

toothache, dysentery, and for various other medicinal purposes. Dr. Thompson ("Story of New Zealand") remarks that it is singular that New-Zealanders have forgotten the art of extracting an intoxicating beverage from kawa-root, seeing that the plant grows abundantly in the country. Lauder Lindsay, in his "Toot" paper, corrects Dr. Thompson in confusing *Piper methysticum* with *P. excelsum*, but quotes Dr. Dieffenbach (1843), ("Travels in New Zealand," Vol. 1, p. 426), in saying that its leaves form a good and apparently healthy substitute for tea. The active principles of both these species are well worth careful investigation.

#### MONIMIACEAE.

*Laurelia Novae Zelandiae*—the pukatea, a forest tree—is certainly one of the medicinal plants of New Zealand. Dr. Goldie states that the inner layer of the bark of this aromatic plant is boiled in water by the Maoris, and the decoction thus prepared is applied externally to tuberculous and chronic ulcers and various cutaneous diseases. A strong solution held in the mouth relieves odontalgia (toothache), and it is also taken internally and applied locally in syphilis. The present writer has isolated three alkaloids from the bark (*Trans. Chem. Soc.*, 1910, p. 1381). The physiological action of the principal alkaloid, puketeine, has been investigated by Professor Malcolm, Otago Medical School, who published in the Annual Report of the Department of Agriculture for 1908, p. 226, a short account of his research (which is being continued). The new alkaloid is like strychnine in its action, but very much milder: 0.3 gram per kilo caused convulsions in a rabbit when given by mouth, but the animal recovered; 0.25 gram given hypodermically caused death in a rabbit in half an hour.

The pukatea alkaloids exist in comparatively large quantities in the bark of the tree, amounts of the order of 1 or 2 per cent. of the weight of bark being present. There would therefore be no difficulty in obtaining sufficient of the alkaloid for a thorough investigation. It is noteworthy that two of the alkaloids differ in chemical formula by  $C_2H_4$ , puketeine being  $C_{17}H_{17}NO_3$ , and laureline  $C_{19}H_{21}NO_3$ . A more recent investigator, Pyman (1914), (*Trans. Chem. Soc.*, Vol. 105, p. 1679), working on an allied tree from Queensland (*Daphnandra micrantha*, family *Monimiaceae*), isolated alkaloids as follows: Daphnandrine,  $C_{36}H_{38}N_2O_6$ ; daphnoline,  $C_{34}H_{34}N_2O_6$ ; micranthine,  $C_{36}H_{32}N_2O_6$ . The bark of this tree was found to be remarkably rich in total alkaloids, 6 per cent. being found. The physiological action of these alkaloids appears to resemble somewhat the action of puketeine, and when the formula of the daphnandra alkaloids is halved there appears to be some chemical relation between the alkaloids from the two trees. Thus daphnandrine becomes  $C_{18}H_{19}NO_3$ , daphnoline  $C_{17}H_{17}NO_3$ , and micranthine  $C_{18}H_{16}NO_3$ .

#### THYMELAEACEAE.

*Pimelia* is a widely spread genus in New Zealand, the commonest species being known in the North Island as the "Strathmore weed" (*P. laevigata*). One or other of the species may be found at all elevations. The common daphne found in many gardens belongs to this family, and has the same poisonous qualities as the *Pimelia*. The bark