

was given a maximum rainfall of 100–150in. Recordings on the drier side of the range now give over 160in at 2,400ft and over 200in at 4,800ft. Likewise gauges recently installed on the Kaweka Range, the driest section of the axis ranges, suggest a figure of the order of 120in at 5,600ft as against an earlier estimate of 70 + inches.)

In relating the climate of the Kaimanawa Ranges to the surrounding topography the most important feature is the bulk of the central volcanoes (Ruapehu, 9,175ft) which overshadow them to the west at a distance of 10 miles and shield all but the extreme northern portion from the prevailing westerly winds. They are shielded from the southerly winds by the Ruahine Range, and this appears to reduce the winter snowfall, while the Huiarau and Kaweka ranges screen them from the easterly winds which give heavy rainfalls on the Hawke's Bay side during tropical disturbances.

The main exposures of the Kaimanawa Ranges are thus from the south-west up the Rangitikei Valley and from the north across the Kaingaroa Plains, though it also appears that the lower ranges beyond Lake Taupo are not an effective barrier, so that a considerable proportion of the Kaimanawa rainfall comes from the north-westerly quarter. The low rainfall of the Inland Patea even up to an altitude of 3,000ft is evidence against an appreciable south-westerly component.

Estimates based on the vegetation show a sharply defined boundary between an area of high rainfall, or at any rate of high humidity in the Northern Kaimanawa Range and the drier central ranges. These closely resemble the Kaweka Range in their vegetation, which indicates a dry, sunny, and windless climate as compared with the other North Island ranges.

However, the conditions cannot be identical. The Kaweka Range receives a considerable proportion of its rain and cloud from a southerly quarter, and some intense rainfalls from the east, whereas in the Kaimanawa Ranges rain and cloud appear to come mainly from the north.

The distribution of rainfall is now known along the southern and western margin of the area. It ranges from as low as 40in on the Ngamatea Plateau to 45–60in across the rest of the Inland Patea, the 60in isohyet roughly following the boundary between the southern and central areas which has been determined on replacement of forest by tussock grassland. Rainfall increases to 90in at the head of the Rangipo "Desert" with a further increase to 100 + inches half way down the Desert Road before falling away to below 60in at the southern margin of Lake Taupo.

In the interior of the range rainfall is estimated to exceed 100in over most of the Umukarikari Range and to exceed 140in along the crest of the higher Middle Range from Patutu to above the head of the Waipakihi River. North of this the vegetation indicates that the highest humidities, if not precipitations, occur in spite of lower altitudes, but no information of rainfall is available.

HISTORY

The history of the range in so far as it affects the vegetation established since the last Taupo eruption, may be divided into Maori occupation, European settlement, and botanical and geological exploration and investigation.

Local tradition (Grace, 1961) connects permanent settlement round Lake Taupo with the arrival of the latest migrants from the Pacific; at first by driving the earlier inhabitants away from the coast, later in stages over a period of 200 years or so (p. 132) by tribes claiming descent from the Arawa canoe. Those of the earlier comers as retained their identity were forced into the higher and less hospitable country bordering the main ranges.