

II.—BOTANY.

ART. XXVI.—*A Description of some Newly Discovered Indigenous New Zealand Ferns.*

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[Read before the Hawke's Bay Philosophical Institute, 10th October, 1898.]

CLASS III. CRYPTOGAMIA.

Order I. FILICES.

Genus 5. *Hymenophyllum*, Smith.

1. *H. alpinum*, sp. nov.

Plant small, terrestrial, creeping, glabrous, caudex very long, horizontal, intermixed, bare, with a few small fine red hairs scattered on rootlets. Stipe flexuous, suberect, slender, wiry, 2 in.—3 in. long, woody, terete, smooth. Frond tri-subquadripinnate, deltoid, $\frac{3}{4}$ in.—2 in. long, generally much recurved and compacted, dark-green, frequently possessing reddish spots, and bearing a rusty tinge (red-brown in age); main rhachis bare below, above with subrhachises narrowly winged, serrate; pinnæ irregularly and closely overlapping, ultimate pinnules subflabelliform; lobes narrow-linear, truncate, coarsely serrate; tips sometimes dilated and 2–3 serrulate; single-veined; veins stout, not extending to tips. Involucres very few, solitary, supra-axillary in upper pinnæ, free, substipitate, pale-green; valves rather large, cut nearly to base, oblong; tips broad; margins entire, purplish; receptacle stout; capsules large, compact.

Hab. Ruahine Mountain-range, alpine woods, east side; 1898: *Mr. H. Hill*. Same mountain-range, common; 1845–52: *W. C.*

Obs. I. This species is near *H. truncatum*, Col. (Trans. N.Z. Inst., vol. xxiii., p. 390), but differs from that species in several characters, particularly in its very long, wiry, flexuous, bare, and glabrous stipe, which is also remarkably tough, though extremely slender; its fruiting fronds are very few.

II. This fern is the mountain species referred to above: *l.c.*, p. 391.

2. *H. oligocarpum*, sp. nov.

Rhizome long, wiry, harsh, creeping, blackish, bare, with a few rootlets. Stipe $2\frac{3}{4}$ in.—3 in. long, filiform, wiry, naked, dark-brown. Frond erect, $\frac{3}{4}$ in.—1 in. apart, glabrous, subovate-acuminate, $2\frac{1}{2}$ in.—3 in. long, 2 in.—4 in. wide, rather irregular in outline, bipinnate, membranous, decurved, bright emerald-green; pinnæ free; midrib, rhachis, and subrhachises prominent, slender, blackish throughout, winged, denticulate-serrate, the wings of subrhachises broader, secondary pinnæ rather distant; lobes linear, sharply serrate, teeth distant, tips obtuse-truncate, sometimes denticulate. Involucres large, few, solitary, supra-axillary in upper secondary pinnæ, and extending to tip of frond, free, pedicelled, erect and drooping; pedicel often winged on one side, with a short lobe or tooth on the other; valves large, broadly obovate, entire, smooth, shining, cut half-way down, immature closed and much curved together, mature open, gaping. Receptacle stout, largely exerted; capsules few, red.

Hab. Forests, Waikaremoana, Hawke's Bay; 1898: *Mr. H. Hill*.

Obs. A species allied to *H. multifidum*, but differing in several characters, particularly its irregular and open pinnæ and pinnules, its few solitary pedicelled sori, and largely decurved involucre; the cells, too, of its frond are different, as shown in the plate of the type specimen of *H. multifidum*, Sw. (*Hk. and Grev., Ic. Fil.*, t. 167), and Baker describes its sori: "1 to 12 to a pinna, terminal on the lateral segments of the upper pinnæ on both sides" (*Sy. Fil.*, p. 69).

Genus 18. *Asplenium*, Linn.1. *A. symmetricum*, sp. nov.

Plant small, tufted, upright, drooping; rootstock compact, 8–10 fronds. Stipe 1 in. long, greenish, subsucculent, thickish, clothed at base with long deltoid acuminate scales. Frond subovate-lanceolate, 3 in. long, 1 in.— $1\frac{1}{4}$ in. wide, bipinnate, membranaceous, glabrous, dark-green; rhachises scaly, and pinnæ sparsely so, with smaller scattered scales; pinnæ alternate, oblong, obtuse, regular, 9–10-jugate, close but not overlapping, each having 3–4 pairs of pinnules; pinnules all stalked and distant, free throughout, cut to base into 4–5–6 lobes; the lowermost pinnule on upper side of subrhachis, and always the largest, 6-lobed; lobes long, linear and linear-lanceolate, flat, narrowly margined, very acute, rarely bifid, tips pointed, single-veined; veins central, not extending to margins, their tips prominent on upper surface, white. Sori general throughout; one cluster on vein in each lobe red. Involucre rather large, white, oblong-lanceolate, ends acute;

margins entire, very thin, not extending beyond margin of lobe. Scales (basal) deltoid-acuminate, 3 lines long, their margins distantly serrate-lobed, tips very narrow-elongated; cells large, unequal, parallelogrammatic, and extending to tips, their margins black and very stout.

Hab. Hills (altitude 2,000 ft.) near Rangiora, North Canterbury; 1898: *Mr. T. Keir*.

Obs. This strikingly neat little fern is allied to *A. colensoi*, Hook. f., with which it has been hitherto classed, but is very distinct in many particulars—in colour, size, form, and general appearance; its pinnæ are more regular and closer, all pinnules free, many-lobed, and stipitate; scales larger and differently shaped.

Genus 8. *Cystopteris*, Bernh.

1. *C. laciniatus*, sp. nov.

Plant terrestrial, tufted, suberect and drooping, membranaceous, glabrous, light-green. Stipe slender, flattish above and slightly canaliculate, subsucculent, pale, $3\frac{1}{2}$ in.— $4\frac{1}{2}$ in. long, a few small scales and reddish hairs at base and scattered scales a short distance up stipe; scales very delicate, light-brown, ovate-acuminate-caudate. Frond ovate and ovate-deltoid, much acuminate, 6 in.—8 in. long, 4 in.— $4\frac{1}{2}$ in. wide, bipinnate (subtripinnate lower pinnæ); pinnæ subopposite, patent, horizontal, loose, distant below closer above, rhachis very slender; pinnules distant, stipitate, pinnatifid, deltoid-acuminate, acute, lowermost with 8–10 segments; segments stipitate, ovate, obtuse, decurrent; secondary segments ovate, deeply cut or lobed; lobes irregular, lacinate, sharply toothed, tips truncate and bifid, veined; veins white, decurrent, and collateral on stipes of pinnules. Sori numerous, small, distant, scattered, blackish, shining, central on vein, regular, 2–4 on a segment, extending to ultimate lobe. Involucre small, oblong, tip obtuse, retuse, sometimes bifid and lacerate, very membranous, white, shining, sparsely echinate, margins entire; at first covering sorus.

Hab. North Canterbury, New Zealand; 1898: *Mr. T. Keir*, *Rangiora*.

Obs. It is not without some doubt, and much research and long examination, that I describe this fern as a new species, for it is certainly pretty closely allied to *C. fragilis*, Bernh., and its varieties. It differs, however, considerably from them all, and did I not possess ample correct botanical drawings with dissections of them (Hooker's "British Ferns" and "Flora Tasmaniæ," Beddome's "Ferns of British India," &c.) I should hesitate to do so. This fern, however, is much larger, and possesses characters which those ferns do not,

particularly in its stipitate pinnules, which are also largely lacinate, with lobes bifid and sharply toothed, and in its involucre, which is much more oblong and obtuse with entire margins; whereas in *C. fragilis* and all its varieties their involucre are always shown broadly ovate, their bases largely rounded, very acuminate, with finely serrulate margins. Hooker refers to his figure of the Tasmanian fern (*C. fragilis*, var. β) as being identical with the known and described New Zealand species or variety; but that is widely different from this plant.

ART. XXVII.—Phænogams: *A Description of a few more Newly Discovered Indigenous Plants; being a Further Contribution towards the making known the Botany of New Zealand.*

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CLASS I. DICOTYLEDONS.

Order I. RANUNCULACEÆ.

Genus 1.* **Clematis**, Linn.

1. *C. hillii*, sp. nov.

Branches very long and slender, climbing; bark dark-purple, striate, ribbed. Leaves and flowers together at regular distances 3 in. apart, opposite on branches. Leaves on slender petioles sub 3 in. long, densely hairy; leaflets small, ternate, petiolulate, broadly ovate, sometimes suborbicular, $\frac{1}{2}$ in. (rarely $\frac{3}{4}$ in.) long, margins entire, sometimes irregularly cut and serrate, base dimidiate; green; veined, veins prominent and dark on under-surface; veinlets anastomosing; hairy on both surfaces, hairs shining, pale ferruginous; petiolules very slender, 2–3 lines long. Flowers few, often 3 together in short panicles; peduncles and pedicels stout, densely pubescent. Sepals 5, tawny, very silky-hairy on outside, subovate-lanceolate, obtuse, tips truncate and jagged; 5-veined; veins dark. Stamens numerous, 20 or more; filaments linear-lanceolate; anthers suborbicular or broadly elliptic, flat, tips very obtuse.

Hab. Forests, slopes Ruahine Mountain-range, east side; October, 1898: *Mr. H. Hill.*

* The numbers of the orders and genera given here are those of them in the "Handbook of the New Zealand Flora."