

ART. XLIII.—Unrecorded Plant-habitats for the Eastern Botanical District of the South Island of New Zealand.

By W. MARTIN, B.Sc.

[Read before the Philosophical Institute of Canterbury, 1st December, 1920; received by Editor, 31st December, 1920; issued separately, 8th August, 1921.]

THIS paper records the habitats of certain plants growing in the Eastern Botanical District of the South Island as defined by Cockayne (1). Only such plants are included in the list as have not previously been recorded from this district or are of rare occurrence; or such as have been omitted from published lists of the florulae of defined areas; or such, again, as add to our knowledge of their distribution.

No catalogue has been prepared of the species occurring in the above district other than that of J. B. Armstrong (2), and, as it is by no means certain that all of his identifications were correct, there is room for a revision of the flora. Again, Armstrong's habitats are so vague as to be of little service to students of this district. Most of the plants named in this paper have already been recorded from Canterbury, though the specific habitats given are new.

Twelve native plants are added to the sixty-eight already recorded by Dr. Cockayne as occurring in the Riccarton Bush, Christchurch (3 and 4). *Hymenophyllum minimum* is recorded from this botanical district for the first time. *Helichrysum Purdiei* has previously been collected in Canterbury by Dr. Cockayne, Professor Wall, and Mr. H. H. Allan. *Eryngium vesiculosum* and *Deyeuxia Billardieri* are new records for Banks Peninsula. The habitat mentioned for *Carex Berggreni* is the most northerly for this species, while the genus *Gahnia* seems to have eluded the notice of observers since Armstrong recorded five species in his catalogue (2). The recorded habitat for *Gleichenia Cunninghamii* is worthy of note.

Aciphylla Colensoi Hook. f. var. *maxima* Kirk. In stream-bed at foot of patch of *Nothofagus Solanderi* between Hororata and South Malvern.

Agropyrum scabrum Beauv. Hagley Park, Christchurch.

Angelsca geniculata Hook. f. Upper Rakaia Bridge, on the island.

Asplenium flabellifolium Cav. Riccarton Bush, Christchurch.

Asplenium Lyallii Moore. Mount Oxford; Mount Somers; Omihia Hills.

Asplenium Richardi Hook. f. Kaituna Bush; Balgueri Valley, Akaroa.

Astelia nervosa Banks & Sol. Riccarton Bush, Christchurch.

Blechnum Patersoni Met. Kaituna Reserve.

Blechnum penna marinum Kuhn. Riccarton Bush, Christchurch.

Blechnum vulcanicum Kuhn. Kaituna Reserve, Omihia Hills.

Bulbinella Hookeri Benth. & Hook. Summit Road, at head of Le Bon's Bay. This is a "species inquirendae" of Laing (5).

Carex Berggreni Petrie. Arthur's Pass, close to the railway-station.

Carmichaelia Monroii Hook. f. Left bank of the Rakaia, quarter of a mile from the lower bridge, near the Mead Road.

- Carmichaelia subulata* Kirk. Riccarton Bush, Christchurch.
- Carmichaelia* sp.? Shingle terrace, Birdling's Flat. Apparently close to or a form of *C. subulata*, but so prone as not to exceed 2 in. in height.
- Celmisia Mackarui* Raoul. This disappearing species is growing freely on the upper part of the cliffs at The Caves, Akaroa.
- Cheilanthes Sieberi* Kunze. Canterbury Plains, Templeton.
- Cheilanthes tenuifolia* Swartz. Two plants of this also fast-disappearing species were gathered on Birdling's Flat, near Lake Forsyth.
- Clematis afoliata* Buch. Abundant in the gorge of the Hurunui River near Ethelton.
- Clematis australis* Kirk. Le Bon's Bay; Rakaia Gorge; River Grey.
- Clematis foetida* Raoul. Rakaia Gorge.
- Corokia Cotoneaster* Raoul. Rakaia Gorge.
- Cyclophorus serpens* C. Chr. Riccarton Bush, Christchurch.
- Cystopteris novae-zealandiae* Armstr. Mount Oxford, 1,000 ft. This fern is still common at about the same level on Mount Somers where it was noted and recorded by Potts (6).
- Dacrydium cupressinum* Soland. Mount Grey, where it was once fairly common.
- Deyeuxia Billardieri* Kunth. On coastal rocks at Akaroa beyond the abattoirs.
- Dianella intermedia* Endl. Beside the beech plantation near the source of the Omihi Stream; River Grey.
- Drosera binata* Labill. Swamp near intersection of road from Lincoln College and that between Greenpark and Springston.
- Dryopteris pennigera* C. Chr. Omihi Stream.
- Dryopteris punctata* C. Chr. Riccarton Bush, Christchurch.
- Echinopogon ovatus* Beauv. Mount Grey.
- Elaeocarpus Hookerianus* Raoul. Mount Grey; Kaituna Reserve, Banks Peninsula.
- Erectites prenanthoides* DC. Riccarton Bush, Christchurch.
- Eryngium vesiculosum* Labill. On shingle close to the outlet to Lake Forsyth; on roadside exactly two miles beyond the rabbit-proof fence on the road to Akaroa.
- Gahnia* sp.? Near the source of a stream between the River Grey and the Little Grey River. Probably *G. lacera*.
- Gleichenia Cunninghamii* Heward. This fern was collected on Mount Somers on an open shingle-slope, facing north, at an elevation of 3,500 ft. The only shelter from the howling nor'-westers was a boulder about 18 in. high, while from the glare of the sun there was none.
- Helichrysum Purdiei* Petrie. Bed of River Grey; Mr. Anderson, of West Oxford, has sent me specimens of this rare plant from near the source of Gammon's Creek, on Mount Oxford.
- Hoheria angustifolia* (Raoul) Cockayne. Rakaia Gorge.
- Hymenophyllum minimum* A. Rich. Near source of Gammon's Creek, Mount Oxford.
- Iphigenia novae-zealandiae* Baker. Tarn near Lake Coleridge.
- Juncus caespiticus* E. Mey. Beside water-race, Rolleston.
- Juncus pallidus* R. Br. Swamp between Kaituna and Birdling's Flat.
- Korthalsella Lindsayi* Engl. Island in Rakaia Gorge; parasitic on *Myrtus obcordata* and on *Coprosma rotundifolia*.
- Korthalsella salicornioides* Van Tiegh. On *Leptospermum ericoides*, at Kaituna Reserve; abundant.

- Leptocarpus simplex* A. Rich. Inland shore of Lake Ellesmere; head of Le Bon's; Barry's Bay; Onawe Peninsula.
- Leptolepia novae-zealandiae* Kuhn. Mount Oxford, 1,500 ft.
- Labertia ixiooides* Spreng. Island in Rakaia Gorge; Mount Grey.
- Loranthus micranthus* Hook. f. Riccarton Bush, Christchurch.
- Mariscus ustulatus* C. B. Clarke. Roadsides between Tai Tapu and Motukarara.
- Metrosideros lucida* A. Rich. Abundant on hill near Omihi; also on shore of Lake Coleridge.
- Muehlenbeckia ephedrioides* Hook. f. This plant has been recorded from the shingle ridge near the mouth of the Rakaia River, and it is now recorded from the end of the same ridge, twenty miles or so farther north, near the outlet to Lake Forsyth, where it is the commonest plant in the first zone of vegetation. It is abundant on the beach shingle at Otaio, in South Canterbury; old bed of the River Waimakariri, not far from the Paparua Prison, beyond Yaldhurst; banks of stream near Cust.
- Nothofagus Solanderi* (Hook. f.) Oerst. Hills near source of Omihi Stream.
- Olearia arborescens* Cockayne and Laing. Mount Grey; common in light bush.
- Ophioglossum costatum* R. Br. Mount Grey; vicinity of Lake Coleridge.
- Panax simplex* Forst. Mount Grey.
- Parietaria debilis* Forst. Riccarton Bush, Christchurch.
- Parsonsia capsularis* (Forst. f.) R. Br. var. *rosea* (Raoul) Cockayne. Island in Rakaia Gorge.
- Paesia scaberula* Kuhn. Omihi; Mount Grey; Mount Oxford.
- Polypodium diversifolium* (Willd.) C. Chr. Riccarton Bush, Christchurch.
- Polystichum vestitum* Presl. Riccarton Bush, Christchurch.
- Pseudopanax ferox* Kirk. Island in Rakaia Gorge.
- Raoulia Monroi* Hook. f. Old bed of Waimakariri; island in Rakaia Gorge; Amberley Beach; Maronan Road, Ashburton.
- Scirpus sulcatus* Thouars var. *distigmata* Clarke. Between Greenpark and Springston, in manuka swamp.
- Tetrapathaea australis* Raoul. Kaituna Reserve.
- Uncinia leptostachya* Raoul. Riccarton Bush, Christchurch.
- Urtica incisa* Poir. Outlet to Lake Forsyth.
- Utricularia monanthos* Hook. f. Tarns near Lake Coleridge.

REFERENCES.

1. L. COCKAYNE, Notes on New Zealand Floristic Botany, *Trans. N.Z. Inst.*, vol. 49, p. 65, 1917.
2. J. B. ARMSTRONG, A Short Sketch of the Flora of the Province of Canterbury, with Catalogue of Species, *Trans. N.Z. Inst.*, vol. 12, p. 325, 1880.
3. L. COCKAYNE, Riccarton Bush—List of the Flowering-plants and Ferns of Riccarton Bush, 30th July, 1906.
4. ——— Some Hitherto-unrecorded Plant-habitats, *Trans. N.Z. Inst.*, vol. 46, p. 63, 1914.
5. R. M. LAING, Vegetation of Banks Peninsula, *Trans. N.Z. Inst.*, vol. 51, p. 355, 1919.
6. T. H. POTTS, *Out in the Open*, p. 253, 1882.
7. L. COCKAYNE, Some Hitherto-unrecorded Plant-habitats, *Trans. N.Z. Inst.*, vol. 48, p. 205, 1916.