

harvesting period, better limestone and fuel facilities, and more intensive agriculture generally practised would augur a better chance of succeeding with this entirely new industry.

Some sugar-beet is now being grown at Ashburton, and arrangements have been made with Mr. A. Macpherson, Fields Instructor, to assay some of the roots for their percentage of sugar. It is rather curious that Canterbury is a district from which no beets have ever been tested in this Laboratory for sugar-percentage, although much work has been done on samples from Ruakura, Waikato, Auckland, Moumahaki, and Otago. A leading article in the *Christchurch Press*, of 18/2/20, summarized the work of this Department in the matter.

#### DIATOMACEOUS AND SILICEOUS EARTHS.

Excellent samples of these earths continue to be received from widely spread localities, showing that there is no necessity to import this material for manufacturing purposes. A note on the subject, was published in the *Journal* for March, 1920.

#### INDUSTRIAL AND MISCELLANEOUS.

*Wool-greases.*—Machinery for separating wool-fat in a wool-washing plant has been installed at Oamaru, and is reported to be working satisfactorily.

*Wool-refuse.*—A sample of wool-refuse, the cleanings from wool badly contaminated with the common New Zealand burr, utuwai, piripiri, or bid-a-bid (*Acaena sanguisorbae*), was found on analysis to contain 6.8 per cent. of fat. Wool-fat is evidently absorbed to a great extent by the utuwai. This was interesting enough; but when the sender explained that such utuwai when left in a heap spontaneously took fire and burned to an ash, the subject became more important. Fires in wool-ships, which were so disastrously common some ten or twelve years ago, may have been caused by the practice of shipping bales of very "seedy" wool. The idea seems to merit further inquiry, bearing in mind the extremely hygroscopic nature of wool-grease, and the ease with which vegetable fibres will spontaneously take fire, provided suitable amounts of moisture and conditions for retaining the heat generated are present. A note was inserted in the *Journal* for November, 1919, calling attention to the matter.

*Arsenic-supplies.*—Assistance has been given—in conjunction with the Customs Department—to manufacturers of sheep-dips to enable them to import arsenic from Japan in tins instead of iron drums, as provided by the regulations.

*Red-clover Seed.*—An interesting specimen of red-clover seed, in which masses of the seed were balled together with some syrupy matter, was submitted by the Biologist. The substance dissolved in water, and reduced Fehling's solution without previous inversion. It now appears that the phenomenon is well known in America, and is caused by an aphid.

*Quality of New Zealand Leather.*—The quality of the leather produced in New Zealand has been under review, and a preliminary report has been furnished to the Director-General as to certain objectionable practices adopted by some tanners.

*Paint Materials.*—Several samples of soft carbonate of lime have been submitted to a firm of paint-manufacturers with a view to the discovery of a source of putty-powder which all has to be imported at present. No sample was found to be suitable for the purpose.

*Sulphur-supplies.*—The importance of ensuring a continuance of supplies of sulphur has claimed a share of attention. At present the bulk of our supplies comes from Japan. There are, however, large quantities of sulphur in the thermal district of the North Island, and these, if more accessible, would undoubtedly be worked. Reports on the subject have been submitted to the Director-General.

*Fencing-wire.*—Information regarding means of testing fencing-wire has been collected with a view to instituting some protection against inferior qualities.

#### SAMPLES RECEIVED.

The following is a list of samples received during the twelve months under review: Soils collected by Chemist, 156; soils collected by field officers, 214; miscellaneous soils, 98; limestones, 161; barks for tanning and dyes, 12; reputed phosphates, 51; fertilizer and reputed fertilizers, 104; fertilizers sampled under the Act, 35; butter, 37; milk, 15; toxicological specimens, 13; stock-foods, 6; waters, 13; spraying-materials, 8; grass-seeds, 8; oils, 7; sheep and cattle dips, 4; sheep-drenches, 2; honey, 4; cheese, 3; miscellaneous minerals, 19; other miscellaneous samples, 16: total, 986.