

CLIMATE.

The inland pumice areas receive a rainfall of about 50 in. per annum; the mean annual rainfall for forty years at Rotorua is 55.72 in., with 143.8 wet days. Frosts are common on the elevated inland districts and may occur at any time of the year. Rotorua, 925 ft. above sea level, has 85 days in the year with ground frosts; the months of most frequent frosts being May (11 days), June (14 days), July (16 days), and August (16 days). On the open pumice plains cold winter winds from the snow-clad mountains in the centre of the Island add to the severity of the climate. Shelter plantations are essential in dairy-farm development. Unseasonable frosts sometimes hinder pasture establishment, killing the germinating clovers. October is usually the best month for spring sowing of grass, and late February for autumn sowing.

SURFACE COVERING.

The elevated plateaux of rhyolite are often densely wooded, and the rimu-tawa and totara forests predominate. On the open plains of recent air-borne and water-borne pumice-stone the porous sandy soil gives rise to semi-arid conditions, and the vegetation consists of a tangled mass of tea-tree (manuka) and manoa, with open spaces covered with tussock. The extent of tea-tree and manoa scrub on the open pumice country depends a good deal on its situation. Manoa scrub is usually dominant on the colder flats and tea-tree on the warmer hills and sidings. Bracken fern and tutu cover most of the larger hills rising out of the pumice plains. The height of the tea-tree varies from 2 ft. to 10 ft., depending on whether fires have recently swept the country. Near the main roads, where fires are common, tea-tree and manoa scrub are short, but away from the roads much of the country is clad in fairly dense 5 ft. to 8 ft. tea-tree and 3 ft. to 4 ft. manoa.

FARM CROPS.

Pumice land is a light sandy soil and easy to cultivate. When first turned over it will grow fair turnip and luxuriant red clover crops. The ability of pumice land to produce these crops at a low cost has been a great incentive to pumice-land development. Before the advent of certified perennial rye-grass seed the establishment of good permanent pastures was a difficult and costly business. The sowing of permanent or semi-permanent grass was usually preceded by temporary pastures of red clover designed to raise the fertility of the soil. Turnips were usually the first crop sown, and frequently red clover was drilled with the turnips. The rough red clover pasture was left down two or three years, during which time it considerably improved the soil fertility. Where turnips were sown alone the crop was usually followed by a temporary or long-rotation pasture, of which again red clover was the chief feature. After a second crop of turnips the land was sown down to permanent or semi-permanent grass consisting of perennial rye, cocksfoot, timothy, red clover, and white clover. The permanence of the pasture depended on the usefulness of the perennial rye sown and the attention given to top-dressing. Where good perennial rye was sown and the pasture regularly top-dressed, quite good