

in succession, was the best of the miscellaneous samples from Ashburton; other undoubtedly good-quality wheats from the same locality were Yeoman, Marquis, and Red Fife. Only a few of the better-known varieties were received, but Velvet again maintained a good average quality. Certain important correlations were discovered between the chemical analyses and experimental baking-tests and these have been published.

Details of the year's work on milling and baking tests of New Zealand wheats and flours were published in the Department's *Journal* for November and December, 1925, and January and February, 1926.

CATTLE-DIPS.

The necessity for a regular inspection of the strength of the public cattle-dips was demonstrated by the wide variations from standard strength shown by the earlier samples forwarded for examination. Under the system outlined in the last annual report 297 samples were received and reported on during the year, with very satisfactory results, it being noticeable that the dips are now much more carefully regulated, the standard strength being in most cases well maintained.

FERTILIZERS.

Five official samples were submitted for analysis under the Fertilizers Act during the year, while unofficial samples for comparison with the guaranteed analyses totalled eighteen. In no case was there found any deficiency to the prejudice of the purchaser.

An amending Fertilizers Bill has been drafted. The registration of vendors of fertilizers under the Fertilizers Act, 1908, has been carried out by this Section as in previous years.

The annual review of the importation of fertilizers was published in the *Journal* for May, 1925, and quarterly returns were published as usual.

TOXICOLOGICAL.

Thirty-two specimens were received for examination in connection with the suspected poisoning of animals. Further instances of the loss of valuable stock through the improper use of strong arsenical dipping-fluids have come under notice. In several cases of mortality in pigs there was good reason to suspect that the trouble was due to excess of sodium compounds in the food. In many cases sent for investigation there is little possibility of obtaining definite results owing to the inadequate nature of the specimens. As toxicological examinations consume much valuable time it is intended to seek the co-operation of stock officers in limiting such specimens to cases in which the results are likely to be of some general interest and value.

LIME AND LIMESTONES.

A large number of samples of calcareous deposits were received from farmers and other interested persons. Among the samples submitted were several of soft-limestone deposits of high grade which would require no grinding or treatment other than drying prior to application to the land. The periodical notes on the more useful limestone deposits of which samples had been received were brought up to date in an article in the *Journal*.

WORK FOR OTHER DIVISIONS.

For the Dairy Division analyses have been made of all classes of dairy products and of various preparations offered for use in the industry. Samples of parchment paper were examined for their suitability for use in butter-wrapping. In connection with the international butter competition held at Auckland full analyses were made of the eighty-two butters entered for competition. Samples of water and dairy-factory effluents, as well as cattle-licks and dairy salts, have been reported on, and advice has been given on many chemical questions affecting the industry. For the Live-stock Division analyses of dipping-fluids, feeding-stuffs, medicinal preparations, &c., have been carried out, and the meat-marking fluid for the use of Meat Inspectors has been prepared. For the Fields Division, soils, fertilizers, fungicides, and fodder crops have been examined and reported on. The Horticulture Division submitted samples of spraying preparations and materials, and honey, for analyses and report. In consequence of the reports from Britain of excessive amounts of arsenic in imported apples it was considered desirable to make a series of determinations of arsenic in samples of export fruit from the wharf stores and other sources. The amounts of arsenic found, while they showed great variation, were in no case sufficient to amount to a harmful dose under any ordinary conditions of consumption. The Te Kauwhata Horticultural Station was visited, and after analyses of the vineyard soils a scheme of manurial experiments was submitted, and is now in progress.

SUMMARY OF SAMPLES RECEIVED DURING THE YEAR.

These were as follows:—Soils, collected by Laboratory staff, 142; soils, collected by Fields officers, 126; soils, miscellaneous, 19; fertilizers under the Fertilizers Act, 5; fertilizers, unofficial samples, 18; fertilizers, miscellaneous, 9; reputed fertilizers and phosphate rocks, 61; limes and limestones, 83; paints and paint materials, 4; toxicological specimens, 32; wheats, 9; flours, pollards, and brans, 125; cheese, 19; milks and creams, 16; butters, 102; caseins, 11; honeys, 7; apples for arsenic, 10; waters, 27; fodder plants, 74; sheep and cattle dips, 297; fungicides, &c., 33; miscellaneous, 72: total, 1,301.

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