

## LIME AND LIMESTONE.

The work of advising farmers and others on the quality of limestone occurring in the different localities where lime is required, and the best methods of dealing with the supply required, has been continued, and sixty-one samples have been analysed in this connection. An account of the most interesting samples was printed in the *Journal* for July, 1923.

## FERTILIZERS.

Fertilizers have been analysed as follows: ten samples received from Inspectors under the Fertilizers Act, thirty-three samples from departmental officers, and eight from miscellaneous sources. The quarterly returns of importations of fertilizers have been prepared and published in the *Journal* from time to time, and the year's returns were summarized in the May, 1923, number. More frequent examination of the fertilizers on the market is most desirable.

An interesting discovery has been made by Mr. Furkert, Engineer in Chief, Public Works Department, in a deposit of phosphate of aluminium at the Three Kings Islands. Samples contained from 14.81 to 31.55 per cent. of phosphoric anhydride, but no calcium was present. From White Island was also received a sample of guano containing 1.4 per cent. nitrogen and 7.13 per cent. phosphoric anhydride. This would be worth £2 to £3 per ton after grinding. Both of these island phosphates were evidently derived from bird-dung.

## INVESTIGATION OF WHEAT AND ITS PRODUCTS.

The results of the examination in this Laboratory of the wheats of the Dominion have this year been made public by a series of articles published in the July, August, and September numbers of the *Journal* by Mr. L. D. Foster, Analyst. The results are highly instructive, and have been appreciated by those interested or employed in wheat-growing. In this work, milling tests, baking tests, and chemical tests have been employed. The whole investigation constitutes pioneer work of a very necessary and potential kind. Mr. Foster attended the annual conference of the Master Bakers' Association at Christchurch in January.

To ascertain if pollard as sold in the Dominion was being adulterated with bran, which is cheaper, the Board of Trade arranged to collect samples and to forward them for analysis and report. Fourteen samples were received. One of these was a genuine bran; the others were reputed to be genuine pollards. Eight of these came up to the required standard, one was a doubtful sample though probably genuine, and four undoubtedly contained more branny matter than is usually the case with fair average pollards. This may have been due to separation in the mill of the bran from the pollard on a coarser sieve than usual, or to adulteration. A sample of pollard produced in one mill may differ in feeding-value from a sample obtained in another—this is owing to differences in milling practice—and while such differences exist it is practically impossible to tell from an analysis when deliberate adulteration is taking place. When bran and pollard, however, are separated always according to uniform methods they yield grades which are characterized by distinctive chemical composition. Any adulteration of pollard with bran can in such cases be detected by analysis. For the protection of the farmer and the miller, and to make possible the detection of adulteration, it is desirable that methods of separation in the mill should, as far as possible, be uniform.

## TOXICOLOGICAL.

Unusually droughty seasons have been responsible for some poisoning cases during the past year. An interesting case of a number of fowls being fatally poisoned by the leaves of the African boxthorn (*Lycium* sp.) occurred at Wanganui in August. The fowls were confined in a bare run, but got access to the leaves of the shrub through the fence, and had eaten them as far up as they could reach. The identification of a couple of leaves of this plant in the crop of a fowl led to the detection of this uncommon cause of mortality. Further cases have come under notice of lead poisoning in cattle through access to newly painted buildings or old paint-cans. Cases of poisoning of sheep after dipping were submitted, but the account given and the specimens were too meagre to arrive at any definite opinion on the matter. Interesting cases of dermatitis through handling parsnip-seed in harvesting it were reported from the Moa Seed Farm, Otago. The cases were very similar to some reported from the United States. An article was prepared and published in the *Journal* for March, 1924, dealing comprehensively with the strychnine method of poisoning rabbits and the steps to be taken in case accidental poisoning in those handling the strychnine should result. The series of poisonous-plant articles were brought to a conclusion in the April, 1923, *Journal*.

## SHEEP-DIPS.

The compulsory registration of sheep-dips was the subject of a report submitted in November last. In the examination of powder dips it has been found that instructions should be given that the dip should be made up for twenty-four to forty-eight hours before using, to enable the active compounds of the dip to get fully into solution. The non-fulfilment of these necessary conditions may result in the dipping proving ineffective.

## BUSH SICKNESS.

This important research had been continued, and the whole of the past five years' work at the Mamaku Demonstration Farm has been summarized for publication. Further experimentation with curative medicines has been carried out, and several visits have been paid to the affected country.

## WORK FOR LIVE-STOCK AND DAIRY DIVISIONS NOT OTHERWISE MENTIONED, ETC.

The Wallaceville pasture and mutton-production experiments have been continued, and visits of inspection have been paid to this farm. The making of medicinal licks in brick form has been