

centrifugal methods; the pasteurization of milk for Cheddar cheese-making; comparison of commercial and home-made rennet extracts, with pepsin and a mixture of pepsin and rennet as coagulants of milk for cheese manufacture; the effect of paraffining Cheddar cheese on loss in weight and quality of cheese; effect of temperature of whole milk on capacity of belt and turbine power separators and on the percentages of fat in cream and skim-milk; effects of variations in percentage of fat in whole milk, variations in speed of hand separators, effects of different volumes of flushing material, on the percentage of fat in the cream and losses of fat in skim-milk; comparison of effects of pasteurizing sour cream at temperatures between 140°F. and 180°F. on losses in buttermilk and keeping quality of butter; effect of neutralization of the acid of cream with lime water before pasteurization on losses of fat during churning and on quality of the butter when fresh and after holding in cold-storage for three months; losses and variations in box and print butter.

*Department of Entomology.*—The life-histories and habits of injurious insects are studied in the field and laboratory. Experiments are conducted with methods of control. Bulletins and leaflets containing instructions for farmers, gardeners and fruit-growers are from time to time published; also an annual spray calendar. Much attention is paid to the identification of specimens and to giving practical instructions for the control of insect pests to a large number of correspondents throughout the Province.

*Department of Field Husbandry.*—One hundred acres of the College farm are devoted to field experiments with farm crops. This area is divided into about 2,500 small plots, and the experiments include tests with all varieties of farm crops, selection of seed, hybridization, dates of seeding, quantities of seed per acre, methods of cultivation, application of fertilizers and manures, production of grains and grasses in different combinations, etc. This department has originated or introduced a number of varieties of grains which have added thousands of dollars to the value of the annual crops of Ontario.

*Department of Horticulture.*—Plot experiments with varieties of vegetables and in the cross-breeding of varieties are conducted, also methods of cultivation, etc. Small, bush and tree fruit varieties have been tested; with strawberries plant breeding has been practised quite extensively, and some varieties of exceptional quality have been originated. Plans for the improvement and decoration of home, school and institutional grounds are prepared, and advice is given on landscape gardening. Spray mixtures for vegetables and fruits are tested.

*Department of Physics.*—Much research work is being done in soil temperature, lightning rods, insulating materials, the manufacture of drainage tile, etc. A staff of surveyors is maintained during the summer months to survey farm land for underdrainage. The yearly average area surveyed is about 15,000 acres. Considerable attention is being paid to farm power, also to farm sewage disposal and farm water supply. In connection with the last named, the Department possesses an electrical waterfinder for locating underground