

ART. VII.—*Plant-habitats Hitherto Unrecorded.\**

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[Read before the Wellington Philosophical Society, 23th October, 1914.]

- Lepidium tenuicaule* T. K. Wharekahu Bay, Kapiti Island.  
 ——— var. *minor* Cheesem. Near trig. station on Kapiti Island.  
*Hymenanthera crassifolia* Hook. f. On littoral rocks, Kapiti Island, and Motungarara Island.  
 ——— *obovata* T. K. On coastal crags near Toepiro Stream, Kapiti Island, at Somes Island, and at Seatoun Heads.  
*Pittosporum cornifolium* A. Cunn. Epiphytic on forest-trees, west side Kapiti Island.  
*Eleocarpus dentatus* Vahl. In forest, Wharekahu Bay, Kapiti Island.  
*Pelargonium australe* Jacq. Motungarara Island, near Kapiti Island.  
*Eugenia mairi* A. Cunn. In swampy parts, Wharekahu Bay, Kapiti Island.  
*Epilobium alsinoides* A. Cunn. On cliffs, west side Kapiti Island.  
*Fuchsia excorticata* Linn. f. Waterfall Creek, Kapiti Island.  
*Tetragonia trigyna* Banks & Sol. Motungarara Island and Kapiti Island.  
*Daucus brachiatus* Sieb. On coastal cliff-faces, Kapiti Island.  
*Coprosma lucida* Forst. Waterfall Creek, Kapiti Island.  
 ——— *Cunninghamii* Hook. f. Tokamapuna Island, near Kapiti Island.  
 ——— *rotundifolia* Hook. f. Kapiti Island.  
 ——— *propinqua* A. Cunn. Common on Kapiti Island.  
 ——— *foetidissima* Forst. On higher parts of Kapiti Island.  
 ——— *Colensoi* Hook. f. In bush, Waterfall Creek, Kapiti Island.  
*Nertera setulosa* Hook. f. Highest parts of grass uplands, Kapiti Island.  
*Gabium umbrosum* Sol. On western cliffs, Kapiti Island.  
*Erechtites arguta* D.C. Kapiti Island.  
 ——— *scaberula* Hook. f. Motungarara Island, near Kapiti Island.  
*Senecio Kirkii* Hook. f. In high forest, Kapiti Island.  
*Wahlenbergia gracilis* A. D.C. Kapiti Island.  
 ——— *saxicola* A. D.C. Kapiti Island and Motungarara Island.  
*Olea lanceolata* Hook. f. Waterfall Creek, Kapiti Island.  
*Dichondra brevifolia* Buch. Motungarara Island and Kapiti Island.  
*Solanum nigrum* Linn. Growing on beach, Kapiti Island.  
*Veronica macroura* Hook. f. var. *Cookiana*, Cheesem. Coastal parts Kapiti Island.  
 ——— *parviflora* Vahl. Edge of bush on high country, Kapiti Island.  
 ——— *leiophylla* Cheesem. Shores of Cook Strait, between Island Bay and Terawhiti.  
*Muehlenbeckia ephedrioides* Hook. f. Cawthron Park, Nelson; near Seatoun Heads, Wellington, Dr. L. Cockayne and B. C. A.  
*Litsaea calicularis* Benth. & Hook. f. Te Kuiti, B. C. A.; Mokau, E. P. Turner.  
*Knightsia excelsa* R. Br. Wharekahu Bay, Kapiti Island.

\* The information relating to the Kapiti Island habitats was obtained during a three days' visit to that island with Mr. E. Phillips Turner, F.R.G.S., in January, 1912. To him and to Mr. and Mrs. Bennett, our hosts, are my best thanks due for a most enjoyable excursion. Much help and enjoyment was derived on the island from a study of the "Report on a Botanical Survey of Kapiti Island," by Dr. L. Cockayne, F.R.S. (1907), who was, unfortunately, unable to visit a portion of the island for lack of a boat. The time of his visit was October, and therefore rather early for recognizing many plants with certainty. Our visit was in these respects more opportune.

- Urtica incisa* Poir. Kapiti Island.  
*Pareetaria debilis* Forst. In damp ground, Kapiti Island.  
*Dendrobium Cunninghamii* Lindl. On forest-trees, Kapiti Island.  
*Earina mucronata* Lindl. Waterfall-Creek, Kapiti Island.  
*Thelymitra uniflora* Hook. f. Kapiti Island.  
*Pterostylis australis* Hook. f. Wharekahu Bay, Kapiti Island.  
*Caladenia minor* Hook. f. On high spurs, Kapiti Island.  
*Chiloglottis cornuta* Hook. f. In high forest, Kapiti Island.  
*Gastrodia Cunninghamii* Hook. f. In forest, Kapiti Island.  
*Phormium tenax* Forst. Motungarara Island, near Kapiti Island.  
*Juncus pallidus* R. Br. Kapiti Island.  
*Gahnia pauciflora* T. K. In forest, Kapiti Island.  
*Carex pumila* Thunb. Motungarara Island.  
*Microlena stipoides* R. Br. Forms a sward on the high levels, Kapiti Island.  
*Deyeuxia Forsteri* Kunth. Kapiti Island.  
 — *Billardieri* Kunth. Kapiti Island.  
*Poa caespitosa* Forst. Wharekahu Bay, Kapiti Island, and Motungarara Island.  
 — *imbecilla* Forst. Among upland scrub, Kapiti Island.  
*Atropis stricta* Hack. Motungarara Island and Kapiti Island.

UNRECORDED FILICES AND LYCOPODIACEAE AT KAPITI ISLAND.

- Hymenophyllum multifidum* Swartz.  
 — *subtilissimum* Kunze.  
*Trichomanes venosum* R. Br.  
*Asplenium flabellifolium* Cav.  
*Nephrodium decompositum* R. Br.  
 — *glabellum* A. Cunn.  
 — *hispidum* Hook.  
*Polypodium australe* Mett.  
 — *grammitidis* R. Br.  
 — *Cunninghamii* Hook.  
*Tmesipteris tannensis* Bernh.

INDIGENOUS PLANTS OF THE RUAHINE AND KAIMANAWA MOUNTAINS.\*

- Ranunculus lappaceus* Smith. Ruahine Mountains.  
 — *rivularis* Banks & Sol. Ruahine Mountains.  
*Clematis indivisa* Willd. Taruarau River Gorge, Kaimanawa Mountains.  
 — *parviflora* A. Cunn. Whisker's Bush, Feilding.  
*Caltha novae-zealandiae* Hook. f. Mount Makorako, Kaimanawa Mountains;  
 5,000 ft  
*Hymenantha crassifolia* Hook. f. On limestone country, west side of  
 Ruahine Mountains; 3,000 ft.  
*Melicytus micranthus* Hook. f. West face of Ruahine Mountains, on Rangitikei River; 1,650 ft.  
 — *ramiflorus* Forst. Taruarau River Gorge, Kaimanawa Mountains.  
*Pittosporum Ralphii* T. Kirk. Boyd's Bush, near Kuripapanga, Kaimanawa Mountains.  
 — *tenuifolium* Banks & Sol. Boyd's Bush.  
*Plagianthus betulinus* A. Cunn. West face of Ruahine Range; 1,800 ft.

\* This list is supplementary to that given in my paper in Trans. N.Z. Inst., vol. 46, p. 43, 1914.

- Hoheria populnea* A. Cunn. Taruarau River Gorge, Kaimanawa Mountains.  
*Geranium dissectum* Linn. var. *australe* Benth. West face of Ruahine Mountains.  
*Geum leiospermum* Petrie. Reporoa bog, Ruahine Mountains; 3,000 ft.  
 Now recorded for the first time in the North Island.  
*Drosera spathulata* Labill. Reporoa bog, Ruahine Mountains; 3,000 ft.  
*Leptospermum ericoides* A. Rich. Taruarau River Gorge, Kaimanawa Mountains.  
*Oreomyrrhis andicola* Endl. Mount Makorako, Kaimanawa Mountains; 5,700 ft.  
*Aciphylla squarrosa* Forst. West face of Ruahine Mountains; 1,500 ft.  
 ——— var. *minor*. Reporoa swamp.  
*Coprosma grandifolia* Hook. f. Boyd's Bush, Kaimanawa Mountains.  
*Panax anomalum* Hook. Limestone country on Mount Aorangi, Ruahine Mountains.  
 ——— *arboreum* Forst. Taruarau River, Kaimanawa Mountains.  
*Coprosma lucida* Forst. Boyd's Bush, Kaimanawa Mountains.  
 ——— *Cunninghamii* Hook. f. West side of Ruahine Mountains; 1,800 ft.  
 ——— *rhamnoides* A. Cunn. Boyd's Bush, Kaimanawa Mountains.  
 ——— *crassifolia* Col. Taruarau River Gorge, Kaimanawa Mountains.  
 ——— *rotundifolia* Hook. f. West side of Ruahine Mountains; 1,800 ft.  
 ——— *rubra* Petrie. West side of Ruahine Mountains; 1,700 ft.  
 ——— *acerosa* A. Cunn. Taruarau River Gorge, Kaimanawa Mountains, Ruahine Mountains.  
*Asperula perpusilla* Hook. f. Reporoa bog, west side of Ruahine Mountains; 3,000 ft.  
*Brachycome odorata* Hook. f. Kaimanawa Mountains.  
*Lagenophora Forsteri* D.C. West side of Ruahine Mountains.  
*Olearia nummularifolia* Hook. f. Mount Otupae, Ruahine Mountains.  
 ——— *furfuracea* Hook. f. Mount Otupae, Ruahine Mountains.  
*Gnaphalium subrigidum* Col. 3,800 ft. on Mount Aorangi, Ruahine Mountains.  
 ——— *Traversii* Hook. f. Kaimanawa Mountains.  
*Erechtites prenanthoides* D.C. Taruarau River Gorge, Kaimanawa Mountains.  
 ——— *quadridentata* D.C. Taruarau River Gorge, Kaimanawa Mountains.  
*Senecio Colensoi* Hook. f. Taruarau River Gorge, Kaimanawa Mountains.  
*Microseris Forsteri* Hook. f. Ruahine Mountains.  
*Taraxacum officinale* Wigg. Ruahine Mountains.  
*Phyllachne Colensoi* Berggr. Mount Makorako, Kaimanawa Mountains; 5,700 ft.  
*Myrsine Urvillei* A. D.C. Taruarau River Gorge, Kaimanawa Mountains.  
*Myosotis eximia* Petrie, MS. On limestone scarps and talus slopes. Mounts Aorangi, 3,800 ft., and Mangaohane, 3,600 ft., Ruahine Mountains.  
*Calystegia tuguriorum* R. Br. West side of Ruahine Mountains; 1,650 ft.  
*Plantago uniflora* Hook. f. Upper Taruarau River, Kaimanawa Mountains.  
*Scleranthus biflorus* Hook. f. Mount Aorangi, Ruahine Mountains; 3,800 ft.  
*Pimelea longifolia* Banks & Sol. Taruarau River Gorge, Kaimanawa Mountains.  
*Tupeia antarctica* Cham. & Schl. On *Pittosporum tenuifolium*, Mount Aorangi, Ruahine Mountains.  
*Australina pusilla* Gaud. Mount Aorangi, Ruahine Mountains.  
*Podocarpus ferrugineus* D. Don. Boyd's Bush, Kaimanawa Mountains.

- Podocarpus spicatus* R. Br. Boyd's Bush, Kaimanawa Mountains.  
*Dacrydium cupressinum* Sol. Boyd's Bush, Kaimanawa Mountains.  
*Earina autumnalis* Hook. f. Tukutuki River, Ruahine Mountains.  
*Microtis porrifolia* R. Br. Ruahine Mountains, Kaimanawa Mountains.  
*Phormium Cookianum* Le Jolis. Taruarau River, Kaimanawa Mountains.  
*Herpovirion novae-zealandiae* Hook. f. Reporoa bog, Ruahine Mountains;  
 3,000 ft.  
*Luzula Colensoi* Hook. f. Mount Makorako, Kaimanawa Mountains;  
 5,000 ft.  
*Typha angustifolia* Linn. Taruarau River.  
*Cladium Sinclairii* Hook. f. Taruarau River Gorge, Kaimanawa Mountains.  
 — *Vauthiera* C. B. Clarke. Taruarau River.  
*Echinopogon ovatus* Beauv. Taruarau River Gorge, Kaimanawa Mountains.  
*Deyeuxia Forsteri* Kunth. Taruarau River Gorge, Kaimanawa Mountains.  
 — *setifolia* Hook. f. Parke's Peak, near Makaretu, Ruahine Mountains,  
 4,000 ft.  
*Dichelachne erinita* Hook. f. Taruarau River Gorge, Kaimanawa Mountains.  
*Koeleria Kurtzii* Hack. Mount Makorako, Kaimanawa Mountains. Now for  
 the first time recorded in the North Island.  
*Poa imbecilla* Forst. Mount Makorako, Kaimanawa Mountains; 4,000 ft.  
*Agropyrum scabrum* Beauv. Mount Aorangi, 3,900 ft., Ruahine Mountains;  
 Taruarau River, Kaimanawa Mountains.

ART. VIII.—Notes on Comparatively Recent Changes in the Vegetation of  
 the Taupo District.

By the Rev. H. J. FLETCHER.

[Read before the Wellington Philosophical Society, 28th October, 1914.]

IN separate publications, from the time of Bidwill's "Rambles in New Zealand" (published in 1841, although written in 1839) right up to the present time, Taupo has had its share of notice; but, as far as I am aware, no one has written about the changes that have taken place in the appearance of the country at the northern end of Lake Taupo during recent times.

There is a popular delusion abroad that an eruption of red-hot pumice from some centre not specified destroyed most of the vegetation around Taupo, with the exception of some of the isolated patches of forest such as may be seen at Opepe, Oruanui, Tauhara, and many other places. I wish to show in the following notes that the forest at one time covered the whole of the country around the lake, and that the forest has been destroyed by human agency; and, further, to show that there has been no great change in the configuration of the Taupo country for many centuries.

The Taupo country at the present time, with the exception of the patches of bush mentioned above, is covered with what is popularly called scrub, tussock, and fern. The scrub is mainly composed of *Leptospermum scoparium*, *Leptospermum ericoides*, *Coriaria ruscifolia*, *Styphelia acerosa*, *Gaultheria*, and *Dracophyllum*. Of these, the *Leptospermum scoparium* and *Leptospermum ericoides* form the main growth, with the *Styphelia acerosa* and *Gaultheria* forming thick matted growths among them. The *Coriaria ruscifolia* grows in among the other scrub in clumps, and is noticeable for miles over the landscape by its dark-green foliage showing above the lighter green of the *Leptospermum scoparium* and *Leptospermum ericoides*. The