

## MISCELLANEOUS.

In a case where stock habitually licked the sticky mud round a small spring it was found that the water contained a half per cent. of common salt, this indicating the need for the provision of rock salt.

Another instance where sheep ate an earthy material occurred in Poverty Bay back country. The material was found to contain 6·46 per cent. of iron and alumina besides 1 per cent. of magnesia, and 0·7 per cent. of lime. As this was in the area where bush-sickness occurs, it was suggested that the animals were seeking iron, and that a lick of iron carbonate, bonedust, and salt would be beneficial.

An interesting sample from the Greymouth district proved to be "hair salt" or hydrated aluminium sulphate.

A case of brown stain developing in pulled wool was investigated. Traces of iron and sulphide were found, the latter evidently being derived from the mixed calcium and sodium sulphides used for removing the wool, but the source of the iron was not determined.

Inquiries have been received and instructions issued concerning the precautions to be observed in using sodium chlorate for weed-destruction. It is only in the dry state that it is explosive or promotes vigorous combustion, so that the chief precaution is to immediately wash or burn all inflammable material with which the solution has come into contact.

## WORK FOR THE DEPARTMENTAL DIVISIONS.

*Live-stock Division.*—The periodical examination of the public cattle-dips of the Auckland and Taranaki districts has been continued. A number of proprietary remedies for cattle-diseases have been analysed, and confidential reports furnished to the veterinary officers. Analyses have been made of thyroids, bones, and other tissues in connection with the investigation of stock-diseases. Stomach-contents and other toxicological specimens have been examined. A natural deposit contaminating a water-supply and suspected of being the cause of mortality in stock was found to be alum. In another case large amounts of sulphuretted hydrogen were found in a well water. In a case where sodium chlorate was suspected of poisoning a cow no chlorates could be detected in the stomach-contents. Analyses have also been made of meat-meals, stock-licks, &c. A case of suspected bracken poisoning of cattle came under notice, but the investigation of the rather obscure poison of this plant could not be undertaken without special provision. A somewhat mysterious case of sheep-poisoning, apparently due to some native plant occurring near Tokaanu and in some other localities in the central North Island, is under investigation. The symptoms and circumstances indicate the possibility of *Pratia angulata*, a lobeliaceous plant, being responsible. Previously this plant has not been suspected of causing mortality among stock, though a near Australian species is known to possess toxic properties.

For the *Fields Division* soils, fertilizers, limestones, weed-killers, &c., have been analysed. A sample of seaweed from the Auckland Province was found to contain 4 per cent. of potash, which is unusually high. Nevertheless its chief value as a manure probably lies in the organic matter it supplies to the soil. For such purposes it cannot be transported far.

For the *Dairy Division* work has included standardization of apparatus, analyses of butter, cheese, casein, acid-neutralizers, &c. One sample of butter suspected of adulteration was found to have a peculiar composition and reactions, but unfortunately its history was not available. The feeding of certain oily meals was suspected. Various stock-licks and tonics have been reported on. Samples of cheese showing patches of dark discoloration were found to contain traces of lead. Lead was also found in some samples of annatto colouring material used in the factory where the cheese was manufactured. Samples of low-acidity wheys were examined for the presence of rennin. It appeared, however, that the enzyme present, if any, was not rennin, and was rather unstable.

In some bees examined for the *Horticulture Division* traces of arsenic were detected. Owing to the smallness of the sample, it could not be decided, however, whether the amount present was sufficient to have caused the mortality.

## ALKALOIDS OF THE PUKATEA.

In response to a request from Dr. Fogg, who is studying the physiological effects of puketeine, and had intimated that it might be of clinical use, a supply of the substance was prepared. The chemicals necessary were defrayed out of a grant from the New Zealand Institute.

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