

“Rotomahana ash, deposited during the Tarawera eruption of 1886, is a mixture of fragments of rhyolite and of basalt. It is thickest on Wharenui and Puketawhero, where it ranges from 6 in. to 9 in.; on Tikitere it is between 3 in. and 5½ in.; on Taheke the 4 in. on the southern boundary thins to 2 in. on the northern boundary. The texture of the soil is that of a sand loam on Puketawhero and Wharenui, and a coarse sand on Taheke and Tikitere. On most of the steep slopes the grey ash is thin or absent, having been washed into the valley-bottoms, where it forms water-sorted beds of relatively small area. Underlying the grey ash are the gravelly sands and sands of the Kaharoa shower. The Rotomahana sands contain a low percentage of moisture during dry weather. The sandy loam holds the moisture fairly well. The ash contains more available iron than the Taupo pumice, and bush sickness is unknown on soils derived entirely from it. Over much of Taheke, the Rotomahana ash is 2 in. to 3 in. thick, and since Kaharoa ash underlies, a slight amount of sickness in sheep is to be expected.”

The fact that the Department can utilize “change” areas in the scheme itself offsets any bush sickness that may be met with.

Further extracts from the aforementioned report presented by the Scientific and Industrial Research Department for 1931–32 on a soil survey of these lands are quoted hereunder for reading in conjunction with the individual scheme narratives:—

“Much the greater area of the soils are formed from sub-aerially deposited Taupo pumice (rhyolitic in composition). The deposit is in general 22 in. thick on Horohoro, 13 in. on Parekarangi, and 9 in. on Peka and Tihiotonga. Underlying the Taupo pumice on all these areas is the Mamaku shower.”

Two soil types are to be found:—

“(a) Taupo sandy silt on rolling and flat country; and

“(b) Taupo free sandy silt on steep slopes.

“In many places on the steep slopes, the Mamaku medium sands are mixed with the Taupo pumice. On well-defined terraces bordering the main streams on Horohoro the parent material of the soil is water-sorted Taupo pumice. The textures are those of sands, sandy silt, and silt. These water-sorted sands cover a relatively small area. Small patches of loam, usually swamp, occur in many of the valley bottoms.

“Taupo sandy silt after a period of dry weather contains more than four times as much moisture as the Rotomahana sand and the Kaharoa gravelly sands at Tikitere, as much as indeed the loams of the Waikato. This high moisture content is no doubt largely due to the silt fraction, which packs so closely together. Taupo pumice soils will not dry out badly during a prolonged dry spell.

“In several districts stock depastured entirely on Taupo pumice soils are liable to develop an anæmia which is usually called ‘bush sickness.’”

This “bush sickness” is probably due to the soil being low in available iron.

On the Atiamuri Road the Department is cultivating lands on which the available iron is low, and therefore safeguards have to be used in the management to guard against this malady in stock. Little difficulty has been experienced to date with “bush sickness” on these schemes, but every precaution is taken in the stock management.

It is interesting to note the method now adopted in bringing in the pumice lands, which is as follows: Clear, plough, leave fallow for six months if possible; work and cultivate until a thoroughly good seed-bed is assured; and sow a mixture of 40 lb. of grass-seed together with 3 cwt. superphosphate per acre. Afterwards annually top-dress with 2 cwt. of super per acre. Directly the grass has made a proper strike, constant stocking with bullocks or wethers for at least three years is required, and if this practice is carried out, the fourth year will result in a good pasture suitable for the establishment of dairy herds.

The local Supervisor states that the Atiamuri Road lands will fatten 3½ to 4 wethers to the acre in the season; or 3 ewes to be carried and lambled, and lambs put off, but not carried over; or they will carry 1 dairy cow to 1½ to 2 acres or will fatten a bullock to 2 acres. Two-year-old bullocks put on as stores in the autumn will go off fat the following March.

In the Bay of Plenty district there are sixteen schemes, reaching from Whakatane to Cape Runaway, comprising a total area of 86,895 acres, of which 25,461 acres are at present under development and a further 21,000 acres are considered suitable for settlement. The number of farmers already established total 322, and further holdings are being settled as development proceeds. The live-stock returns for this group of schemes is as follows: 9,170 dairying stock, 10,193 sheep, and 719 run cattle. Sales of butterfat, wool, and live-stock show an appreciable increase over the previous year, and the settlers in this district are gradually increasing the carrying capacity of their farms and are making steady progress under supervision.

The following details of the Department's operations will illustrate not only the extent to which the Native land development policy has been carried out in the Rotorua district, but also the results and measure of success which have been obtained thus far.

Horohoro.

The Horohoro scheme, located along the main Atiamuri Road outward from Rotorua, marked the commencement in February, 1930, of experimental work on the development of Native lands. From the organization which brought these pumice areas into cultivation, the other schemes in the Waiariki district have grown, and that organization has been modified and improved by experience. In the comparatively short period of active development of these lands hitherto unproductive, the