

ART. XI.—*On the Durability of Matai Timber.* By JOHN BUCHANAN.

[Read before the Wellington Philosophical Society, 29th July, 1876.]

Plate III.

ON a recent visit to Otago my attention was called to a large prostrate tree on a piece of new cleared bush land near Mount Cargill, North-east Valley, Dunedin.

The circumstances which prove that this tree has been exposed for at least 300 years, in a dense damp bush, under conditions most favourable to decay, and the fact that it is still sound and fresh, are worthy of record as showing the great durability of some of our New Zealand timbers.

The proof of the actual time which has elapsed since this tree fell rests on the fact that its trunk is enfolded by the roots of three large trees, which must have grown from seed after its fall. The three enfolding trees are all *Griselinia littoralis*, three feet six inches in diameter. They have been recently felled with the axe, and their growth rings count over 300, thus approximating 300 years, during which the enclosed timber has remained so fresh and sound that it has since been split into posts for fence stuff.

The most casual visitor to the New Zealand bush must have observed the rich epiphytical growth of young plants on fallen trees. After a few years these begin to throw their roots on both sides, and take hold of the earth, thus gradually enfolding the prostrate trunk in the process of growth.

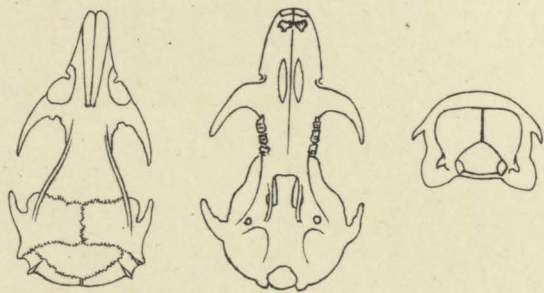
A microscopical examination of the timber of the fallen tree proved it to be *Podocarpus spicata* (matai). The measurement of the trunk is 135 feet long, and three feet in diameter at the base; and as the sap-wood and branches are gone, it must have measured when alive at least 160 feet in height, with a diameter of four feet.

The wood is close grained and heavy, and of a dark reddish-brown colour, and the yearly growths very narrow and numerous, showing 88 rings to an inch. The semi-diameter being eighteen inches gives for heart-wood alone a period of 1586 years,* and with sap-wood growths added at the lowest estimate, a total age for this tree of 1880 years. If to this again be added the 300 years during which it has lain prostrate, we have a period of 2180 years, within which no great disturbance of the forest has taken place in the immediate neighbourhood of Dunedin.

* Calculated on the accepted experience in Europe of annual rings of growth for coniferous trees.



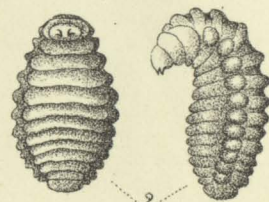
OLD MATAI TREE



SKULL OF MAORI RAT.



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1

NEW ZEALAND MASON WASP.