

There is a strong local opinion that the stock by drinking spring-water are thereby cured of bush sickness, or if pastured in the vicinity of springs or creeks never become bush sick; whereas if the drinking-water for stock is supplied from rain-water caught and stored in concrete tanks or cisterns the animals suffer from iron-hunger. Analyses of the waters from springs and tanks, however, afford no evidence to support the truth of this local belief. The explanation of the immunity from iron-starvation which stock enjoy in country which is well watered with springs is probably that in such areas the soil is well supplied with moisture from the high land. The greater moisture content of the soil enables the pasture to absorb larger amounts of plant-food, especially iron, from the soil around it. Such immune areas are not more than 100 ft. to 350 ft. above lake-level, but the worst country is some 400 ft. to 600 ft. above the lake and contains no running water or signs of springs.

An instance was given to the writer by the manager for a very well known landowner who has interests in this area of a mob of 1,000 sheep from Hawke's Bay which were kept here from the end of January until August. Those pastured on country with springs went ahead, but those pastured on adjacent land containing no springs and supplied only with tank-water did not improve in condition. When, however, they were transferred to land with springs they improved like the others.

The obvious treatment which these facts demonstrate as fitting for the farmer to practise on such country is to fence off the area showing unusual moisture in the soil, and to endeavour to enhance to a greater degree the superior fertility which it shows over the drier country by applying the best top-dressing that can be procured. The one that has been found most effective at the Mamaku Demonstration Farm is a mixture of superphosphate and basic slag of high grade. This mixture is a fertilizer containing all the mineral plant-foods which bush-sick country needs—iron, phosphates, calcium in non-caustic form, and sulphur—as well as such elements as manganese. Potash, it should be noted, is present in all pumice soils in comparative abundance.

The climate of the Kaharoa area is possibly much milder than that of Mamaku and even that of Rotorua, for the forest contains two trees, the mangeao and kohekohe, which indicate milder conditions. The forest, which is of the tawa-rimu type, is exceptionally tall, that at the end of the Kaharoa Road consisting as follows:—

Forest trees: *Beilschmiedia tawa*, *Dacrydium cupressinum* (rimu), *Knightia excelsa* (rewarewa), *Laurelia novae-zelandiae* (pukatea), *Litsaea calicaris* (mangeao), *Podocarpus ferrugineus* (miro).

Shrubs and small trees: *Aristotelia racemosa* (wineberry), *Carpodetus serratus*, *Dysoxylum spectabile* (kohekohe), *Fuchsia excorticata*, *Geniostoma ligustifolium*, *Hedycarya arborea* (porokaiwhiria), *Meliccytus ramiflorus* (mahoe), *Metrosideros florida*, *M. robusta* (rata), *M. scandens*, *Piper excelsum* (kawakawa), *Rhipogonum scandens* (supplejack), *Rubus australis* (lawyer), *Weinmannia racemosa* (tawhero).

Forest-floor plants: *Alseuosmia macrophylla*, *Aspidium hispidum*, *Asplenium bulbiferum*, *Astelia Solandri*, *Cyathea dealbata*, *Hymenophyllum* sp., *Lomaria discolor*, *L. capense*, *L. filiformis*, *Lygodium articulatum*, *Muehlenbeckia australis*, *Polypodium pennigerum*, *P. punctatum*, *P. serpens*, *Pteris scaberula*, *Uncinia* sp.