

The above three plants are closely related, *Celmisia walkeri*, Kirk, and the present described plant, being probably only varieties of *Celmisia discolor*, Hook. fl.

The figure on plate xv. is drawn of the natural size.

Locality.—Collingwood.

ART. XXXIV.—Notes on *Loranthus fieldii*, Buchanan. By H. C. FIELD.
Communicated by the President.

[Read before the Wellington Philosophical Society, 6th August, 1884.]

I WAS greatly surprised on looking over the last volume of Transactions* to find that a *Loranthus* of which I sent a spray to Mr. Buchanan in February was new to science. It is so abundant in the region where it grows, and that region has been so constantly traversed by Europeans—several tracks from Wanganui to Taupo passing through it—that I never dreamed that the plant could have escaped observation. Those ardent botanists, Dr. Curl and the late Rev. R. Taylor, both visited the locality to my knowledge. The latter indeed did so several times, and, as he spent a Christmas at Taupo, he must apparently have traversed the forest where the plant grows just when it was in blossom.

I first saw it in December, 1870, and have had so many opportunities of observing it since that date that I can describe it fully. It grows on the red birch trees, but only on the upper branches of large trees, where the bark is smooth and firmly attached to the wood. It is never seen on the trunk or large branches, which have their bark more or less rough and detaching in large flakes. I have never even seen it on young trees, though these have smooth firmly-clinging bark. I think it only grows on the red birch, as I have not observed it on the black. The level forests to the south and west of Ruapehu consist almost exclusively of red birch, the black being found growing separately, in detached patches of bush, on the eastern side of the mountain, and thence to the Ruahine.

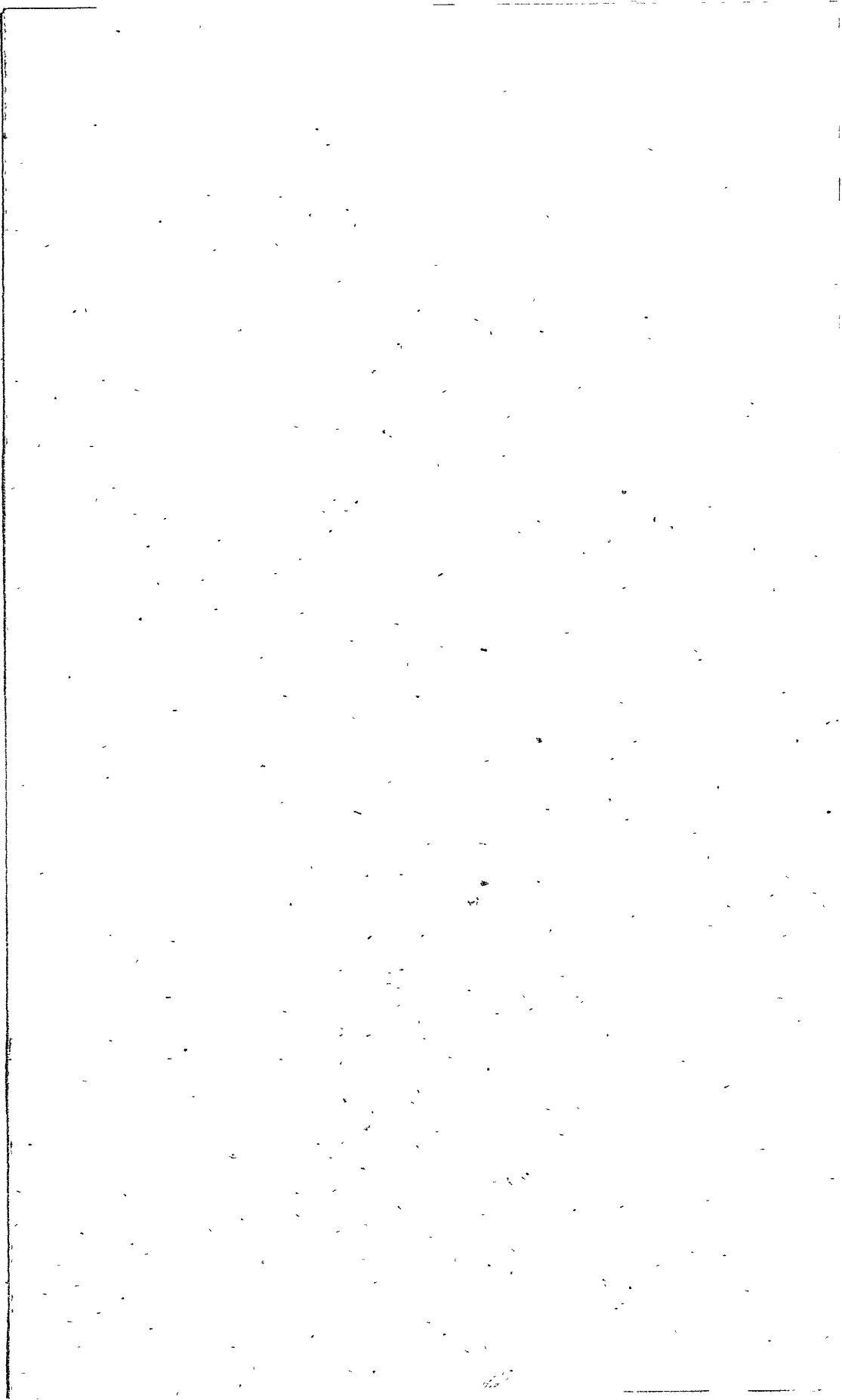
The *Loranthus* forms large bushes in the tops of the trees, and the blossoms are so abundant as almost to hide the foliage, so that each bush, when in flower, looks like a flame. I believe that the largest bushes are quite 10 feet in diameter, and those of 6 feet are common. I should say that fully ten per cent. of the large trees have one or more plants of *Loranthus* growing on them, and as the blossoms fall the whole ground is sprinkled with the petals. The root of the plant is hard and woody, and of

* "Trans. N.Z. Inst.," xvi., p. 397.



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a dark greyish-brown colour, approaching to black. It is smooth or very slightly roughened, and extends longitudinally, both upwards and downwards, along the branch on which the plant grows. It adheres so firmly to the bark of the birch, that it will drag the latter away from the wood of the tree rather than lose its own hold. At intervals short lateral rootlets branch out and clasp the branch. Plants often grow on branches far smaller than themselves. Thus one with roots from 1–1½ inches thick will grow on a branch no thicker than a man's little finger, which of course bends down with the weight, so that the *Loranthus* swings about with every breath of air. From this it might be inferred that the plant was an epiphyte, drawing little or none of its sustenance from the branch on which it grows. It is, however, unquestionably a parasite, nourished by the sap of the parent tree. When cutting a line 40 feet wide for nearly six miles through the bush, for the Wanganui-Taupo road, in September and October, 1882, my men felled many scores of trees on which the plant was growing. These all blossomed, but died soon afterwards, as the felled trees withered.

In February last I brought down two small plants with me, cutting off the branches on which they grew, without injuring the roots. I bound these branches and roots in moss, so that the plants looked as fresh as ever when I reached home. I planted one (branch and all) in a shady part of my garden, and hung the other (moss and all) under a bench in my greenhouse. Both, however, died without developing their fruit, proving that the birch sap is necessary to them.

The roots of the *Loranthus* are flattened or hollow where they touch the birch branches, and when on a branch smaller than itself, the root surrounds the branch to a greater or less extent. The stems are of the same colour as the roots. The blossoms are yellow at their bases, but shade gradually through orange and scarlet to crimson, and even carmine, at their tips. They are from 1–1½ inches long. They open very peculiarly. A very small proportion (certainly less than a tenth) open from the apex of the petals downwards, in the ordinary manner of flowers. In the remainder the petals become detached at their bases from the fruit beneath them, and roll upwards and outwards like those of the rewarewa blossoms. The upper portions of the petals, however, still adhere to each other, and clasp the stamen firmly. The result is that the stamen bends downwards, and supports the flower in an inverted position. Ultimately the stamen breaks, and its upper end falls to the ground with the petals still attached to it. In the lower forests, on the level of the Karioi plain, the plant blossoms in November and December; but near the upper margin of the bush, on the slope of Ruapehu, it was in full bloom at the end of

January. I have never seen the ripe berry, but it is no doubt viscid, like those of other plants of its class, and eaten by birds. The Maoris call it by the same name, "rorerore," as the smaller roseate fuchsia-shaped *Loranthus*.

I have mentioned that while the forests south and west of Ruapehu are of red birch, the detached bushes on the east of the mountain are of black. It is curious that the vegetation on the east and south of the mountain differs widely, though the soil and everything but the aspect exactly correspond. The slope of the mountain is so gentle that one would think the aspect could make no difference; yet plants which abound on the east are wholly wanting on the south, and *vice versâ*. For instance a plant which seems to be identical with or very closely allied to *Carmichaelia enysii* (Trans., vol. xvi., p. 379) abounds, and forms patches many yards in diameter on the east of the mountain, but there is not a trace of it on the south. As it had neither blossoms nor fruit in January, I did not gather any specimens, and could find no small plants. Next day I sought it in vain on the south side of the mountain. From what I have heard, I believe the vegetation on the north and north-west of the mountain is different again.

ART. XXXV.—Notes on the Occurrence and Habits of some of our New Zealand Plants. By W. S. HAMILTON.

[Read before the Southland Institute, 13th May, 1884.]

Glossostigma elatinoides, Benth.

THIS plant occurs on the flats of the Oreti, in the bottom of ditches that have been opened for some time. Its corolla is pale blue and very pretty; $\frac{1}{4}$ – $\frac{1}{3}$ inch. The strap-shaped stigma is irritable, and springs back on being touched, leaving the anthers exposed; and taking a place among the petals, looks exactly like an additional one. Before springing back it forms a hood over the anthers, and looks like an *Orchid* or a *Lobelia*. This plant has not, so far as I know, been reported from the south before. It does not occur on the flats except where a ditch has been opened, thus leading us to suppose that the subsoil is full of its seed, but that the climate is no longer suitable to its growth, and that it can only grow now under exceptional circumstances of shelter and moisture.

Pteris scaberula, A. Rich.

Like the last-mentioned, this plant occurs in Southland under somewhat exceptional conditions. It also springs up where ditches have been opened along the roadsides, in the cemetery, and in sheltered spots on the Bluff Hill.