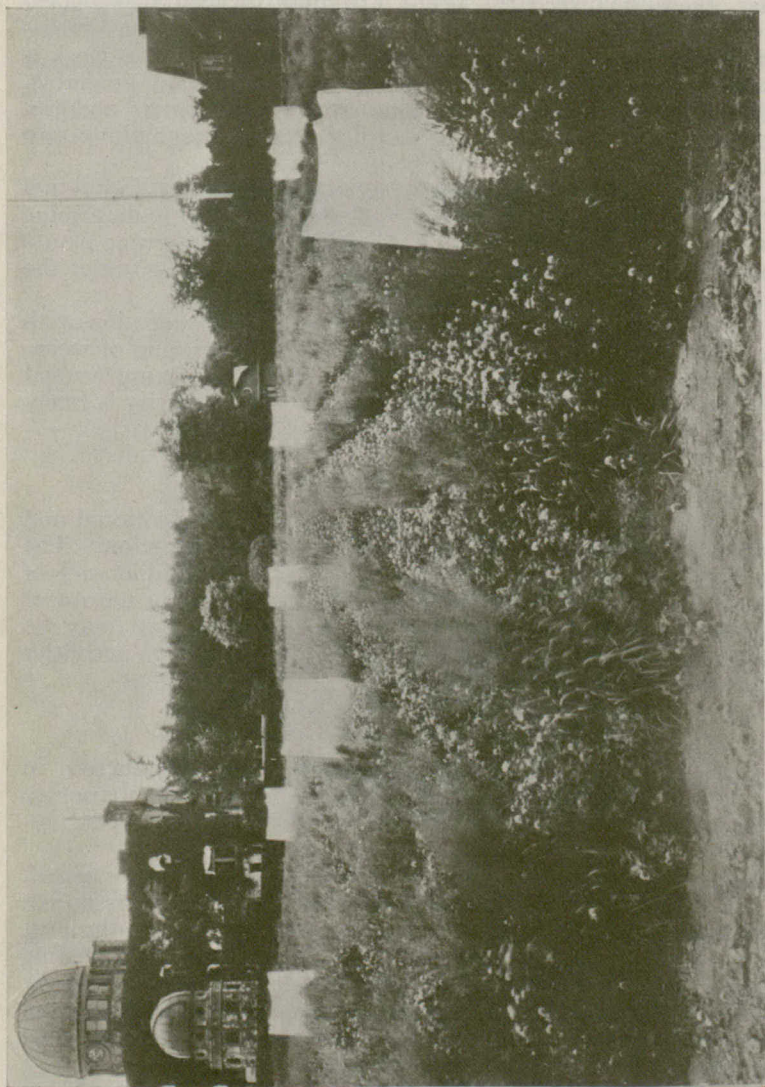
Included among the activities of the Forage Plant Division are the following: Variety testing of grasses, leguminous forage plants, field roots and Indian corn; plant breeding with the same; the collection of Canadian wild flora, giving special attention to genera and species likely to be of value as forage plants; investigating the possibilities and best methods of growing root seeds in different districts in Canada, and the distribution for trial of seed of varieties newly obtained and not yet available commercially.

Grass and Clover Improvement Work

Because of the fact that almost all the common forage plants are open fertilized, and therefore constantly intercrossed, a very important field of work is the separation of the varieties into the numerous strains of which they are composed. Once this separation is accomplished, the superior strains are retained for further use while the undesirable strains are eliminated. Selection along the lines indicated has resulted in the isolation of a considerable number of desirable strains of timothy, orchard grass (cock's foot), meadow fescue, awnless brome grass, western rye grass, Kentucky blue grass, red top, red fescue, alfalfa and red clover. A combination of the better strains of timothy has resulted in a variety of superior quality and yield which, under the name of "Boon" timothy, is being multiplied for general distribution. For the drier areas of the Canadian prairies, strains of awnless brome grass are being distributed which give satisfactory yields of hay in districts where timothy, orchard grass, or other grasses with similar moisture requirements would be useless. An improved strain of red clover which has a strong tendency to live more than two years has also been developed for the more humid areas of Canada. In a similar manner, other strains of the grasses and legumes are being developed for the varied soil and climatic conditions found in the Dominion.

Variety Tests

Along with the breeding and selection of improved types of forage crops, extensive tests are carried on to determine what varieties of corn, sunflowers, field roots and other forage crops, as well as the grasses and clovers previ-



Multiplication block of red clover and breeding block of meadow fescue, Central Farm, Ottawa.

ously mentioned, are best suited to the different agricultural zones of Canada. In this connection it is interesting to note that there has recently been introduced a disease-resistant strain of swede turnip which is very useful for planting in districts where there may be club-root infested land. This work is conducted in order that there may be information available, for the guidance of both the long-established farmers and the new settlers of any district, as to what type of forage plants can be profitably grown.

Combination Tests In conjunction with the testing of individual varieties, series of trials are conducted to determine the best combinations of common, or little known, forage plants that will prove most satisfactory for hay and pasture under the varying climatic conditions existing in Canada.

Investigational work is also carried on in connection with maintenance of permanent pasture and the reclaiming of worn-out grass lands. Many other similar problems are being studied and investigated, and the information obtained thereby is freely available to all those who desire it.

POULTRY DIVISION

This division conducts a wide range of investigational and experimental work in connection with poultry production. The work is carried on at the Central Farm at Ottawa and at each of the Branch Farms throughout the Dominion. The nature of the work being done and the service being rendered may be better understood by a brief summary of the various activities into which the work is divided.

Experimental and Investigational

Incubation Careful experiments have been conducted in connection with artificial and natural incubation to determine the best methods for the average farmer or poultryman.

Brooding Various types of brooders have been tested. Artificial and natural methods have been compared. Data upon the cost of the different methods have been obtained.

Feeding Young Chicks Considerable attention has been given to the feeding of chicks during the brooding period, and, as a result, the division is in a position to give detailed information as to methods that will overcome the high mortality that so often occurs with chicks at this age.

Rearing Data on the cost of rearing of different breeds, to various ages and under varying conditions, have been secured, and a study made of the value of range, shade, milk, different feeds, etc. In the rearing of turkeys the effect of range vs. confinement is being investigated.

Housing Many kinds of houses for incubating, brooding, laying, breeding, etc., have been tested and types are being recommended that are simple and economical in construction.

Marketing Numerous investigations have been conducted regarding the best time to market, how to feed and prepare for market, the relative revenue in broilers, roasters, capons, etc.



"Lady Dot", bred by Experimental Farms, laid 325 eggs in 12 months, Nov. 1st, 1920 to Nov. 1st, 1921 at the, Experimental Station, Invermere, British Columbia.

Pullets Figures have been obtained upon the cost of raising a pullet to the age of production, and when the pullet should be hatched for best results, taking into consideration the breed, the conditions and the part of Canada in which the work is done.

Egg Production Numerous experiments have been, and are being conducted by all of the Farms upon the cost of producing eggs. They are being carried on with birds under all kinds of conditions. The breed and the age of the birds, the type of the house, the kind of feed, etc., being taken into consideration.

- Breeding** Pedigree breeding work is one of the major activities. High-laying strains are being produced and factors that influence high production investigated. The question of mating for fertility and vigour of chicks is also receiving attention.
- Waterfowl** Experimental work in the breeding, mating, hatching, and rearing and marketing of ducks and geese is carried on at several of the Farms.
- Diseases** In co-operation with the Health of Animals Branch the causes and methods of control of various poultry diseases are being studied.

Service to Poultrymen

- Results of Experiments** Knowledge of the results that have been secured from the experiments indicated and numerous others, saves the poultryman worry and expense and helps to eliminate much of the uncertainty that otherwise might occur. These results are available to all who ask for them, and are given in the form of reports, bulletins, correspondence, etc.
- Breeding Stock** Stock from high-producing pedigreed strains are available at reasonable prices.
- Survey Forms** Special help is given through what is called "The Farm, Egg and Poultry Account Form." This is a blank form upon which the poultryman may keep a record of his poultry operations. On it may be shown the number of eggs laid and their value, the kinds and value of feed fed, the receipts and expenditures with the balance for the year. The forms are sent free to all who will make use of them and return one copy to the Poultry Division at the Central Farm each month. It not only helps the farmer to keep a record of his poultry operations, but it gives this Division an opportunity to learn what is being done and to offer suggestions as to how the work might be improved to make it more profitable. This plan is especially helpful to the man or woman who is new to the country or to the work.
- Laying Contests** This division conducts the only series of standardized National Egg Laying Contests in the world. These laying contests, placed as they are in each province (12 in all) are the means of stimulating an interest in egg production that nothing else does. The results of the contest also give intending purchasers of pure-bred stock an ideal opportunity to know the good breeder of bred-to-lay stock.
- Registration** The laying contests are the medium through which the qualifications for registration are secured. Registration of poultry is such an outstanding achievement that Canada is attracting the attention of the poultry world, and when the ideal climate which Canada has for the production of

healthy, vigorous stock is considered along with the National Registration of high-producing stock, the outlook for the sale of registered cockerels, both at home and abroad, is extremely bright.

General The Poultry Division gladly assists any settlers, or intending settlers, who are interested or may be interested in poultry keeping, by giving suggestions and advice, by printed bulletin or circular, by private correspondence or by personal interview.

TOBACCO DIVISION

The work of the Tobacco Division deals with the investigation of problems in connection with the development of the Canadian tobacco industry in all its branches: Breeding, variety tests, soils, cultural methods, harvesting and curing, control of diseases, warehouse and educational work. These investigations are being conducted at Ottawa and Harrow, Ontario, and at the Tobacco Station, Farnham, Quebec.

Breeding and Selection In plant breeding, the production of varieties of tobacco resistant to the root-rot disease, and the originating of new varieties, combining favourable characters, through hybridization is carried on. The improvement of existing varieties by selection is also receiving attention.

Variety Tests A comparative study of a number of varieties of tobacco is made to ascertain their respective merits, and to maintain types desired and approved by the trade. Varieties are introduced from tobacco-growing countries throughout the world and studied in comparison with Canadian varieties. In the variety tests the habit of growth, relative value, yield, and possibilities of newly introduced strains are determined. Tobacco seed from desirable varieties is distributed to applicants. The types being grown and experimented with are as follows: Virginia Bright or flue-cured, White Burley, Green River, Dark-fired and cigar tobaccos, including binder and filler types.

Soils Investigations as to the chemical and mechanical composition of the soils now producing tobacco are being made. The fertilizer and manurial requirements of these soils are being determined by plot and field experiments. Other lines of work are: the maintenance and increase of soil fertility; relation of texture and composition of the soil to the quality of the leaf; the determination of the kind of soil required for each type of tobacco and the classification and mapping of the tobacco soils. Tobacco is being grown in Canada on a commercial scale, in Quebec in two districts near Montreal, in southwestern Ontario and in the vicinity of Kelowna which is situated on the east shore of Lake Okanagan, British Columbia.

Cultural Methods The main lines of work carried on in this connection are the study and comparison of hot, semi-hot, and cold seed beds for the production of early tobacco seedlings; steam and formalin sterilization of the seed-beds; the determination of the best rotations for the various types of tobacco grown; the testing of insecticides for controlling insect pests. extensive manure and fertilizer tests and the effect on the yield and quality; the planting at different distances in the field; the depth of ploughing and the testing of machinery and implements used in tobacco growing.

Harvesting and Curing Various methods of harvesting are being studied such as cutting and scaffolding in the field vs. splitting and cutting and hauling direct to the barn, vs. not splitting the stalk, and the effect these have on colour and the length of the curing period. The use of charcoal heaters and open fires is being studied with relation to the reduction of the time of curing and the control of moulds, and the proper humidity and temperature relation in flue curing and air curing is being investigated.

Control of Diseases The pathological work with tobacco consists of studies on seed disinfection; control and prevention of seed-beds diseases; spraying and dusting with various fungicides for controlling wild fire and angular leaf spot in the plant bed and the field; breeding of disease resistant varieties; controlling fungi in tobacco warehouses; and tobacco disease surveys.

Warehousing Activities in connection with warehousing work include the following: Demonstrations of grading and packing tobacco; warehouse fermentation processes; determining the best moisture and temperature for warehouse work bringing to the attention of the Canadian manufacturers the merits of domestic tobaccos finished in the warehouse: supplying samples of the finished tobacco for examination and test; study of the various methods used in warehouses for the handling of different types of tobacco; natural sweat; forced sweat; re-sweating process and maturation.

Educational Work The educational work consists of personal visits by members of the staff to the fields of as many growers as possible during the growing season to suggest the best known cultural methods; bringing to the attention of the grower the results of experiments conducted by the division; giving field demonstrations; assisting the grower in controlling disease and insect pests; conducting co-operative experiments on many phases of tobacco culture; issuing press articles; addressing growers organizations and bringing to the attention of the tobacco manufacturers any new or promising tobaccos.

An exhibit of Canadian grown tobaccos is being staged in the Government section of the Canadian Pavilion, British Empire Exhibition



Cigar Leaf tobacco grown on Experimental Station, Harrow, Ontario.

BEE DIVISION

Although the organization of a separate division to look after work with bees was completed only in 1915, yet small apiaries have been kept on the Central Farm at Ottawa and several of the Branch Farms for many years past.

The division conducts experimental and investigational work in breeding, feeding and manipulation of bees; studies bee products; diagnoses bee diseases; and, in numerous other ways seeks to aid bee-keepers and to improve the bee-keeping industry throughout Canada.



Part of the Apiary, Central Farm, Ottawa.

Breeding

Breeding work is being carried on in an endeavour to improve the Italian bee by reducing the propensity to swarm. A comparison of the Italian vs. the hybrid vs. the black bee, with a view to ascertaining the suitability of each to certain localities and its resistance to European Foul Brood, is being conducted.

Comparisons are made of bees wintered locally with young bees brought in from the south for breeding in spring. The best methods of re-queening are being worked out and a study of the wild bees of Canada is being made.

Feeding and Wintering

The various feeds and methods of feeding are being closely studied. Spring protection and ways of wintering, to reduce spring and winter mortality, are being investigated. At one time it was thought that the only way to carry bees over the cold winter weather was to place them in the house cellar. The Experimental Farms have shown that outside wintering of bees is perfectly feasible, provided colonies are given proper protection from the cold and the bees are given plenty of wholesome stores.

The choice of locations for apiaries is a subject which has received considerable attention through the study of the honey producing plants of Canada, and of the climatic conditions under which each produces the greatest amount of nectar. A number of plants not hitherto recognized as important nectar producers have been found to be exceedingly valuable to bee-keepers. When the range of these, together with those plants long recognized as valuable, has been determined, it will be possible to map out into fairly definite areas those sections which will prove most suitable for bee-keeping.

**Service to
Bee-keepers**

Bee diseases are diagnosed free of charge. Samples of infected brood sent to the division at Ottawa are microscopically examined and the disease determined. The bee-keeper is then advised of the nature of the disease and of the treatment to apply.

Apiary Reminders are issued seasonably. Their value lies in discussing briefly matters which will shortly demand the bee-keeper's attention. Thus the bee-keeper is reminded of many things he might otherwise forget, on some of which success or failure may hinge. Any bee-keeper may receive these reminders by simply having his name placed on the division's mailing list.

Bee-keepers in difficulties, who submit their problems, are aided by personal advice, and prospective bee-keepers are put in touch with those able to supply their requirements.

FIBRE DIVISION

This division was formed in 1915. It aims to promote the growth of fibre plants in Canada. The work, thus far, has largely been confined to investigations in connection with the growing of flax and preparing the fibre for marketing. Some investigations have been carried on with hemp and the results have been so promising that the division plans to devote more attention in the future to the development of the hemp industry.

**Locating Districts
Suitable for
Fibre Crops**

In a country so large as Canada, with its great range of climatic and soil conditions, it is natural to suppose that there are localities peculiarly suited for the growing of certain crops. In order to determine where in the Dominion flax and hemp will grow best, the Fibre Division sows a small acreage of each of these crops at the Branch Farms located in each province. The straw from these small plots is shipped to the flax mill at the Central Farm, Ottawa, where it is deseeded, retted and scutched and the results published.

Demonstration Mills

Having located the districts where conditions for the development of the industry appear most suitable, the next step is to demonstrate to the farmers in those localities the best method of growing, harvesting, retting and scutching the crop. For this purpose, small demonstration flax mills are established at the Branch Farms located in the districts best suited to flax and hemp growing, where farmers may see the actual operations for themselves, and receive information regarding the growing, handling and marketing of the crop. In addition to the small mills just described, a large demonstration plant is operated in western Ontario, which is at present the only large commercial flax-growing area in Canada. The purpose of this plant is to demonstrate up-to-date and economical methods in connection with growing flax on a large scale—150 to 200 acres, which is the acreage generally produced under one management in this district. This plant is also used for testing new machines that are designed for the purpose of lowering the cost of production. The Vessot flax-pulling machine is one which at present is receiving attention.

Marketing the Fibre

At present there is very little linen manufactured in Canada, so that practically all of the flax fibre produced in this country must be sold either in the United States or in Europe. Assistance in marketing both fibre and seed has been, and is being, given the producers by the fibre Division.

Other Investigations

In addition to the activities above outlined, the Division is carrying on work at the Central Farm, in testing different varieties of home-grown versus imported fibre seed, with a view to securing varieties that will produce high yields of good quality and of high spinning value. Flax is being grown on different types of soil in order to determine which type of soil will produce the highest yield and the greatest length, strength and quality of fibre. Experiments are being conducted in order to determine the most suitable stage to harvest flax under Canadian conditions where both fibre and seed are saved. Various tests with artificial fertilizers are in progress for the purpose of ascertaining their influence on yield and quality of fibre.

DIVISION OF CHEMISTRY

Relationship between Chemistry and Agriculture

There is an intimate and fundamental relationship between chemistry and modern, progressive agriculture and this fact was early recognized in the history of the Experimental Farms. As a consequence of this realization we find the application of chemistry, in the laboratory and in the field, to the solution of problems cropping out in the every day work of the practical farmer, the outstanding feature in all the activities of the Division of Chemistry.



Test plots of flax. Central Farm, Ottawa.

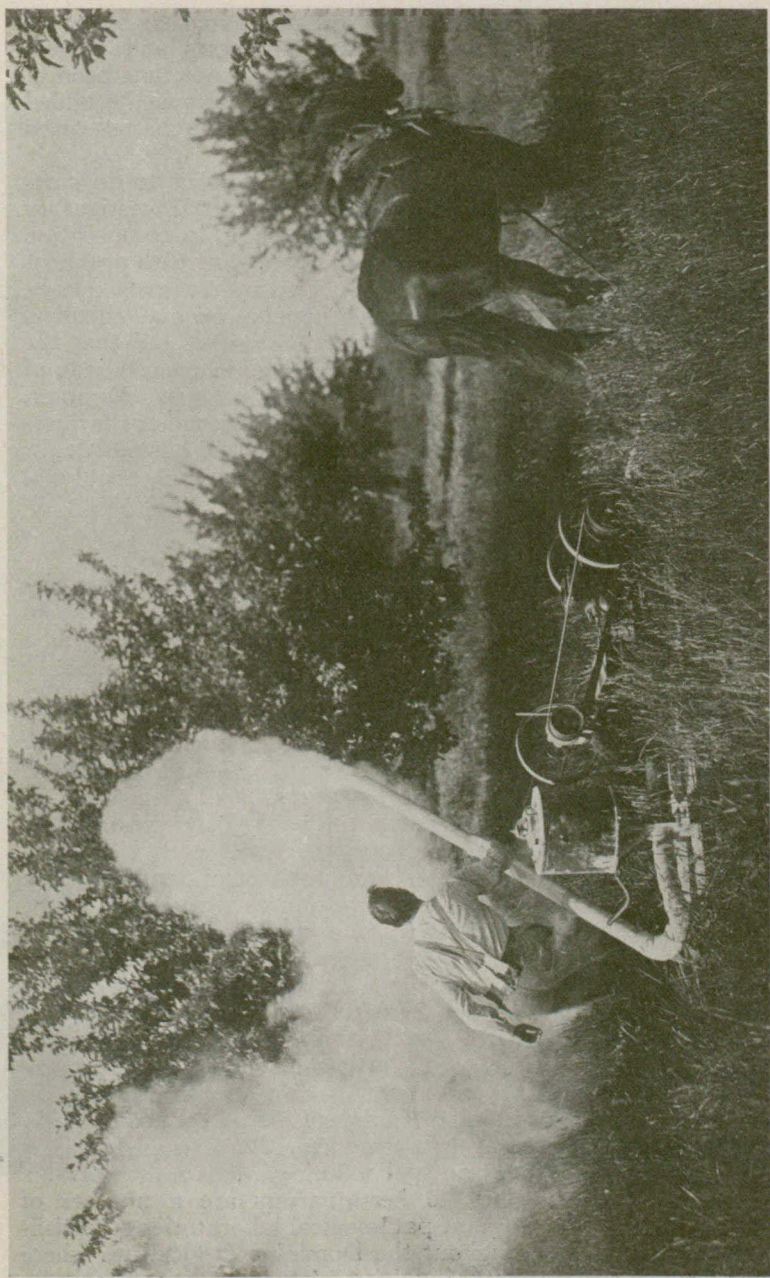
**Research
Work**

Investigational and research work has been wide and varied, with the desire constantly in mind to assist the many phases of agriculture followed in Canada—dairying and live stock, field husbandry, fruit growing, tobacco culture, sugar-beet growing for factory purposes, and a host of allied branches. The publications of the division during the past thirty years show that the data obtained from this work have not only resulted in much valuable information for the guidance of farmers in the several provinces of the Dominion, but have been of great scientific interest.

**Soil and
Soil
Fertility**

Soil management with the view to the rational and economic maintenance and increase of fertility has received particular attention. This work has necessarily included the analysis, chemical and physical, of many of the more important types of soils occurring throughout the Dominion, establishing as far as may be possible by laboratory methods, their characteristics and their richness or deficiency in the specific elements necessary for crop growth. A study of rotations has been made and their influence on the humus and plant food content of soils determined; the depletion and soil injury due to the system of grain growing and summer-fallowing has been shown. The value of green manuring—the turning under of green crops, especially of the legumes, has been demonstrated; it is one of the cheapest and best means of securing good tilth and increasing soil productiveness. The care and application of farm manures has been carefully studied with a view to the best use and largest return from this valuable by-product. Experiments with commercial fertilizers have been carried on at a number of the Branch Farms and Stations. These have furnished results of much value to those engaged in special branches of agriculture, e.g., potato growing, orcharding and market gardening. Cultural methods as affecting the moisture content of soils and nitrification—important factors in determining crop growth—have also been studied. This brief enumeration of the more important phases of soil investigational work may serve to indicate the several standpoints from which problems connected with soil fertility and its increase are being attacked. The larger part of this work has been carried on to assist farming in the newer settled portions of the Dominion—the western Prairie Provinces, the Peace River district and northern Ontario, but the older settled districts of the Dominion have not been overlooked.

The influence of soil and seasonal conditions on the growth and composition of wheat, sugar beets, potatoes and other crops, is being investigated, the results proving of great value in indicating the districts in which crops of the highest quality may be expected.



Applying dust mixture to orchard to control apple scab.

**Nutritive Value
Feeds and
Feeding Stuffs**

The determination of the nutritive value of grasses, clovers, corn, sunflowers and indeed, all classes of forage and silo crops, has been of great service to farmers generally—and to this must be added the analysis of feeding stuffs, home-grown or purchased—used in stock feeding throughout Canada.

But it would be quite impossible in this space to do more than indicate the nature of this analytical and investigatory work, a very large part of which is carried on in co-operation with the several divisions more particularly dealing with problems connected with the growth of farm crops and animals. It is, however, desirable to emphasize that there has been a "chemical service" for the man on the land from the outset and that the division is looked upon throughout the Dominion as a bureau of reliable information, educational and advisory in character, which can be applied to free of charge. Thousands of farmers have availed themselves of this service and it has no doubt proved a factor of considerable value towards the successful and profitable operation of many Canadian farms.

DIVISION OF BOTANY

Without a scientific staff and properly equipped laboratories in which research may be conducted along the many phases of botany as applied to agricultural industries, it would seem a difficult task to practise agriculture profitably.

The botanical service of the Experimental Farms divides itself into the two sections, economic botany and plant pathology.

**Economic Botany
Physiology and
Mycology**

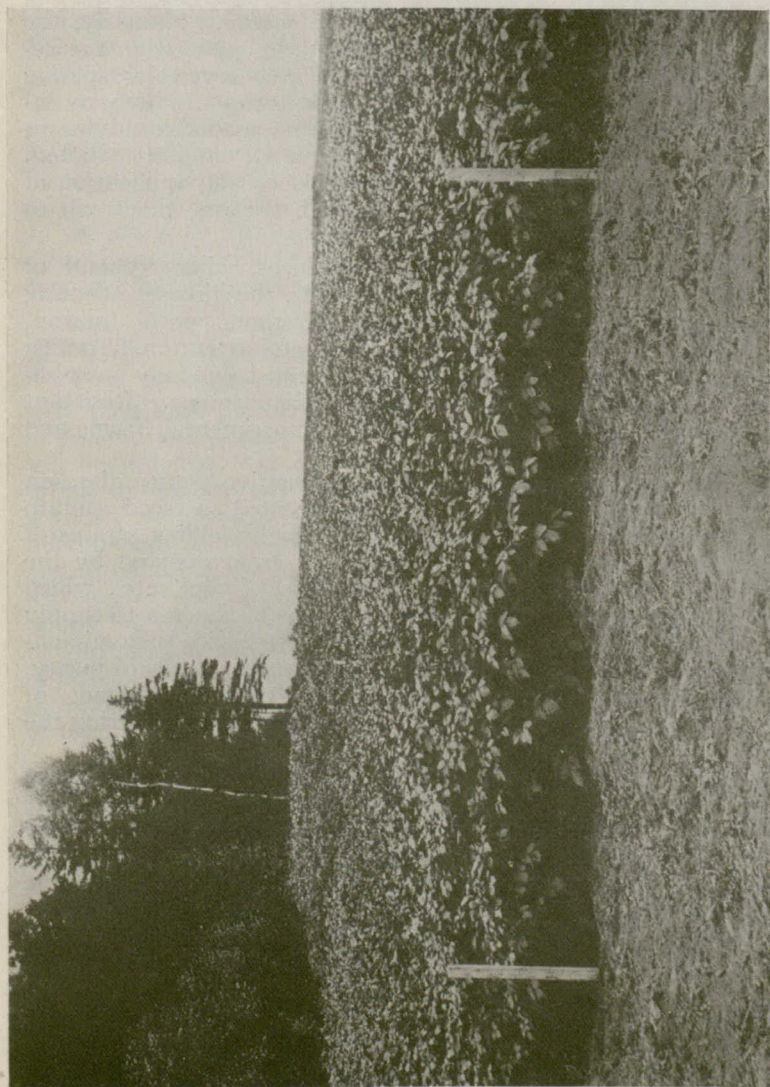
At the Central Farm, Ottawa, there is established a well-equipped, central botanical laboratory. Here is carried on the study of methods of control and eradication of noxious weeds, of plants poisonous to live stock, as well as the study of plants of economic value. The central laboratory directs and conducts researches of a physiological character, and carries on investigations into the nature of diseases of forest trees and timber injury generally. In addition it serves as a most active information bureau to farmers on all botanical matters, the identification of plants, including poisonous and edible fungi, the determination of plant products and general plant pathology.

**Arboretum and
Botanic Gardens**

For the benefit of the general public there is provided at the Central Farm an extensive arboretum and botanic garden containing representative collections of hardy trees and shrubs from many distant countries. An exchange of seeds is also carried on with the principal botanic gardens of the world.

**Fruit Disease
Investigations
Branch
Laboratories**

Subsidiary to headquarters are a number of branch plant pathological laboratories established throughout the Dominion in localities where their services are especially requisite. Thus, in Nova Scotia, in



Potatoes grown from certified seed, note vigour and uniformity of growth.

the famous Annapolis Valley, is situated a laboratory designed to render assistance to the fruit industry of Eastern Canada. Demonstrations of the control of diseases by spraying or dusting are held from time to time during the season. Similarly, the fruit growing districts of southern Ontario, as well as the renowned valleys of British Columbia, are served by specific laboratories. The services of all laboratories are free to inquirers, who are welcome to benefit from available advice or to have their problems, if of wider interest, carefully studied. That valuable results have been attained by the application of measures directed to the control of fruit diseases, thousands of acres of clean and healthy trees testify.

Investigation of Diseases of General Farm Crops

In the Maritime Provinces, where general or "mixed" farming prevails, the diseases affecting grain, grasses, clovers, roots, corn (maize), potatoes and other vegetables receive careful attention. Among diseases of roots, "club root" or "finger and toes" may be specially mentioned as of considerable importance. Resistant varieties have been introduced by the Experimental Farms and are gaining favour with the growers.

Potato Inspection and Certification

In order to control destructive potato diseases, there has been inaugurated a seed potato service, whereby it is sought to secure high-yielding strains of disease-free seed potatoes; these are in great demand by the United States, Cuba, Bermuda, the West Indies, etc., which largely look to the northern, cooler regions of Canada to supply their requirements. This potato-inspection service is Dominion-wide, and is conducted according to precise standards of purity, uniformity and disease freedom. Hundreds of carloads of certified potatoes leave active shipping centres daily during the season.

Investigation of Diseases of Cereals

In the three Prairie Provinces, researches are conducted in four laboratories, which concentrate their efforts upon the study of rust of cereal crops. With a crop amounting to hundreds of millions of bushels of good, hard, bread wheat, the rust problem is important; and the object in view is to secure a wheat as valuable as the world-famed Marquis, but which in addition will be more highly rust-resistant.

International Plant Disease Legislation

Not only is it the aim of the plant pathological service to aid in the control of plant diseases already within the country, but the botanical service—jointly with the Entomological Branch of the Department of Agriculture—is also devoting considerable time and attention to the more international aspects of plant pathology, viz., through the prevention, by legislation and supervision under the Destructive Insect and Pest Act, of the importation of diseased vegetation from any country abroad.

DIVISION OF BACTERIOLOGY

The Division of Bacteriology represents the most recent specialization of the activities of the Farms, being created in 1923 for the purpose of giving special attention to those matters in agricultural research which bear specially upon the science of bacteriology. In connection with every phase of agricultural practice, problems arise which have a direct relationship to the activities of micro-organisms, and which require specialized bacteriological methods for their investigation. To assist in solving some of those problems is the aim of the new division. In the study of the bacteriological problems of the work of the other Farm divisions the closest co-operation will be followed so that well co-ordinated research work may result.

Scope of the Work of the Division

The field for investigational work will touch intimately the work of the other Farm divisions in their very diverse activities. Studies in connection with pure milk production and maintenance and with dairying in general will occupy an important place. The wide field of soil bacteriology will also be emphasized. In this connection problems of agronomy offer a wide field for work in conjunction with the Divisions of Field Husbandry, Forage Crops, etc. Soil microbiology is still practically an unexplored field in Canada and the division aims at attacking soil problems from the biological angle,—one which has been heretofore most neglected. Scope for investigational work along other lines is suggested by such diverse problems as are concerned with the manufacture of ensilage, the preservation of food and foodstuffs, baking, the diseases of bees, poultry sanitation and incubation, the retting of textile plants for fibre.

Routine and Extension work

Apart from actual research, the division undertakes work of a more routine type, extending help outside, to the farming communities in particular. This work consists chiefly in the examination of water, milk and other dairy products, other food stuffs, and in the distribution of nitro-culture for legume inoculation. Seed or soil inoculation for legumes has been shown to be of distinct value in many parts of Canada, and this division is endeavouring to encourage this practice. To this end this division manufactures and furnishes free of charge to Canadian farmers nitro-cultures for inoculating the various leguminous plants. By placing a limit on the amount furnished to each person each year, competition with commercial firms manufacturing nitro-cultures is avoided.

Investigational Work in Progress

Following upon the equipping of a laboratory in September, 1923, research work was commenced, and at present investigations are in progress as follows:—

(1) Pure milk production with reference to sources of contamination and their relative importance, with special application of remedial measures to rural conditions.

(2) Bacteriological studies in flax retting. An attempt to study the process, the aim being to regulate it better and to secure a quicker retting with better uniformity of product than possible under uncontrolled natural conditions.

(3) Microbiological studies on soils during the winter. This is an attempt to obtain some insight into the life of frozen soils under typically Canadian conditions.

DIVISION OF ILLUSTRATION STATIONS

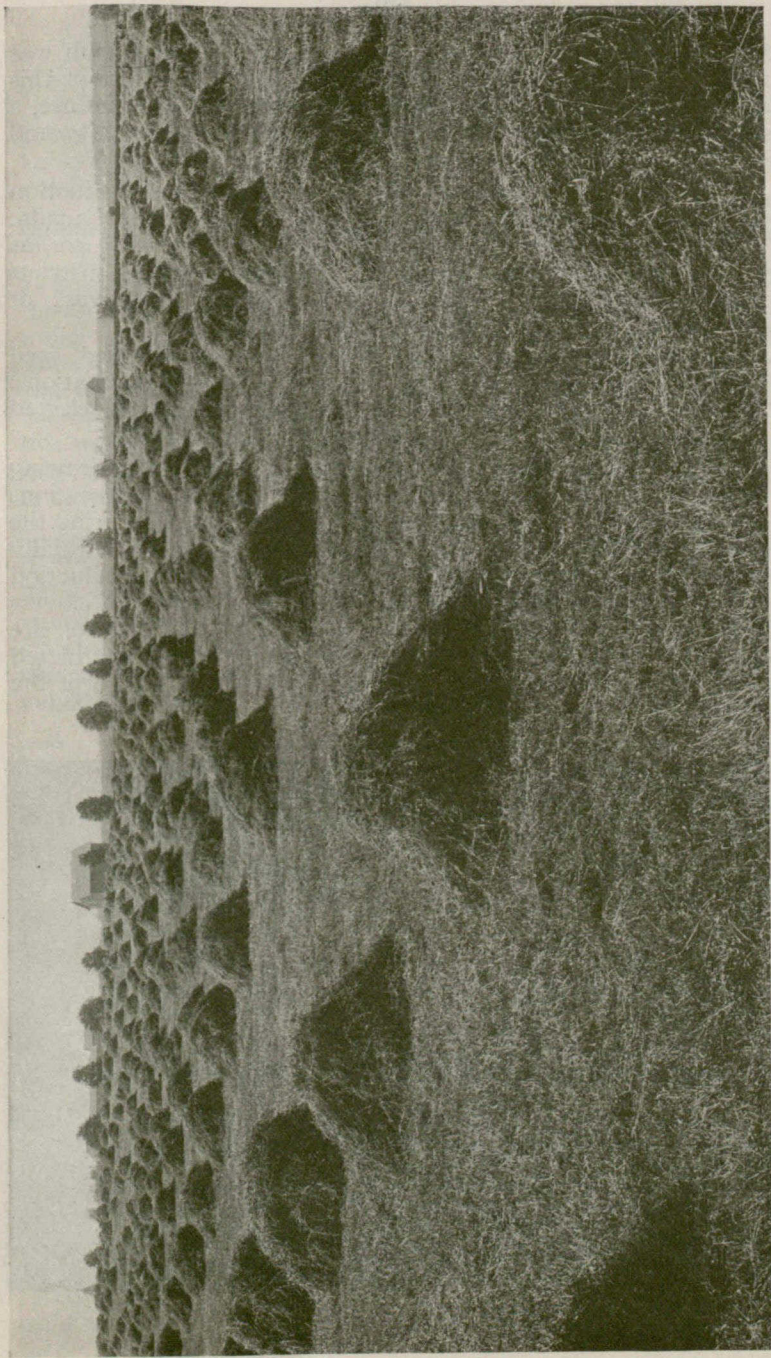
The object of the Illustration Stations is to serve as a connecting link between the Experimental Farms and the farmer. In order to demonstrate the usefulness and the increased monetary return accruing from the adoption of those practices recommended by the investigational and research divisions of the Experimental Farms, Stations have been established in the different provinces of Canada. At present, operations are being conducted on 143 Stations. In establishing an Illustration Station, the method of procedure is to rent from a representative farmer a portion of his land on which, under the direction of the division in charge, he undertakes to grow the best varieties of crops and to follow the best cultural practices as determined by the work of years on the Experimental Farms. These Stations are visited regularly by a trained agriculturist who advises the farmer who operates the Station, and gives assistance to other farmers of the district. These Stations are also visited frequently by the Superintendent of the nearest Experimental Farm.

Introducing New Varieties and Sale of Seed

In many districts the varieties of wheat, oats, barley, and forage crops best suited to local conditions of soil and climate are not being grown by the farmers. Varieties recommended by the nearest Experimental Farm are grown on the Illustration Stations, and seed grain thus produced is available to the farmers in the district served, at reasonable prices. In 1924, the operators of Stations sold 20,943 bushels of grain for seed, 9,399 pounds of clover and timothy seed, and 3,636 bushels of certified seed potatoes.

Home-Grown Clover Seed

It has been found by experiments and practical tests that home-grown or northern-grown clover seed gives best results. The operator of the Illustration Station and the farmers of the district are encouraged to grow clover seed for their own use. This has resulted, in many instances in the production of a surplus which was readily disposed of at good prices. This work has been particularly successful in the province of Quebec. In one district where an Illustration



This forty acre field yielded 3 tons of hay per acre from the first cutting. The second cutting in the same year yielded 1.2 tons. The Experimental Farms conduct experiments to learn how to produce large yields economically.

Station had been established, a clover seed growers' club was formed. During the four years, 1919-22, the members of this club produced, in addition to seed required for their own use, a surplus which brought in a cash revenue of between fifty and sixty thousand dollars.

**Encouraging
the use of
the Silo**

The value of ensilage for the economical production of milk and beef is generally recognized in Canada. In some districts, however, few or no silos are, as yet, in use. On the Illustration Stations in these districts silos have been erected and the value of corn, sunflowers or mixed crops, as ensilage, has been demonstrated.

**Potato
Growing**

Large quantities of disease-free or certified seed potatoes are grown on the Illustration Stations. Tests are conducted on other parts of the farm with selected and unselected seed planted side by side for comparison.

**Field
Meetings**

In addition to signs placed along the highway drawing attention to varieties of crops being grown, rotations followed, etc., field meetings are held on the Stations during the growing season to which the farmers in the district are cordially invited. At these meetings details relative to the production of the different crops, the varieties of grain, grasses and clovers being grown, preparation of the soil, rates of seeding, etc., are discussed. In this way many of the results of the work conducted on the Experimental Farms are brought to the attention of the farmers in their own districts.



Sheep in pasture Central Experimental Farm, Ottawa.

DIVISION OF EXTENSION AND PUBLICITY.

This division, formed in 1914, is another connecting link between the Experimental Farms and the farmer, by making the valuable results of the work of the former as widely known as possible.

Educational Exhibits One of the chief means to this end is the placing of exhibits of an educative character at as many as possible of the fairs and agricultural shows held throughout the Dominion. During the year 1922-23, the number of fairs at which an Experimental Farms exhibit was shown was 124. The exhibit attendant answers questions, distributes publications and invites farmers to have their names placed on the mailing list to receive "Seasonable Hints." An interesting feature of this work is the increasing demand for these exhibits at winter fairs, poultry shows and seed fairs, which gives an opportunity to cover a wider field.

Exhibition Circulars Practically every line of agricultural effort is covered by the publications of the Experimental Farms. In addition to the reports, bulletins and pamphlets issued, there are now in print about one hundred exhibition circulars, short and written in popular style, which are used principally for distribution at fairs as noted above, but are also valuable in sending to correspondents.

Press Articles Some two hundred short articles yearly are sent out to more than eight hundred of the daily and weekly newspapers and agricultural journals of Canada. This service constitutes an effective means of very quickly getting to the farmers much of the helpful information secured through the experimental work being conducted, and in times of outbreaks of disease or insect pests, when prompt information regarding methods of prevention or control is necessary, has proved of special value.

"Seasonable Hints" This publication, now entering upon its eighth year, is brought out every four months, and is distributed free to the entire mailing list. It contains short, timely articles and notes on the various branches of farming and the aim is to get it into the farmer's hands in time to be of use to him in his current work. It is limited in size to sixteen pages and is made up of contributions from the divisional officers at the Central Farm and from the superintendents of the Branch Farms. This publication has met with a very cordial reception and is now distributed to upwards of 400,000 farmers in Canada. With it are sent out, from time to time, lists of recent publications and once each year a complete list of the publications of the Department of Agriculture. From these

the farmer may choose such as are of interest to him, and which may be secured free of charge by applying to the Publications Branch, Department of Agriculture, Ottawa.

**Illustrated
Lectures**

Another feature of this division's work which is proving very popular is the supplying of sets of lantern slides, all dealing with some feature of agriculture, to farmers' societies, poultry clubs, horticultural societies and other organizations. With each set of slides is sent an explanatory manuscript which may be read as the slides are projected. In addition, a number of the Branch Farms have been provided with lanterns and sets of slides for lecture work.

This division also sends out literature in response to requests received through the mails, prepares charts for the use of officers at the Central Farm and Branch Farms, maintains a central bureau of lantern slides for the Experimental Farms and conducts many other such lines of work as occasion demands.

GENERAL

Publications The bulletins, pamphlets, circulars and other publications of the Experimental Farms cover practically every phase of agricultural effort in Canada. They embody the best thought and latest results of the experimental work being conducted, and may be obtained, free of charge, by applying to the Publications Branch, Department of Agriculture, Ottawa, or to any Branch Experimental Farm in the Dominion.

Correspondence This of course, constitutes one of the main avenues of communication with the farmers. Special inquiries are numerous. Those who submit their problems are aided by personal advice.

Building Plans Working drawings, together with bills of material, of barns, piggeries, stables, poultry houses, ice houses and other farm buildings may be secured by writing to the Central Experimental Farm, Ottawa.

Lectures, Short Courses, Demonstrations and Judging The demands upon the time of the Experimental Farm officers for these purposes are very heavy each year, and are met as far as the other work will possibly permit. In addition to the information given, those attending are brought into closer touch with the Farm's work.

Excursions Excursions to the Farms are frequently arranged. These are well attended and great interest is shown. Short lectures and demonstrations are given and the various features of the work explained during the trip over the Farm. This brief outline of the work of the Experimental Farms has but touched on some of its more outstanding points. An endeavour has been made to point to a few of the many ways in which assistance is given to farmers and others and how it may be secured. Further information regarding the Farms or their work may be obtained by writing to the Publications Branch, Department of Agriculture, Ottawa, Canada.

CHIEF OFFICERS DOMINION EXPERIMENTAL FARMS

E. S. ARCHIBALD, B.A., B.S.A., DIRECTOR

Dominion Animal Husbandman.....	G. B. ROTHWELL, B.S.A.
Dominion Field Husbandman.....	E. S. HOPKINS, B.S.A., M.S.
Dominion Horticulturist.....	W. T. MACCOUN
Dominion Cerealist.....	L. H. NEWMAN, B.S.A.
Dominion Agrostologist.....	G. P. MCROSTIE, PH. D.
Dominion Poultry Husbandman.....	F. C. ELFORD.
Chief, Tobacco Division.....	C. M. SLAGG, M.S.
Dominion Apiarist.....	C. B. GOODERHAM, B.S.A.
Chief, Division of Economic Fibre Pro- duction.....	R. J. HUTCHINSON.
Dominion Chemist.....	F. T. SHUTT, M.A., D.Sc.
Dominion Botanist.....	H. T. GÜSSOW.
Dominion Agricultural Bacteriologist.....	A. G. LOCHHEAD, PH.D.
Supervisor, Division of Illustration Stations.....	J. FIXTER.
Chief, Division of Extension and Publicity.	F. C. NUNNICK, B.S.A.

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