

temperature and the electric furnace. The problem is to secure the economic utilization of the enormous amounts of low grade ore now existing in Canada.

The results so far obtained with solid reducing agents are very satisfactory and will form a valuable basis for further attempts either on a laboratory or a work scale to construct continuous reducing appliances for iron ore. The iron ore, iron and steel and their products, annually imported into Canada exceed \$120,000,000 in value, 96 p.c. of the iron ore used in Canada being imported. If methods can be found which will make possible the economic utilization of the low grade iron ores of Canada, the greater part of this importation will be unnecessary.

For a research on the grading of dairy products (cream and butter) a grant has been made to Professor Wilfrid Sadler, of the Department of Dairying of the University of British Columbia. This investigation was undertaken to correlate, if possible, the grading of cream and butter with the bacterial content of the milk or cream used in the preparation of these products. It is very probable that the data which will result from this investigation will make possible a uniform and standard system of grading which will determine the keeping qualities of cream and butter from various sources, all in relation to special bacterial forms present.

A grant was also given to Captain F. M. Dawson to enable him to undertake researches on the microscopic character of cement, in relation to its hydration and its physical properties. Disintegration, through the action of alkaline soil waters, has become a serious menace to cement structures in Western Canada, where it is found necessary to replace concrete several times in a generation, the loss being estimated in millions of dollars annually. It is not, as yet, fully understood how this disintegration occurs and in view of the importance of the problem the Research Council proposes to undertake it on a scale that will insure determinative results, if the required expert organization can be constituted, and if it can provide the required funds for this purpose.

An investigation by Professor W. P. Thompson of the University of Saskatchewan, to produce a variety of wheat which will ripen earlier than the Marquis, be resistant to rust and have good milling and baking qualities, is in progress. It has been found that varieties of wheat cultivated in the district and found to be immune to the rusts prevalent there, may not when grown in another district be resistant to the rusts of that locality. It has further been demonstrated that when a single wheat plant is inoculated with the rusts from different sources it is susceptible in a greater or less degree to some of these, while it usually is more or less resistant to the rest. This has made it clear that there are strains of rust which differ in their virulence. Professor Thompson and his associates have produced a number of hybrids which have proved resistant to the rust strains investigated up to the present, but they do not expect them to prove resistant to strains not yet studied. This