fructifère. 5. un fruit. 6. coupe verticale d'un des carpelles. Ces trois dernières figures sont de grandeur naturelle.

ALGÆ NOVÆ ZELANDIÆ; *being a Catalogue of all the species of* ALGÆ *yet recorded as inhabiting the shores of* NEW ZEALAND, *with characters and brief descriptions of the new species discovered during the Voyage of H. M. discovery ships* "EREBUS" *and* "TERROR," *and of others communicated to Sir W. Hooker by* DR. SINCLAIR, *the* REV. W. COLENSO, *and* M. RAOUL. *By* DR. HOOKER, *and* W. H. HARVEY, ESQ.

(In Mr. Allan Cunningham's "Specimen of the Botany of New Zealand," published in the "Companion to Curtis's Bot. Magazine," a list of forty-seven *Algæ* is given, comprising all that was known up to the year 1836 of the Marine Botany of the Islands of New Zealand. M. Montagne has recently described twelve additional species in the Botany of the French Polar Voyage, and we have now to add sixty-five others, making the whole number recorded one hundred and twenty-four, which can scarcely be more than one fourth, at the very most, of the *Algæ* which probably inhabit the extensive coasts of New Zealand. The new species now described were chiefly collected by the officers of the Antarctic expedition. To these we have added a few, communicated to Sir W. J. Hooker by Dr. Sinclair and the Rev. W. Colenso, and an interesting fasciculus of *Algæ* collected by M. Raoul, and liberally placed in our hands for publication by the Directors of the Paris Museum. We regret that we have not been able to procure a set of Mr. Stephenson's *Algæ*, an examination of which would in all probability have added somewhat to our number. In the following list we have marked with an asterisk (*) those of which we have as yet seen no New Zealand specimen, and with a cross (†) those that are altogether unknown to us.)

Fucoideæ.

1. *Sargassum *vulgare*. Ag. *Fucus natans*, Turn. *t.* 46.

Hab. New Zealand, *Sir Joseph Banks*, *Lesson*.

2. Sargassum *bacciferum*, Ag. *S. Atlanticum*, Bory. *Fucus bacciferus*, Turn. *t.* 47.

Hab. New Zealand, *D'Urville*, *Lesson*, *Sinclair*.

3. †Sargassum *granuliferum*, Ag. *Ic. Alg. t.* 11.

Hab. Cook's Straits. *D'Urville*.

4. †Sargassum *droserifolium*, Bory, *in Duperr. Voy. p.* 129.

Hab. New Zealand, *Lesson*.

5. Sargassum *Sinclairii*, nobis; caule basi semiterete apicem versus compresso obtusangulo filiformi, foliis lanceolatis basi attenuatis tenuibus nervo evanescente, inferioribus majoribus inciso-dentatis, superioribus remote dentatis subintegerrimisve, vesiculis paucis breve petiolatis foliiferis, receptaculis brevissimis axillaribus foliolo minuto subtensis parum divisis lobis lævibus turbinatis apice abrupte 3-4 cornutis.

Hab. Bay of Islands, *Sinclair*, *Lyall*, &c.

Nearly related to *S. incisæfolium*, from which it differs in the semiterete obtusely angled stem, and in the shape of the receptacles; and to *S. lacerifolium*, from which it is also distinguished by the stem, and by the much less deeply divided leaves. Like both those species, the present is remarkable for having a single very large leaf, sometimes 3-4 inches long, at the base of the branches. This leaf is always more indented than the rest.

6. Sargassum *scabridum*, nobis; caule angulato muricato, foliis oblongo-lanceolatis acuminatis tenuibus dentatis superioribus angustissimis nervo attingente valido, vesiculis petiolatis globosis lævibus muticis (an semper?) sparsis, receptaculis lanceolatis lævibus racemosis pedicellatis, racemis axillaribus folio brevioribus.

Hab. Bay of Islands.

Our specimens of this plant are few and less perfect than we could wish, but the species appears sufficiently charac-

terised by the muricated stem, a peculiarity which it shares with *S. linifolium* and *S. onustum*, from both which it is, in other respects, very different.

7. *Sargassum *longifolium*, Ag. *Fucus longifolius*, Turn. *t.* 104.

Hab. New Zealand, *Sir Joseph Banks, D'Urville.*

8. †Sargassum *duplicatum*, Bory, *in Duperr. p.* 127.

Hab. New Zealand, *Lesson.*

Is not this a synonym of *S. cristæfolium*, Ag.? a plant of which we have excellent specimens from the Mauritius.

9. Sargassum *plumosum*, A. Rich. *Sert. Astrolab. p.* 136. *S. capillifolium*, A. Rich. *Fl. Nov. Zel. t.* 5. and *S. pennigerum*, A. Rich. l. c. t. 6.

Hab. Howa Howa Bay, *D'Urville.* Bay of Islands, abundant, *Sinclair, Lyall, Hooker, &c.*

Of M. Richard's variety *capillifolium*, which he at first published as a distinct species, we have received but few and very imperfect specimens; of his var. *pennigerum*, on the contrary, our series is extensive, and were it not for the high authority of the French Naturalist, and the seemingly convincing data on which he founds his observation, we should certainly never have supposed these two varieties to belong to one species. Our very numerous specimens of the variety *pennigerum* present no intermediate types of form with the var. *capillifolium*, and only differ one from another in being more or less branched. Some, like those described by M. Richard, have long simple stems, set with deeply pinnatifid leaves; others, in an older state, are bipinnate, their pinnæ issuing from the axils of the primary leaves, and furnished like the stem or main rachis with leaves neither more nor less compound than those of the first set. From the axils of these secondary leaves spring fruit-bearing ramuli, or, in old specimens, a third series of pinnæ similar to the second, and so the plant continues to branch after a perfectly uniform law.

10. Sargassum *Raoulii*, nobis; caule longissimo gracili lævi compresso angulatim-flexuoso alterne ramosissimo, ramis similibus, foliis distichis distantibus pluries dicho-

tomis laciniis angustissimis plano-compressis cnerviis, vesiculis sphæricis muticis ad basin folii solitariis petiolatis, petiolo filiformi compresso, receptaculis lævibus cylindraceis racemosis, pedicellis sæpe furcatis.

Hab. Akaroa, *M. Raoul.* (Also a native of Tasmania.)

Stem 2 feet or more in length, half a line in width and preserving nearly an equal breadth throughout our specimens, quite smooth, compressed, angularly bent at intervals of about an inch; the branches issuing from the angles, quite distichous, zigzag like the stem and emitting from their angles a second series of branches, or filiform dichotomously divided leaves or ramuli. *Leaves* resembling the branches, but smaller, multifid, the segments very slender, flat, without midrib. *Vesicles* generally solitary, either at the base of a leaf, or in the interval between two leaves, globose, 2-4 lines in diameter, muticous, on rather long, compressed petioles. This species is allied to *S. piluliferum* and *S. Desfontainesii*, from the first of which its nerveless leaves distinguish it, and the nature of the stem from the latter. M. Raoul's specimens are the only individuals from New Zealand which we have seen, and they are not in fruit, but we have the same plant from two stations in Tasmania, and have added the character of the fruit from one of these. On one of the Tasmanian individuals, the leaves are furnished with distant, prominent warts, pierced by a pore, and containing a tuft of byssoid muciferous fibres. These at first sight may be taken for the fructification, which is in fact very different. The position of the receptacles is subterminal, and thus there is a transition in character to *Blossevillea*, which renders the distinction between that genus and *Sargassum* very trifling indeed.

11. †Sargassum *compactum*, Bory, *in Duperr. Voy. p.* 127.

Hab. New Zealand, *Lesson.*

12. †Marginaria *Gigas*, A. Rich. *Fl. Nov. Zel. t.* 4. *Sargassum Lessonianum, ib. Sert. Astrolab. p.* 137.

Hab. Kaua Kaua Bay, *Lesson.*

13 *Marginaria *Urvilliana*, A. Rich. *l. c. t.* 3.

Hab. Kaua Kaua Bay, *Lesson.*

14. †Marginaria *Boryana*, Montag.—*Sargassum Boryanum*, A. Rich. *Sert. Astrolab. p.* 138. (not *S. Boryi*, Ag.)

Hab. Shores of New Zealand, *D'Urville.*

15. *Turbinaria *denudata*, Bory. *Fucus turbinatus*, Turn. *t.* 24. *f.* a-e.

Hab. Shores of New Zealand, *Sir Joseph Banks*, *Lesson.*

16. Phyllospora *comosa*, Ag. *in Nov. Act. N. C. XIX.* 1. 311. *t.* 28. *f.* 11. *Fucus comosus*, Turn. *t.* 142. *Macrocystis comosa*, Ag.

Hab. Hew Zealand, *D'Urville*, *Hooker.*

17. Phyllospora *quercifolia*, Harv.—*Fucus quercifolius*, Turn. *t.* 151. *Cystoseira ? quercifolia*, Ag. *Stephanocystis quercifolia*, Treviran. *in Endl. Suppl. III. p.* 31. *Platythalia quercifolia*, Sonder, *in Bot. Zeit.* 1845. *p.* 51.

Hab. Bay of Islands, *D'Urville*, *Colenso.*

The fructification of this remarkable species was unknown to Turner, who nevertheless was struck with its near affinity to *F. comosus*, the type of Agardh's genus *Phyllospora.* The frond is probably of great length. Our specimens are all imperfect, consisting of branches and broken pieces of the stem, from which the habit may be inferred to be similar to that of *F. comosus*, namely, a long simple stem furnished with lateral, undivided, alternate branches, which bear a second and perhaps a third series of similar shorter ones; the last series of branches and the apices of the first, equally producing receptacles. These receptacles are evidently transformed leaves. They occupy the position of the normal leaves, but are much smaller, the leaves being 4-5 inches, the receptacles 1-1½ in length. The latter are cuneate and entire below, sharply serrated above, their upper half densely papillated on both surfaces with the globose conceptacles, which in our specimens contain large, dark olive, undivided spores, with a wide border. None of our specimens produce vesicles.

18. Carpophyllum *Phyllanthus*, nobis. *C. flexuosum*, Grev.

Fucus phyllanthus, Turn. *t.* 206. *Sargassum phyllanthum*, Ag. *Fucus flexuosus*, Esper.

Hab. Coast of New Zealand, *Sir Joseph Banks*, *D'Urville*, *Sinclair*, *Lyall*, *Hooker*, *&c.*

19. Carpophyllum *Maschalocarpus*, nobis. *C. Maschalocarpum*, Grev. *Sargassum Maschalocarpum*, Ag. *Fucus Maschalocarpus*, Turn. *t.* 205.

Hab. Coast of New Zealand, *Sir Joseph Banks*, *Sinclair*, *Lyall*, *Hooker*.

We can by no means agree with M. Richard in uniting this species with the preceding. To us they appear to be abundantly distinct at all ages, and we have formed this opinion from an extensive series of perfect and imperfect specimens of both kinds. Turner's figure of *F. Phyllanthus* is certainly drawn from a very much battered individual, but it is sufficiently like the plant in its perfect state to be recognised without much difficulty. We have seen many specimens similar to it, and possess others from more perfect individuals where the frond is young and vigorous; but all are alike characterised by having the denticulate margin fringed with the racemose receptacles along the whole course of the leaf-like branches, which resemble in a very striking manner the phyllodia of a *Phyllanthus* (Section *Xylophylla*) to which Turner compares them. These fruit-bearing branches are not, as Richard supposes, denuded of leaves, but perfect, and indeed the youngest part of the frond.—As to *F. Maschalocarpus*, Turner's figure and description are only defective in not representing vesicles, which are often absent and were wanting on his specimens. Some of ours produce them. When present they are solitary, elliptical, large and apiculate, or tipped with a leafy point, and they occupy the place of the receptacles, namely, the axils of the distichous leaves. But, vesicles apart, *C. Maschalocarpus* is abundantly different from *C. Phyllanthus*. It is a much coarser plant, of a thicker and more opake substance; its clusters of receptacles are densely fasciculate, not racemose, and they are invariably placed in

the axils of marginal leaves, not at the apex of lateral spines. It is true that, on battered specimens, the leaves are sometimes broken off while the receptacles remain, and such specimens may have been regarded by the illustrious French Naturalist as Turner's *F. Phyllanthus*, but it is clear to us that M. Richard could not have known the true *C. Phyllanthus*, or he never would have confounded *C. Maschalocarpus* with it.—We retain Turner's excellent name "*Phyllanthus*," although Esper's has slightly the priority of publication, because Esper's specimens were derived from Turner, to whom in courtesy the right of publication belonged; and because, but that they are quoted by Turner, Esper's figure and description would be wholly unintelligible. It is manifest from the observations of Turner, under both species, that he designed the specific names to be retained as substantives, not adjectives, as altered by Agardh, and we have therefore restored the masculine termination.

20. *Blossevillea *retroflexa*, Kütz. *Fucus retroflexus*, Turn. *t.* 155.

Hab. Kouraki Bay, *D'Urville*. Akaroa, *Hombron*.

21. Blossevillea *retorta*, Montag. *Fucus retortus*, Mart. *Cystoseira retorta*, Ag.

Hab. Akaroa, *Hombron*, *Raoul*.

22. *Blossevillea *torulosa*, Dne. *Fucus torulosus*, Turn. *t.* 157. *Cystoseira*, Ag.

Hab. New Zealand, *D'Urville*.

23. Blossevillea *paniculata*, Dne. *Fucus paniculatus*, Turn. *t.* 76.

Hab. New Zealand, *Sinclair*.

Possibly a new species; but our specimens are not in a good state, nor with advanced fruit. The ultimate ramuli are longer than Turner's description and figure represent, and perfectly simple.

24. *Scaberia *Agardhii*, Grev. Syn. (1830). *Castraltia salicornoides*, A. Rich. *Sert. Astrol.* (1834.)

Hab. New Zealand, *Lesson*.

This remarkable plant is very extensively distributed along

the southern shores of New Holland, and in Tasmania, in which latter island it abounds; but we have not yet seen specimens from New Zealand.

25. Hormosira *Billardieri*, Montag. *Moniliformia Billardieri*, Bory. *Fucus moniliformis*, Labill. *t.* 262.

Hab. Wangari Bay, *D'Urville*. Bay of Islands, *Lyall*, &c.

26. †Hormosira *Sieberi*, Dne. *Moniliformia Sieberi*, Bory.

Hab. New Zealand, *Lesson*.

27. Splachnidium *rugosum*, Grev. *Fucus rugosus*, Turn. *t.* 185.

Hab. New Zealand, *Lesson*. Akaroa, *Raoul*.

28. Xiphophora *Billardieri*, Montag. *Fucus gladiatus*, Labill. *t.* 256. Turn. *t.* 240.

Hab. Bay of Islands, *Sinclair*, *Lyall*, *Hooker*, *Raoul*.

22. Durvillæa *utilis*, Bory, *in Duperr. Voy. t.* 1. 2.

Hab. Shores of New Zealand, *D'Urville*, &c.

Laminarieæ.

30. †Laminaria *pygmæa*, A. Rich. *Sert. Astrolab. p.* 139.

Hab. New Zealand, *Lesson*.

This, to judge by the description, hardly belongs to the present genus.

31. Capea *biruncinata*, Montag. *Flor. Canar. t.* 7. *Laminaria biruncinata*, Bory. *L. Cunninghamii*, Grev. *MS.*

Hab. New Zealand, *D'Urville*, *Cunningham*, *Hooker*.

32. Capea *flabelliformis*, nobis. *Laminaria flabelliformis*, A. Rich. *Fl. Nov. Zeal. t.* 1. 2.

Hab. Wangari Bay, *D'Urville*. Bay of Islands, *Hooker*.

33. *Capea *radiata*, Endl. *Fucus radiatus*, Turn. *t.* 134. *Laminaria radiata*, Ag.

Hab. New Zealand, *D'Urville*.

34. Macrocystis *pyrifera*, Ag. *Fucus pyriferus*, Turn. *t.* 110.

Hab. Coasts of New Zealand, abundantly.

Sporochnoideæ.

35. Carpomitra *Halyseris*, nobis; fronde plana lineari membranacea (demum subcoriacea) tenui costata di-trichotoma vel subpinnata disticha, axillis angustis alternis suboppo-

sitisve, ramis erectis, apicibus sæpissime tridentatis, receptaculis conicis.

HAB. Bay of Islands, *R. Cunningham, Sinclair, Lyall, Hooker.*

Root conical, densely clothed with stupose fibres. *Frond* 8-10 inches long, from $\frac{1}{8}$ to $\frac{1}{4}$, or sometimes nearly $\frac{1}{3}$ an inch in width, distichously branched from the base, the lower branches generally opposite as are also several of the upper ones, the latter more or less unilaterally dichotomous and thus alternate, all issuing at a small angle, membranaceous, translucent and thin, in age becoming more opake and subcoriaceous, destitute of evident pores, every where furnished with a percurrent nerve, which is medial through the branches, but as it approaches the axillæ deviates towards the upper margin of the lamina. *Apices* of the branches entire, or very generally three-toothed. *Colour* when young a fine olive, becoming foxy brown in age. *Substance* tough, but soft, very like that of *Dictyota dichotoma*. *Receptacles* at the apex of the nerve of the frond, generally terminating the middle tooth of the three, but sometimes produced by all the teeth, conical, rather acute, fleshy, not quite a line in length, composed of branching filaments radiating round a columnar axis, and bearing *spores* and *antheridia* on the same filament; the *antheridia* oblately elliptical, terminating the threads, containing coloured matter, and having the three joints immediately below them slightly swollen and coloured; the *spores* linear-oblong, seated on short side branches at the lower part of the filaments, filled with dense olivaceous endochrome.—In habit this plant very strongly resembles *Halyseris polypodioides*, but its structure is dissimilar, and the fruit altogether different. In the fruit it entirely agrees with *Sporochnus Cabreræ*, Ag., a plant which Kützing has, with great propriety, made the type of his genus *Carpomitra*.

DICTYOTEÆ.

36. Zonaria *flava*, Ag. *Z. Tournefortii*, Mont.

HAB. Bay of Islands, *Lyall. Hooker.*

Our specimens are abundantly covered with the large cushion-like blotches of fructification, which are very irregular in form and size. They do not appear to differ in any essential respect from Canary Island specimens also before us.

37. Zonaria *Sinclairii*, nobis; cæspitosa, caule gracili filiformi flexuoso villoso ramoso, ramis setaceis elongatis in frondes pusillas anguste cuneatas fissas basi longe attenuatas abeuntibus.

Hab. New Zealand, *Dr. Sinclair*.

Root a widely spreading mass of stupose fibres, from which rise numerous slender filiform stems 4-5 inches long and scarcely thicker than hog's bristle, flexuous, branched, and every where clothed with short woolly hairs. The branches terminate in very narrow wedge-shaped cloven fronds. *Colour* a greenish-olive.

38. Dictyota *dichotoma*, Lam.

Hab. New Zealand, plentiful. *Lyall, &c.*

39. Dictyota *Kunthii*, Grev. *Zonaria Kunthii*, Ag. *Ic. t.* 16.

Hab. New Zealand, *Sinclair*.

Ectocarpeæ.

40. Sphacelaria *hordeacea*, Harv. *in Hook. Ic. Pl. t.* 614.

Hab. Bay of Islands, *Sinclair, Colenso, Lyall, Hooker, &c.*

41. Sphacelaria *virgata*, nobis; scoparia, basi stupposo, caulibus tenuibus, ramis basi sæpe nudis elongatis virgatis simplicibus circumscriptione lineari-lanceolatis, ramulis quadrifariis crebris brevibus pinnatis circumscriptione obovatis, pinnis creberrimis elongatis erectis simplicibus furcatisve vel secunde ramulosis fastigiatis apice sphacelatis.

Hab. Bay of Islands, *Davis, Lyall*.

Stem 8-9 inches long, in the lower part thickish and covered with dense woolly hairs, naked above and very slender; branches long and simple, setaceous, naked below, rough with the bases of broken ramuli, densely clothed with quadrifarious branchlets above, which are $\frac{1}{2}$-$\frac{3}{4}$ inch

long. *Ramuli* densely pinnated with long, simple or forked, fastigiate, erect pinnulæ resembling those of *S. scoparia.*

42. Sphacelaria *funicularis*, Montag. *Voy. au Pole Sud. t.* 14. *f.* 1. *Hook. fil. et Harv. in Fl. Antarct. p.* 180.

Hab. Akaroa, *Hombron.* East Coast, *Colenso* (218.)

43. Ectocarpus *siliculosus*, Lyngb.

Hab. Bay of Islands, *Hooker.*

Chordarieæ.

Scytothamnus, Nov. Gen.

Frons fruticosa, compressa v. cylindracea, vage ramosissima, cartilagineo-coriacea, e filis crassis longitudinalibus maxime intricatis flexuosis difformibus coloratis juxta peripheriam in fila radiantia horizontalia moniliformia dichotoma abeuntibus formata. *Utriculi* oblongi, inter fila peripheralia nidulantes, apicales.

44. Scytothamnus *australis*, nobis. *Chordaria australis*, Ag! *in Linnæa XV. p.* 47.

Hab. On rocks in the Bay of Islands, very abundant.

Root an expanded disk. *Fronds* tufted, 4-10 inches long, excessively branched and bushy, with the habit and substance of a *Cystoseira*, but a totally different structure, solid or hollow according to age; the lower part of the stem often almost woody, compressed or terete, coriaceous, opake. Under a lens the structure is very beautiful; the axis consists of longitudinal long-jointed anastomosing filaments coloured with a brown endochrome, closely packed together and somewhat parallel; the periphery of dichotomous moniliform horizontal filaments radiating from the outer ones of the axis, their joints containing a dark brown mass, and about equal in length and breadth. There is no prolongation of the filament beyond the surface of the frond, as in *Mesogloia* and *Chordaria*, but the threads of the periphery end abruptly in the epidermis, and are as closely glued together as those of a *Gigartina*.—A very curious plant, which we have ascertained by an interchange of specimens to be

the *Chordaria australis* of J. Agardh, who is now inclined, with us, to regard it as the type of a new genus, allied to *Chordaria* and *Mesogloia*. Our friend, M. Montagne, on the contrary, considers it one of the *Floridæ*, allied to *Grateloupia*, an opinion from which, for many reasons, we are compelled to dissent.

Rhodomeleæ.

Epineuron, Harv. in Herb.*

Frons plana, membranacea vel cornea, linearis, costata, distiche ramosa vel e disco prolifera, vage reticulata. *Cellulæ* interiores magnæ, polyhedræ, transversim ordinatæ; exteriores pluriseriatæ, pusillæ, coloratæ, irregulares. *Stichidia* semper e nervo enata, lanceolata, involuta, duplici serie sphærosporas foventia. *Ceramidia*. . . . — Algæ *frondosæ v. foliosæ fusco-rubræ, sæpe ad marginem dentatæ ciliatæve.*

45. †Epineuron *lineatum*, nobis. *Fucus lineatus*, Turn. *t.* 201. (non *Amansia multifida*, Lam.)

Hab. New Zealand, *Sir Joseph Banks.*

An attentive perusal of Turner's characters of his *Fucus lineatus* has convinced us that it must be something very different from *Amansia multifida*, to which Agardh unites it. The description has so much in common with the following species, which does not however answer to the figure, that we venture to refer the Banksian species to the present genus.

46. Epineuron *Colensoi*, nobis; fronde lineari angustissima obsolete costata badia transversim striata siccitate rigida vage pinnatim bi-tripinnatimve ramosa, pinnis pinnulisque longissimis simplicissimis erectis inciso-serratis, serraturis (laciniisve) alternis erecto-patentibus subulatis acutis,

* To this genus also belong *Fucus fraxinifolius*, Turn.; (E. fraxinifolium, *Harv.*) and probably *F. confertus*, Turn. It differs from *Dictymenia* essentially in the position of the fructification, and in habit. I have another unpublished species (*E. Backhousii*) from the Swan River.—W. H. H.

stichidiis nervum creberrime vestientibus filiformibus incurvo-hamatis simplicibus.

Hab. East Coast, *Mr. Colenso.* Bay of Islands, *Lyall.*

Our specimens, apparently broken, are 5-6 inches in length, and not a line in breadth. The main stem, from loss of membrane and thickening of midrib, is narrower than the branches. It is irregularly divided at a few long intervals into principal branches, which are bare of ramuli in their lower part, but closely pinnated and sometimes bipinnated above, the pinnæ very erect. Every part of the frond is regularly inciso-serrate, the serratures being from ½ a line to nearly a line in length, and about as much asunder, alternate, subulate, acute. The midrib, which is evident below, becomes very faint upwards, and is gradually lost in the younger portions of the frond. The colour of our specimens is a dark reddish brown, fading to white on maceration. The substance is rigid, thickish, and it does not adhere to paper. Under a lens of lower power, the frond appears closely striate transversely, owing to the arrangement of the cellules in the interior of the frond; under a higher power this character is lost, as the cells of the periphery, which are small and more opake, obstruct the view. The stichidia are produced in great abundance along the midrib, which eventually they completely cover. Our plant is much less branched than Turner's *F. lineatus,* with longer and straighter branches, a more rigid and thicker substance, and a different colour.

47. *Rhodomela *pinastroides,* Ag. *Fucus pinastroides,* Turn. *t.* 11.

Hab. New Zealand, *Sir Joseph Banks.*

No one has gathered this species at New Zealand since the time of Banks, whose specimen is vouched for by Turner. We earnestly hope some of our friends at New Zealand may re-discover it.

48. Rhodomela *Mallardiæ,** Harv.; siccitate nigra, caule

* My first acquaintance with this plant was from beautiful specimens

elongato cartilagineo filiformi crassiusculo inarticulato pinnatim bipinnatimve ramoso, ramis simplicibus densissime ramulis velatis, ramulis brevissimis obsolete articulatis striatis dichotome multifidis quadrifariis patentibus.

Hab. East Coast, *Colenso*.

Frond 6-8 inches long, as thick as pack-thread, branched with greater or less regularity in an alternate pinnate manner, the branches often again producing a set similar to themselves. The lower part of the stem and the bases of the larger branches are naked and smooth, while all their upper portions and the branches are densely covered with short ramuli, which give the plant the habit of *Cladostephus spongiosus*. *Ramuli* a line long, rigid, horizontally patent, irregularly dichotomous with patent axils, fastigiate, the apices acute, imperfectly jointed, the dissepiments opake. *Joints* as long as broad, with few striæ. *Colour* when dry intense black. *Ceramidia* (on Mrs. Mallard's specimens) ovate-urceolate, with a slender protruding mouth, sessile on the ramuli, which are then thicker and less divided than usual. *Tetraspores* immersed in the scarcely distorted uppermost divisions of the ramuli, in a single row.—The habit of this species is very similar to that of *R. Larix* and *R. floccosa*. There is also a resemblance to *Polysiphonia glomerata*, but the structure is different.

49. Rhodomela? *spinella*, nobis; pusilla, cartilaginea, rigida, densissime cæspitosa, intricata, vage ramosa, ramis elongatis patentissimis divaricatisve simplicibus furcatisve, ramulis spinæformibus subulatis acutis horizontalibus undique emissis, tetrasporis in ramorum majorum peripheria nidulantibus sparsis.

found by Mrs. Mallard at Port Philip, on the same occasion that she gathered the wonderful *Thuretia quercifolia* in such unexampled perfection. Mrs. Mallard's specimens are larger and more branching than Mr. Colenso's, and not so coarse in the stem or so shaggy in the ramuli, but we cannot find a good specific character to separate the Port Philip from the New Zealand plant, and the discrepancies in question are probably owing to climate, or to local circumstances, such as difference of exposure to rough water, &c.—W. H. H.

HAB. East Coast, *Colenso*. Bay of Islands, *Hooker*.

Fronds ½ inch to 1 inch in height, setaceous, densely matted together in broad tufts, much and irregularly branched, rigid, brownish-red, turning black in drying; branches very patent, simple or forked, as long as the height of the frond, and more or less furnished with patent spine-like ramuli, which issue at right angles and are frequently secund. *Tetraspores* scattered over the branches, immersed in the periphery. Structure : a large central tube surrounded by several concentric rows of endochromatic cells or tubes, which gradually become smaller outwards.—This species so closely approaches in appearance the West Indian *Gigartina spinella*, that it can scarcely be distinguished except by its darker colour, until a section of the stem reveals its different structure. It also strongly resembles *Gelid. corneum* var. *crinale*, but may be known at once by its acute ramuli. The structure is decidedly that of the family *Rhodomeleæ*, and not far different from that of *R. scorpioides*, but the fruit, so far as it has been observed, is of a very anomalous nature. It presents the only instance we know of among *Rhodomela* of scattered tetraspores.

50. Polyzonia *incisa*, J. Ag. *in Linnæa XV. p.* 24.

HAB. A common parasite on *Gelidium lucidum*.

51. Polyzonia *adiantiformis*, Dne. *in Nouv. Ann. Sc. Nat. XVII.* 363.

HAB. New Zealand, (*Decaisne.*)

52. Dasya *collabens*, nobis; caule fruticoso tereti inarticulato flaccido glabro alterne ramoso, ramis subdistichis erecto-patentibus simplicibus vel iterum alterne divisis fila articulata rosea monosiphonia dichotoma lateralia emittentibus, filis crassis sensim attenuatis acutissimis bis-terve furcatis, articulis diametro duplo vix triplo longioribus ad genicula subcontractis.

HAB. Akaroa, *M. Raoul.*

2—4 inches high. Nearly allied to *D. Arbuscula*, from which it differs in being of a much more flaccid, gelatinous nature, closely adhering to paper; and also more essentially

in the dichotomous filaments not being equal in diameter throughout, but their divisions gradually tapering to a fine point. The stem has 5 radiating tubes.

53. Polysiphonia *dendritica*, Ag.; prona, ad algas majores applicita pusilla disticha bipinnata, caule compresso pinnis creberrimis elongatis cum ramulis subulatis alternantibus obsesso, pinnis iterum pinnatis, pinnulis subulatis approximatis alterne majoribus ramulosis et minoribus simplicibus, articulis brevissimis pluri-striatis, ceramidiis sæpe obliquis pinnulas terminantibus globoso-urceolatis ostiolo prominulo.

Hab. Parasitical on *Gelidium lucidum*.

Frond ½ inch to 1 inch in length, lying flat on the surface of the *Gelidium*, and sometimes attached to it by the whole length of its main stem, all the branches being free. Agardh describes his plant (a native of Brazil) as being "*inordinate* ramosa, pinnis simplicibus compositisque intermixtis." We consider this apparent, not real, irregularity of the branching to have arisen from the frond at first being margined with subulate teeth which never change their form or size, but from whose axils spring secondary branches fringed like the primary with subulate ramuli, and that again, in the axils of these ramuli, tertiary branches are formed and so on. In this manner there arrives eventually a frond with simple and pinnated branches intermixed, and by the occasional non-development of the latter, irregularly so. This mode of branching is similar to that of *Polyzonia*.

54. Polysiphonia *aterrima*, nobis; rigidula, atra, caule sulcato brevissime articulato basi nudo setaceo sursum decomposite ramosissimo sensim attenuato vix dichotomo, ramis alternis secundisve iterum et iterum alterne divisis circumscriptione obovatis, ramulis ultimis subulatis subsimplicibus distantibus erectis axillis apicibusque acutis, articulis omnibus brevissimis 12-siphoniis, ceramidiis ovato-globosis obtusissimis sessilibus sparsis.

Hab. East Coast, *Colenso*.

4—5 inches long, setaceous. Joints evident in all parts

of the frond, very short, composed of beautifully hexagonal oblong cells, about 6 in the breadth of the joint, and internally formed of about twelve large tubes, each containing a separable sac of endochrome, surrounding a small central empty tube. Colour when dry very black, and substance rigid.

55. Polysiphonia *rytiphlæoides*, nobis; nigro-fusca, caule crasso fruticoso virgato tereti sulcato brevissime articulato e basi ramosissimo, ramis virgatis erectis decompositis, ramulis lateralibus quadrifariis erecto-patentibus sensim attenuatis ultimis subulatis sparsis apice fibrillosis, articulis ramorum 7-siphoniis diametro quadruplo brevioribus.

HAB. New Zealand, *Raoul.*

Frond 4-6 inches high, coarse, dark brown, bushy. Joints of the stem and branches pellucid, but exceedingly short, so that the frond may be said to be closely transversely striate, rather than jointed. This species is nearly allied to P. *cancellata* of Tasmania, but has a different habit and shorter joints.

56. *Polysiphonia *botryocarpa*, nobis, in Fl. Antarct. t. 70. *Rhodomela Gaimardi?* Mont. (not of Agardh.)

HAB. Akaroa, *Hombron.*

57. Polysiphonia *nigrescens*, Ag.

HAB. New Zealand, *Raoul.*

M. Raoul's specimens are small, but they have all the essential characters of this variable species.

58. Polysiphonia *Cladostephus*,* Mont! *Voy. Pole Sud.*

* Since this was prepared for press, Mr. Harvey has received from M. Montagne, to whom he communicated a specimen of his *P. byssoclados*, some fragments of the *P. Cladostephus* of that author, accompanied by the following note: "Admirez la ressemblance de deux choses que je crois pourtant différentes! Le fait est qu'en lisant votre diagnose, je présumai sur le champ que votre *P. byssoclados* était identique à mon *P. Cladostephus*. Maintenant, que j'ai vu la plante, je reste dans le doute. Il est vrai que mes exemplaires sont ceux d'une algue agée. Toutefois en les comparant de point en point, on trouve des différences assez marquées dans la con-

p. 132. *t.* 14. *f.* 4.—*P. byssoclados*, Harv.! in Hook. *Journ.* 3. *p.* 436. *Griffithsia australis*, Ag! *Bindera Cladostephus*, Dne!

Hab. New Zealand, *Raoul.*

59. Polysiphonia *implexa*, nobis; parvula, cæspitosa, basi radicans, implexa, frondibus erectis brevibus vage ramosis, ramis subalternis patentibus apice ramulos paucos emittentibus, ramulis subulatis patentibus subsimplicibus, articulis 4-siphoniis diametro equalibus v. inferioribus sesquilongioribus.

Hab. New Zealand, *Raoul.*

Our specimens are about an inch in height, and seem to have formed wide intricate patches on rocks. The species is allied to *P. intricata*, J. Ag. and several of the same section, but cannot be included under any described species known to us.

60. Polysiphonia *strictissima*, nobis; cæspitosa, atro-rubescens, frondibus capillaribus membranaceis tenacibus strictis dichotomis, axillis angustissimis, ramis erectis! fere appressis, articulis 4-siphoniis inferioribus diametro 6-8-plo, superioribus 5-plo, ultimis $1\frac{1}{2}$-3-plo longioribus, apicibus fibrillosis.

Hab. New Zealand, *Raoul.*

Tufts 4-5 inches long, dense and coarse, dark dull red, composed of dichotomous capillary fronds remarkably straight and erect. The character attributed to *P. stricta* applies better to this plant than to any specimens of that doubtful species that we have seen. But it would be absurd, on this account, to refer the present to Dillwyn's species, which is really very different, and probably only the young of *P. fibrata*.

sistence, la couleur, la longueur des ramules et la longueur des articules de ceux-ci." We have examined M. Montagne's specimen, and whilst we admit the points of difference pointed out by this acute observer, we fear they are not of sufficient importance to warrant our retaining two species; *P. byssoclados*, of which we have now some hundred specimens, varying considerably in all these respects.

61. Polysiphonia *microcarpa*, nobis; *in* Hook. *Lond. Journ. IV. p.* 265.

Hab. Akaroa, *Raoul.*

62. Bostrychia *mixta*, nobis; *in* Hook. *Lond. Journ. IV. p.* 270.

Hab. Bay of Islands, *Hooker.*

Corallineæ.

63. Jania *pistillaris*, Mont. *Voy. Pole Sud. p.* 147.

Hab. Bay of Islands, *Hombron, Colenso.*

64. †Jania *gracilis*, Mont. l. c.

Hab. Akaroa, *Hombron.*

Laurencieæ.

65. Laurencia *pinnatifida*, Lamx. *Fucus pinn.* Turn. *t.* 20.

Hab. New Zealand.

66. Laurencia *obtusa*, var. *botryoclada*, J. Ag.—*Laurencia botryoides*, Bory.

Hab. New Zealand, *Lyall, &c.*

Sometimes this nearly resembles *L. papillosa*, Ag. Other specimens are scarcely different from the common form of *L. obtusa*, and some again approach the cylindrical variety of *L. pinnatifida.*

67. *Laurencia *Forsteri*, Grev. *Fucus Forsteri*, Turn. *t.* 77.

Hab. New Zealand, *Forster.*

68. *Laurencia *papillosa*, Grev. *Fucus thyrsoideus*, Turn. *t.* 19.

Hab. New Zealand, *Sir Joseph Banks.*

Cladhymenia, Harv. in Herb.

Frons membranacea, rosea, plana, tenuis, linearis, distiche pinnatifida, flaccida, e cellulis magnis polygonis granuliferis superficiem versus minutis composita. *Ceramidia* (in *Cl. Lyallii*) oblonga, ramuliformia e ramulo inflato vix contracto formata, fasciculum granularum foventia. *Sphærosporæ* (in *Cl. Gunnii*) minutæ, oblongæ per totam frondem sparsæ, inter cellulas superficiales nidulantes.—

Algæ Australasicæ substantia habituque ad *Halymeniam*, structura tamen ad *Laurenciam* affines. Apices ramulorum obtusissimæ.

In this group we propose to include, beside the two following species, the *Laurencia? membranacea* of Harv. in Hook. Journ. (*Cladhymenia Gunnii, Harv. MS.*), although as yet we are only acquainted with the tetraspores of that plant; and although there is a slight discrepancy in the structure of its frond, the stratum of minute surface cellules being nearly obsolete. Still, the habit is so completely similar to that of the following species that we think it may with safety be referred to our new genus. The *ceramidia*, if such they may be called, are certainly the lowest development of that organ with which we are acquainted, being no more than slightly inflated ramuli, scarcely shorter than the unmetamorphosed ones, containing at the bottom of the inflated portion a tuft of unequal angular seeds.

69. Cladhymenia *Lyallii*, nobis; radice fibrosa ramosa, fronde angusta nervo obsoletissimo percursa gelatinoso-membranacea bi-tripinnatifida, laciniis lineari-lanceolatis basi angustatis patentibus apicem versus brevioribus, supremis simplicibus, inferioribus elongatis pinnatifidis bipinnatifidisque, ramulis filiformibus obtusis, ceramidiis ellipticooblongis pedicellatis.

Hab. Bay of Islands, *Lyall.*

Fronds 4-5 inches high, in circumscription broadly deltoid, filiform at base, quickly becoming flat, and gradually acquiring the breadth of one, and in the middle of 2-3 lines, and thence tapering to the apex, traversed by an obsolete internal nerve like that of certain *Plocamia*, repeatedly pinnatifid. Pinnæ tapering at both extremities like the main stem, the lowest bipinnatifid, the middle pinnatifid, the uppermost simple or merely toothed; ultimate ramuli linear, filiform, obtuse. *Colour* a fine rosy red.

70. Cladhymenia *oblongifolia*, nobis; radice fibrosa ramosa, fronde latiuscula enervi gelatinoso-membranacea pinnatifida et bipinnatifida, laciniis erecto-patentibus oblongis

basi attenuatis subpetiolatis apice obtusissimis subtruncatis, ramulis altimis pusillis ciliæformibus linearibus obtusis brevibus alternis, ceramidiis oblongis pedicellatis.

HAB. Paroah Bay, *Lyall.* (A single specimen.)

Our specimen is 4 inches long, the stem ½ an inch broad in the middle, gradually tapering to the base, and very blunt at the apex. The plant probably attains to a much greater size. *Colour* a rosy pink.

71. Chylocladia *parvula*, Grev.

HAB. Akaroa, *D'Urville*, *Raoul.*

72. Chylocladia *Novæ Zelandiæ*, nobis; stipite brevi cylindraceo mox in frondem lato-linearem ampliato, caule (juniori tantum viso) simplici compresso articulato-constricto, ramis oppositis verticillatisve basi attenuatis, articulis diametro duplo brevioribus, tetrasporis per ramulos sparsis.

HAB. Bay of Islands, parasitical on the base of *Sphacelaria hordeacea*, *Lyall.*

Doubts, chiefly respecting its genus must rest on this species till we shall have received more perfect specimens. It has something the habit of *Champia*, and may possibly be more correctly placed in that genus. Our largest specimen is 3 inches long, and about a line in breadth, but it had only commenced throwing out its lateral branches, and we have yet to learn to what extent these are developed. The whole frond is divided by transverse diaphragms, at intervals of about half the diameter, and these are connected, as in *Champia*, by numerous rope-like threads. There is a slight contraction at the joints. The colour, probably iridescent when growing, is a dull greenish suffused with pink.

DELESSERIEÆ.

73. Delesseria? *Leprieurii*, Mont. *in Nouv. Ann. Sc. Nat. XIII.* 196. *t.* 5. *f.* 1.

HAB. Bay of Islands, near high water mark, parasitical on *Bostrychia mixta*, *Gelidium corneum* var. *crinale*, and *Apophlæa Sinclairii*.

The New Zealand specimens are of much smaller size than those from Cayenne, and the cellules composing the frond are somewhat differently shaped, whence we had at first considered that they might be regarded as a distinct species, having nearly the relation to the first that *D. ruscifolia* has to *D. Hypoglossum*. But a form, seemingly intermediate, found by Professor Bailly at New York, and communicated to us by M. Montagne, induces us to agree with this acute observer in regarding our plant as identical with the American species. Mr. Harvey is hardly satisfied with the position of this plant in *Delesseria*, and at one time proposed the MS. name *Caloglossa* for it, but he now fears that there are not sufficient data on which to found a genus.

74. *Plocamium *Corallorhiza*, nobis; *Thamnophora Corallorhiza*, *Ag. Fucus Corallorhiza*, Turn. *t.* 96. and *F. cirrhosus*, *ib. t.* 63.

HAB. Dusky Bay, *Forster*.

The variety *cirrhosa* only has been found at New Zealand, and it may possibly prove distinct from the Cape of Good Hope plant. No character can, however, be derived from the cirrhose prolongations of the branches, which frequently occur in *P. Cunninghamii* and in other species.

75. Plocamium *procerum*, nobis. *Thamnophora procera*, J. Ag. *in Linn. XV.* 10.

HAB. New Zealand, *Lyall*.

76. Plocamium *Cunninghamii*, nobis; fronde angusta tenui nervo obsoleto percursa flabellatim ramosissima subfastigiata, ramis ramulisque alterne geminis decompositis, ramulis erecto-patentibus anguste triangularibus acuminatis ad marginem exteriorem (sæpissime) argute serratis, axillis rotundis. *Thamnophora Cunninghamii*, Grev. *in Hook. Comp. Bot. Mag.* 2. *p.* 329.

HAB. New Zealand, very abundant. *R. Cunningham* and all succeeding voyagers.

This appears to be the commonest species at New Zealand, and yet, though we have examined hundreds of specimens we have not seen any in fruit. *Fronds* 4-6 inches high, a line or rather more in breadth.

77. Plocamium *abnorme*, nobis; fronde angusta tenui nervo obsoleto percursa pinnatim decomposita virgata, pinnis pinnulisque alterne geminis sensim angustatis, ultimis angustissimis, ramulis subulatis integerrimis acutis, stichidiis axillaribus subsolitariis simplicibus furcatisve lanceolatis, nonnunquam e pinnulis ipsis ultimis transmutatis formatis.

HAB. Bay of Islands, *Lyall, Hooker.*

Very nearly related to *P. angustum* (*Thamnophora angusta*, J. Ag.), but differing in the fructification, which often affords a satisfactory character in this genus. In *P. angustum* the stichidia form dense racemose clusters, here they are commonly solitary and either simple or once forked; but what is strange, and has suggested the specific name, the ultimate pinnules themselves are frequently converted at their tips into false stichidia, which bear tetraspores like the rest! The habit resembles *P. coccineum*, from which the *alternately geminate* branching, the position of the fruit and the substance separate it.

78. Plocamium *coccineum*, Lyngb. *Fucus coccineus*, Turn. *t.* 59.

HAB. New Zealand, *Cunningham, Hooker, Lyall.*

79. †Plocamium *confervaceum*, Bory, *in Dup. Voy. p.* 164.

HAB. New Zealand, *Lesson.*

Possibly this scarcely known and ill characterised species may be the same as our *P. abnorme.*

SPHÆROCOCCOIDEÆ.

80. Rhodomenia *Hombroniana*, Mont. *Voy. Pole Sud. p.* 157. *t.* 1. *f.* 2. Hook. fil. *Fl. Antarct. t.* 72. *f.* 2.

HAB. Akaroa, *Raoul.*

81. Rhodomenia *variegata*, Mont. *Halymenia variegata*, Bory, *in Dup. Voy. t.* 14.

Hab. Bay of Islands, *Lyall.*

82. Rhodomenia *lusoria*, Grev. *in Hook. Comp. Bot. Mag.* 2. *p.* 329.

Hab. East Coast, *R. Cunningham.*

83. *Rhodomenia *corallina*, Grev. *Sph. corallinus*, Bory, *in Dup. Voy. p.* 175. *t.* 16.

Hab. New Zealand, *Lesson.*

84. Rhodomenia *dichotoma?* nobis, *in Fl. Antarct. t.* 72. *f.* 1.

Hab. New Zealand, *Lyall.*

A very imperfect scrap, possibly belonging to this species.

85. Rhodomenia *Montagneana*, nobis; stipite brevi crasso, fronde primaria oblongo-cuneata basi attenuata furcata simplicive carnoso-membranacea sanguinea madefacta fragillima frondes secundarias marginales et apicales cuneatas basi attenuatas furcatas dichotomasve emittente, coccidiis hemisphæricis prominulis numerosissimis per totam frondem sparsis marginatis, tetrasporis minutis oblongis zonatim quadripartitis in peripheria nidulantibus.

Hab. Bay of Islands, *Lyall, Hooker.*

Primary frond 4-8 inches long, frequently broken off at the apices and emitting from the truncate extremity and along the lateral margins, innumerable cuneate slightly stipitate fronds; the smaller of which, from one to four inches in length, are simple or merely emarginate, or slightly bifid, at the apex; the larger, 6-10 inches long, are forked, or once, twice, or thrice dichotomous. All are cuneate at base, and more or less stipitate; they vary in breadth from $\frac{1}{2}$-$1\frac{1}{2}$ inches. The axils are obtuse, and the apices acute. The substance is thickish, more fleshy than membranous, and when moistened after having once been dried it becomes extremely fragile, and if allowed to remain but a short time in fresh water will completely decompose. The colour is a fine blood red. The coccidia are extremely abundant, thickly dotted over the surface and fringing the margin, and (when dry) furnished with a broad pellucid limbus. In this respect, and

in the structure of the frond there is a near resemblance to *R. polycarpa*. The fronds which produce tetraspores are larger, with broader segments and perfectly smooth, and the tetraspores are thinly scattered over the surface, not collected into cloudy patches. A magnificent species, nearly allied to *R. ornata*, Mont.; but, as we are assured by that author, perfectly distinct, and we have much pleasure in inscribing it with his name, as a mark of our respect, and gratitude for his able illustration of the Algæ of the Southern Hemisphere.

86. Rhodomenia? *coriacea*, nobis; fronde crassa coriacea siccitate cornea flabelliformi palmatim et pedatim laciniata, laciniis cuneatis latis apice fastigiatis obtusatis, axillis rotundatis.

Hab. Bay of Islands, *Lyall*.

The specimens are too imperfect to enable us to decide on the genus, and probably the above character is very inadequate, but we are unable at present to give a more intelligible one. It is possibly a large growing plant, but our specimens, evidently broken, are only 4-5 inches long; they have a circular outline and a remarkably thick leathery and almost horny substance. Their slices under the microscope exhibit a structure not unlike that of *Rhodomenia;* the centre being composed of large polygonal cellules, gradually smaller to the surface. All the cellules contain endochrome.

87. Plocaria? *furcata*, nobis; fronde basi cylindracea mox compressa angustissima lineari pluries dichotoma fastigiata rigida tenacissima siccitate cornea, axillis patentibus obtusis, apicibus obtusissimis rotundatis, coccidiis ad latera furcarum inferiorum insidentibus subimmersisve sparsis v. sæpe oppositis.

Hab. Bay of Islands, *Sinclair*.

Frond 6-8 inches long, not half a line in diameter, of equal breadth throughout, pretty regularly dichotomous, in outline broadly flabelliform. *Substance* very tough, rigid and horny when dry. *Coccidia* borne on the lower branches, often op-

posite, one at each side of the frond. *Colour* faded. The structure of the stem is denser than is usual in the genus, the cellules of the axis being smaller, and those of the periphery more filamentously disposed than in the typical species.

88. *Hypnea *musciformis*, Lamx. *Fucus musciformis*, Turn. *t.* 127.

Hab. New Zealand, *Sir Joseph Banks.*

Cryptonemeæ.

89. Gigartina *livida*, J. Ag. *Fucus lividus*, Turn. *t.* 254.

Hab. Paroah Bay, *Lyall.*

90. *Gigartina *Chauvinii*, J. Ag. *Sphærococcus Chauvinii*, Bory, *in Duper. Voy. p.* 165. *t.* 20.

Hab. New Zealand, *D'Urville.*

91. †Gigartina *ancistroclada*, Mont. *Voy. Pole Sud. p.* 121. *t.* 7. *f.* 4.

Hab. Akaroa, *D'Urville.*

92. Gigartina *divaricata*, nobis, *in Fl. Antarct. p.* 187.

Hab. Bay of Islands.

Two imperfect specimens, seemingly belonging to this species.

93. Gigartina *torulosa*, nobis; caule (vix noto) subsimplici? subcompresso filiformi cartilagineo siccitate corneo, ramis lateralibus sæpe secundis creberrimis subsimplicibus v. vage furcatis nudis ramulosisve horizontaliter patentibus vix attenuatis, fructiferis nodulosis, ramulis furcatis patentibus, axillis latis, favellidiis omnino immersis per ramos dense sparsis.

Hab. New Zealand, *Hooker.*

Our specimens are very imperfect. They consist of portions of the stem, 3-4 inches long. The colour has faded. The most obvious character is taken from the fruit, which is completely immersed in the branches, its place being marked by a slight swelling, beneath which, in the substance of the branch, is found a dense mass of seeds or a flavellidium. The axis of the frond is composed of angular coloured cells,

vaguely congregated but scarcely forming filaments; the periphery of beautifully moniliform elongated radiating filaments.

94. Chondrus *alveatus*, Grev. *Fucus alveatus*, Turn. *t.* 239.

HAB. New Zealand, *Sir Joseph Banks, R. Cunningham, &c.*

95. Chondrus *chondrophyllus*, Grev. *Fucus chondrophyllus*, Turn. *t.* 222.

HAB. Wangari Bay, *D'Urville.*

96. Iridæa *decipiens*, nobis; pusilla, fronde cartilaginea stipitata flabelliformi plana dichotoma, laciniis cuneatis pluries furcatis ultimis angustatis linearibus acutis, axillis rotundatis, margine nunc simplici nunc ramenta linearia simplicia pinnatim emittente, favellidiis nunc maculæformibus immersis per totam frondem sparsis ellipticis oblongisve, nunc in verrucis umbilicatis ad apices ramentorum sessilibus immersis.

HAB. New Zealand, *Raoul.*

Two states of this plant are before us, one of which so closely resembles *Chondrus crispus*, that except by the fruit, and the ramenta fringing the margin, we cannot distinguish it; the other has a mixed character between a very slender variety of *Iridæa stiriata*, and a broad state of *Gigartina pistillata*. These two forms are very dissimilar, but one specimen referable by its fructification to the first, has more the habit of the latter, and thus connects the two. *Iridæa stiriata* and *J. Radula* have a similar *double* production of favellidia, one immersed in the frond, the other crowning the ramenta; and *J. stiriata* presents such wild variations in form, and sometimes so closely resembles the wart-bearing variety of the present species, that, though we have never seen any state exactly similar to what we now describe, we cannot entirely divest ourselves of doubt as to the validity of the present species. And yet the *chondroid* form is so unlike *J. Radula*, that we cannot well unite them.

97. Iridæa *stiriata*, Bory. *Fucus stiriatus*, Turn. *t.* 16.

HAB. Paroah Bay, *Lyall.*

98. Iridæa *Radula*, Bory. *Fucus bracteatus*, Turn. *t.* 25.

Hab. Bay of Islands.

99. *Iridæa *micans*, Bory, *in Dup. Voy. t.* 13.

Hab. Akaroa, *D'Urville.*

100. Halymenia *furcellata*, Ag.

Hab. East Coast, *R. Cunningham.*

101. †Halymenia *dubia*, Bory, *in Belang. Voy. p.* 32.

Hab. New Zealand, *D'Urville.*

102. Halymenia *Novæ Zelandiæ*, Montag. *Voy. Pole Sud. p.* 107. *t.* 12. *f.* 2.

Hab. Akaroa, *D'Urville.*

103. Dasyphlæa *insignis*, Mont. *Voy. Pole Sud. t.* 8. *f.* 3.

Hab. Akaroa, *D'Urville.*

104. Catenella *Opuntia*, Grev. *Fucus Opuntia*, Turn. *t.* 107.

Hab. New Zealand, *Lyall.*

105. Chrysimenia *secunda*, nobis; frondibus (pusillis) tubulosis membranaceis flaccidis roseis cæspitosis intricatis ramosissimis, ramis curvatis ramulisque patentibus sæpissime secundis linearibus obtusis æqualibus, ramulis distantibus paucis brevibus.

Hab. New Zealand, *Raoul.*

Fronds densely tufted, two inches high, setaceous, much branched; the branches generally secund and arched. *Colour* a rose red. *Substance* delicate and adhering to paper. The specimens are not in fruit.

106. Melanthalia *abscissa*, nobis. *Fucus abscissus*, Turn. *t.* 223.

Hab. New Zealand, *Sir Joseph Banks.*

107. Melanthalia *Jaubertiana*, Mont. *in Nouv. Ann. Sc. Nat.*

Hab. New Zealand, *Herb. Jaubert, Sinclair, Hooker, Lyall, &c.*

Not having been able to compare this plant with the Banksian specimen of *Fucus abscissus*, we abstain, on the strongly urged, though to us not convincing, arguments of our friend Montagne, from considering it identical with that described and figured by Turner, as *Fucus abscissus*. Long before the publication of M. Montagne's

figure we were well acquainted with what is now called *M. Jaubertiana*, but which we had unhesitatingly referred to Turner's *Fucus abscissus*. Nothing at all more resembling Turner's figure is known to us. Some of our specimens indeed might well pass for that he has depicted; while others resemble closely the larger form figured by the French Algologist. The difference mainly insisted on by M. Montagne lies in the stem, which in *M. Jaubertiana* is *cylindrical*, in *Fucus abscissus* "flat without veins or midrib." Were the *M. Jaubertiana* cylindrical throughout, we should not hesitate to agree with Montagne. But it is not so. The frond is most cylindrical below, it gradually diminishes upwards, and the upper portion is perfectly flat. The larger the specimen, the rounder is the stem, and in young specimens we find the frond compressed even in its lowest part, and if Turner's figure be taken to represent a young specimen, it is a characteristic. And it should be observed, that though he describes the frond as *flat*, the figure of a transverse section which he gives evidently represents a *compressed* frond.

108. Gelidium *corneum*, Lamour. *Fucus corneus*, Turn. *t.* 57.

Hab. New Zealand, several varieties.

109. Gelidium *lucidum*, Harv. *Fucus lucidus*, R. Br.! Turn. *t.* 238. *Phyllophora lucida*, Grev.

Hab. New Zealand, very common.

A beautiful plant, generally recognisable by the broad, flat, more or less midribbed frond and shining surface; but varieties occur which approach the var. *sesquipedale* of *G. corneum*. We, have ascertained our plant to be the same as that of Turner, having been favoured by Mr. Brown with an inspection of his original specimen.

110. Ctenodus *Labillardieri*, Kütz. *Fucus Labillardieri*, Turn. *t.* 137.

Hab. New Zealand, *Sinclair*.

Apophlæa, Harv.

Frons cylindrica, cartilaginea, solida, crassa, dichotoma, e

filis tenuissimis strictis parallelis peripheriam versus radiantibus constituta. *Peripheria* (madefacta) fungoso-incrassata, rupta, decidua. *Fructus* ——. Algæ *littorea intense rubra, uncialis, crassissima, pluries dichotoma, fastigiata.*

111. Apophlæa *Sinclairii*, nobis.

Hab. New Zealand, *Sinclair.*

In a dry state this anomalous production resembles a very robust *Lichina*, being black and rigid. When moistened, however, this appearance wholly vanishes. The black woody wrinkled stems become of a brilliant crimson, and their outer coat, imbibing moisture much more readily than the very dense axis, swells to twice or thrice its bulk when dry, and is broken in all directions, and falls away in flakes, leaving the solid axis behind. The frond is from ½ an inch to an inch in height, but when moistened is 2-3 lines in diameter!

Ceramieæ.

112. Ballia *Brunonis*, Harv. *Sphacelaria callitricha*, Ag. *Ballia callitricha* and *B. Hombroniana*, Mont.

Hab. New Zealand, East Coast, *Colenso* (223).

We retain the specific name imposed by Mr. Harvey in founding the genus, given in honour of the original discoverer of this beautiful plant, "The Prince of Botanists."

113. Ptilota *formosissima*, Mont. *Voy. Pole Sud, p.* 98. *t.* 9. *f.* 3. Hook. fil. *Fl. Antarct. t.* 77.

Hab. East Coast, *Colenso.*

114. Ceramium *cancellatum*, Ag.

Hab. Bay of Islands, *Lyall.*

Chlorospermeæ.

115. Caulerpa *Selago*, Ag. *Fucus Selago*, Turn. *t.* 55.

Hab. New Zealand, *Colenso.*

116. Caulerpa *hypnoides*, Ag. *Fucus hypnoides*, Turn. *t.* 173.

Hab. New Zealand, *Colenso.*

117. Codium *tomentosum*, Ag. *Fucus tomentosus*, Turn. *t.* 135.

Hab. New Zealand.

118. Conferva *herpestica*, Mont. *Voy. Pole Sud. p.* 6.
HAB. Bay of Islands, *Hombron, Hooker.*
119. Conferva *clavata*, Ag. *Syst. p.* 99.
HAB. East Coast, *Colenso.*
120. Conferva *bombycina?* Ag.
HAB. In fresh water.

(N.B. Besides these, there are 4 or 5 other *Confervæ* received from Mr. Colenso, but in so imperfect a state, and entangled together, that it is impossible to extricate them, or to describe them in intelligible language.)

121. Enteromorpha *compressa*, Ag.
HAB. New Zealand, abundant, *Hooker.*
122. Enteromorpha *intestinalis*, Ag.
HAB. Bay of Islands, &c. *Hooker.*
123. Ulva *Linza*, Ag.
HAB. Bay of Islands, &c. *Hooker.*
124. Ulva *latissima*, Ag.
HAB. Shores of New Zealand, abundant, *Hooker.*

(*To be continued.*)

BOTANICAL INFORMATION.

Notes of a Botanical Visit to MADRAS, COIMBATORE, *and the* NEELGHERRY MOUNTAINS; *by* G. GARDNER, ESQ. F.L.S., *Superintendent of the Royal Botanic Gardens, Ceylon.*

(*Continued from p.* 409.)

Our first botanical excursion of any length was to the summit of Dodabetta, which is about four miles distant from Ootacamund. The ascent is so gradual that one may ride the whole way. We of course met with much that was new to me, although almost every thing was quite familiar to Dr. Wight. On shady banks, and even in open exposed places, the wild Strawberry (*Fragaria elatior*), grows in the greatest profusion, from the level of Ootacamund, even to the very summit of the mountain, in which latter situation I