

or walking about slowly for an hour or more without attempting to eat, when another attack came on similar to the first, but rather longer. Again she seemed to recover completely, but a third and final attack came on which lasted over two hours, and ended in death about six hours after the first symptoms appeared. During the three attacks the eyeballs were strongly distorted, appearing to shrink inwards, and turning downwards until only the whites were visible. Towards the end breathing was very difficult, the head being thrown back as far as possible, while the legs were still jerked about spasmodically. A little froth appeared at the mouth, which was firmly closed all the time. During this very dry weather my cows have spent most of their time on a swampy flat, covered for the most part with rushes and raupo, and a little tutu in places. There are also several species of buttercup present. Would waoriki (*R. rivularis*) or other species of *Ranunculus* produce the symptoms described? What treatment, if any, do you advise?

2. Part of my land is on the banks of the Waima River. The upper stretches of the Waima as far as Taheke are bordered with willows, the lower as far as Rawene with mangroves. My place is between the two, too fresh for mangroves and too salt for willows. A large area of flat is just above ordinary high water, but is covered in places by an occasional high spring tide. Drainage would be difficult and costly. I intend to try *Poa aquatica* on it this winter. Will it stand an occasional dose of salt or brackish water; and, if not, can you recommend any other grass suitable for such a situation?

The Live-stock and Meat Division replies,—

From the description you give of the symptoms it would appear that some poisonous agent was the cause of death. What this was is doubtful. Animals poisoned by the different species of the *Ranunculaceae* generally show symptoms of colic, salivation, diarrhoea, often spasms, grinding of the teeth, &c.—in fact, act as gastro-enteric irritants. Tutu, on the other hand, seems to have a specific action on the brain, paralysing the nervous functions. One result of this is the accumulation of gas in the rumen or first compartment of the stomach. This "hoven" condition, by pressing on the lungs and heart in the thoracic cavity, soon causes death of the animal unless relief is afforded by puncturing the rumen, and other remedies, such as preparations of ammonia or other stimulants. An answer to a correspondent on tutu-poisoning will be found in the November *Journal*, 1911, page 234. You do not appear to have made a *post-mortem* examination. If this had been done it would have been more satisfactory.

The Fields and Experimental Farms Division replies,—

Poa aquatica is not very tolerant of sea-water, but it will endure occasional periods of submersion, provided they do not last more than a day. It will not, however, endure being covered a short time by each tide. The best grass for actual salt ground is the American wild rice (*Rizania aquatica*). This grass is naturalized on the banks of the Northern Wairoa. It is not of much value for feed, but is mainly a soil-protection grass.

MANURES.

"PURI PURI," Hapuku, Kaikoura, writes as follows:—

Would a dressing of the advertised potato-manures, and likewise mangel-manures, do for land that I think is a bit worked out, instead of using new ground? It is only a small area turned over with the spade, and this year my potatoes and mangels are a poor crop. If so, how much manure would you suggest? Can too much be put on, and what time in the spring is the best to apply the same? Also, how do you account for a few sets of potatoes doing well, whilst most of the sets in the same rows were poor, the seed being all well sprouted before planting.

The Fields and Experimental Farms Division replies,—

The proprietary manures advertised by many merchants in New Zealand may be accepted as decidedly valuable for the various crops which they are designed to fertilize. On land such as you describe (somewhat worked out) they would undoubtedly be beneficial. As the area you mention is but small and is cultivated with the spade, the condition of the soil could be greatly improved by the application of manure from the stable, yards, or cow-shed. It is impossible to advise you