mological and botanical laboratories, experiments relate to the control of insects and fungi, the study and treatment of soils and other similar lines of investigation.

QUEBEC.

Macdonald College, Ste. Anne de Bellevue.—The College is situated about 20 miles west of Montreal and is incorporated with McGill University. The College property comprises 786 acres divided as follows: main farm, 584 acres; cereal husbandry plots, 75 acres; poultry department, 17 acres; orchards, 35 acres; vegetable gardens, 25 acres; the campus, including driveways, lawns, trees, shrubs, flowerbeds, school garden and recreation fields for students of both sexes, 50 acres. The following is a brief indication of some of the more important experiments, as to which information may be obtained from the College report of 1917-18.

Bacteriology.—(1) A comparison between the single heating method (cold pack) and the intermittent sterilization process in the canning of vegetables. It was found that for peas and corn the single heating method was not reliable enough to be recommended for general use. (2) A systematic analysis of the Ottawa river water and the efficiency of the Jewel filter installation. The filter was found to be very effective, but constant expert supervision is necessary. (3) A comparison between the Omega and Empire milking machines. This investigation is in its second year, and valuable data have been obtained. A bulletin will be published as soon as this investigation is finished. In the meantime it may be stated that the customary methods of cleaning the machine parts are insufficient to obtain reliable milk. (4) The number and types of bacteria found in winter in Quebec soils. An early winter frost with little snow will prevent any bacterial growth. Any early snow-covering—excluding severe frost penetration—allows an active bacterial development.

Biology.—In addition to instruction which forms the major part of the work of this Department, investigations have been conducted along several lines. The life-history of the Bud moth, one of the most serious pests of apple orchards in Quebec, has been fully studied with the object of determining the best method of control. Experiments were conducted in a badly infested orchard for three years, and the results showed that two sprayings with lime-sulphur (sp. gr. 1·008) to which lead arsenate was added at the rate of five pounds (paste) per 100 gallons, first when the leaves were fully expanded, and secondly three or four days before the blossoms opened, reduced the infestation to ten or twelve per cent. Experiments were also conducted in collaboration with the Bacteriology Department to determine the value of D'Herelle's *Coccobacillus acridiorum* culture as a neans of controlling locusts and grasshoppers. It was shown quite conclusively that this culture is not effective under Quebec conditions.

Much work of a purely technical character has been carried on in the anatomy and histology of certain insects, notably the cater-