

a bush than a large tree; its golden flowers are displayed in September; its timber is one of the most durable in the colony. In swampy land the maire tawhake, *Eugenia maire*, yields a timber of great durability: it attains 40 feet in height, and produces its yellow flowers in abundance. The rewarewa, *Knightia excelsa*, frequently attains the height of 40 to 50 feet, and produces a valuable timber for ornamental work, but of no great durability; its peculiar fastigate habit forms a striking contrast to the round topped trees among which it frequently grows. The large New Zealand fuchsia, *Fuchsia excorticata*, has a trunk from 5 to 20 feet in length, and often 2 feet in diameter: although frequently twisted and knotty its timber is very durable.

20. In this district the undergrowth is largely composed of *Alseuosmia*, an endemic genus of *Cuprifoliaceae*, intermixed with *Coprosma*s and numerous shrubs laced together by tataramoa (*Rubus australis*), supple-jack (*Rhipogonum scandens*), and mangemange (*Lygodium articulatum*), so that in many places progress is extremely difficult. So long as this dense undergrowth is not thinned or damaged by cattle or other external agencies, fire can make but little progress in a northern forest; but when it is thinned, or damaged, so that the surface becomes dry, and dead branches accumulate, the forest can be fired with little difficulty.

II.—Central or Totara District.

21. This district extends from Port Waikato on the West Coast to the Mokau River; from thence its boundary strikes inward by the southern flank of the Ruapehu and the Ohauko plains to the main range of the Ruahine, and is continued along the Tararua and Rimutaka Ranges to the western side of Palliser Bay. On the eastern side it extends to the sea from Palliser Bay, northwards to Tauranga Harbour.

22. The area comprised in the totara and red-pine districts (No. III.) is traversed by a range of mountains, extending from the East Cape to Palliser Bay, and forming a continuation of the Alps of the South Island. Its highest peaks rise to the height of 6,000 feet, and are only inferior to the volcanic mountains Egmont, 8,200, and Ruapehu, 9,200 feet. It is composed of palæozoic or lower mesozoic slates, sandstones, and quartzites; the slates sometimes banded, and the sandstones more or less crystalline. The lower flanks of the eastern slopes to the sea consist chiefly of pliocene clays, conglomerates, sandstones, marls, and limestones. The rocks of this formation are equally developed on the western side, occupying the greater portion of the area drained by the Rangitikei, Wanganui, and Patea Rivers. From Cape Egmont, by Lake Taupo, and the Middle Waikato Basin, to the Bay of Plenty, these later sedimentary rocks are buried under trachytic tufas and lavas which, continued northwards from the Cape Colville Peninsula in the kauri district, extend in an easterly direction nearly to Cape Runaway. Considerable portions of the Middle Waikato Basin and the Taupo district are covered with pumiceous drift and gravels. Recent gravels also occur for some miles inland on the West Coast, between the Wanganui River and Kapiti Island; and on the east side of the main range, over the area occupied by the Forty-Mile Bush and the Wairarapa Valley.

23. Between Tongariro and White Island, in the Bay of Plenty, is a vast assemblage of intermittent geysers, boiling springs, steam jets, solfataras, and sinter terraces, which do not exercise any marked influence on the arboreal vegetation by which they are surrounded, although tropical ferns, not found in other localities in the colony, flourish in the elevated temperature in the immediate vicinity of the more remarkable hot springs.

24. The climate of the northern portion of the totara district is the most agreeable and invigorating in New Zealand, and is much drier than that of the kauri district. Observations taken at Napier show the average mean temperature for the year to be 57°·5; for the winter quarter, 49°·1; summer quarter, 66°·2; the difference between the coldest and warmest months being 19°·2. The annual average rainfall is only 36 inches; prevalent wind N.E. On the West Coast the temperature is slightly higher in winter and lower in summer, with a rainfall of 50 inches. South of Napier the temperature is somewhat lower, with a rainfall of from 45 to 50 inches, and more frequent northerly winds.

25. The totara (*Podocarpus totara*) is found from 60 to 100 feet high and upwards, and from 4 to 7 feet in diameter; the trunk tapers much more rapidly than that of the kauri. The leaves are coriaceous, $\frac{3}{4}$ in. to 1½ in. long, lanceolate, pungent, and of a peculiar brown hue. When growing in rich alluvial soil, the trunk is straight, with few branches; but in rocky soils and open situations the branches are largely developed; and when growing on the crests of hills, the trunk is comparatively short, carrying a wide-spreading head. The totara district contains incidental blocks of tawa (*Nesodaphne tawa*) often of considerable extent; entire-leaved, tooth-leaved, and round-leaved beeches; black, red, and white pines; titoki, tea-tree, mapau, pokako, ribbon-wood, tawhero, hinau, with scattered trees or clumps of kauri and puriri in the northern portion, ngaio, broadleaf, &c., &c.

26. From Port Waikato to Aotea is a considerable extent of dense forest in which the kauri is occasionally found, as at Whangape and Wahi Lakes, the ranges opposite Ngaruawahia, &c. Small blocks of tooth-leaved beech occur on the hills; large quantities of white pine in the lowest parts, with red pine and large patches of totara. The red pine is often of large dimensions; puriri, although often extremely local, is not infrequent; maire tawhake, and pukatea are common in swampy land, and the kawaka occasionally on the higher ground. On the whole tawa and white pine are the most common trees in this portion of the district.

27. The heavy forest between Aotea and the Mokau cannot be examined at the present time, owing to the restrictions imposed by the Maoris. It is said to contain large quantities of red pine and totara.

28. Between Tauranga and Rotorua is a large extent of excellent mixed forest, in which tawa is abundant. It comprises red pine, which is plentiful in some places, totara, tooth-leaved beech, tane-kaha, tipau, mapau, &c., &c. Much of the red pine is of large size and well grown. In the East Cape forests of a similar character occur, but with a larger proportion of tooth-leaved beech, and in many localities of fine totara and kamai. At Ahikereru and Pohue totara is said to be plentiful, and of large dimensions, though at the latter place the best trees have probably been removed. Pohutukawa is said to occur at Waikaremoana, seventy miles from the sea. Totara occurs in many places in the