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III.—Catalogue of Ceylon Algæ in the Herbarium of the British Museum

George Murray F.L.S. ^{a b}

^a British Museum

^b Glasgow University

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III.—*Catalogue of Ceylon Algæ in the Herbarium of the British Museum.* By GEORGE MURRAY, F.L.S., Assistant, British Museum, and Examiner in Botany, Glasgow University.

WHEN the Trustees of the British Museum acquired the collection of Algæ formed by the late Prof. Dickie of Aberdeen, it was found that it contained a partly-named series collected by Mr. Ferguson in Ceylon. I have revised and completed the naming of this series so far as I judged it possible from the material. There are a fair number of specimens (as in all collections of Algæ) to which it is not possible to give more than a generic name. I have withheld these, and among them a species of *Callophyllis* and one of *Bryopsis*, which Prof. Dickie believed to be new. On most of these further material may, it is to be hoped, throw light. One species of *Spirogyra*, one *Zygnema*, one *Sirogonium*, one *Cladophora*, one *Prasiola*, and one *Lyngbya* have also received MS. names from Prof. Dickie. Mr. A. W. Bennett has kindly promised to deal with these in a paper on new freshwater Algæ in the British Museum Herbarium.

Prof. Harvey's list of Duplicate Ceylon Algæ extends to 105 numbers, not 106 as numbered. Nos. 48 and 87 are wanting, and no. 30 occurs twice. I have quoted all those named by him in full, or that I have found named since by Agardh, though a few of them are not in the British Museum. I have omitted the one Diatom *Biddulphia pulchella*, Grev., in the list. It was not distributed by Harvey, and we have no specimen of it from Ceylon. Harvey's list as quoted numbers 87. Ten are quoted as collected by Kjellman only. Mr. Ferguson, in addition to those collected by Harvey and by himself, has added 126 to the list, which in all numbers 223.

I make this Catalogue public now with the hope that by this means its extension may be more rapidly effected. Other collectors have been at work and, so far as the result of their labours supplements this list, it is to be hoped it will be made known.

An examination of the Algal Herbarium at Kew may be expected to yield additions, and the total would be considerably augmented by the citation of the Diatoms in the 'Catalogue des Diatomées de l'Île Ceylan,' by Dr. G. Leuduger-Fortmorel. The British Museum Herbarium contains certain unpublished series of Algæ, which I have quoted in giving the distribution, *e. g.* "Bombay, Hobson!" and

“Kurrachee, Murray !” In those cases where no distribution is given the species is recorded for Ceylon only, so far as I can ascertain. Taking only the marine Algæ of the list it is found that there are 118 Florideæ, 33 Phæophyceæ, and 57 Chlorophyceæ. Of these 17 Florideæ, 2 Phæophyceæ, and 7 Chlorophyceæ are, so far as is known, peculiar to Ceylon. Of the rest, 60 Florideæ, 21 Phæophyceæ, and 27 Chlorophyceæ have been previously recorded for the Indian Ocean (including in it the Red Sea), many of these being species widely distributed throughout the shores of tropical, subtropical, and temperate seas. 8 Florideæ, 2 Phæophyceæ, and 1 green alga, hitherto known only from the Cape, are now recorded from Ceylon as well. Of Atlantic forms, 17 Florideæ, 5 Phæophyceæ, and 15 Chlorophyceæ, some of them known from Australia and from the Pacific as well, may be said to have now doubled the Cape. Of species hitherto recorded from Australia alone, 7 Florideæ and 1 green alga are added to the Ceylon list, while of Pacific species (including some common to Australia) 5 Florideæ, 3 Phæophyceæ, and 5 Chlorophyceæ are now known to extend to the Indian Ocean. Lastly, and this is an unsatisfactory record, 4 Florideæ and 1 green alga, hitherto recorded from the Mediterranean or Adriatic only, go to compose the following list.

Speculation on this record would be worthless in the present state of our knowledge ; but I may venture to point out that ships' bottoms traversing the Suez Canal may be expected in time to affect the distribution of Mediterranean and Red Sea and Indian Ocean species.

I. FLORIDEÆ.

CERAMIEÆ.

Callithamnion pygmæum, Kütz.

Ferguson !

Geogr. distr. Mauritius, Adriatic.

Callithamnion purpuriferum, J. Ag.

Ferguson !

Geogr. distr. Cape of Good Hope.

Callithamnion thyrigerum, Thw.

Harvey ! No. 47. Ferguson !

Griffithsia corallina ?, J. Ag., var.

Harvey ! No. 46.

Geogr. distr. Atlantic Ocean (from Scotland to the Canaries), Mediterranean.

Griffithsia neapolitana, Näg.

Ferguson !

Geogr. distr. Naples.

Ceramium miniatum, Suhr.

Ferguson !

Geogr. distr. Pacific, Australia (St. Vincent, Cape Verds?).

Centroceras clavulatum, Ag.

Harvey ! No. 43.

Geogr. distr. Throughout all warm and temperate oceans.

Centroceras macracanthum, Kütz.

Ferguson !

Geogr. distr. Coast of Brazil.

Centroceras hyalacanthum, Kütz.

Ferguson !

Geogr. distr. Antilles, St. Vincent, Cape Verds.

Centroceras brachyacanthum, Kütz.

Ferguson !

Geogr. distr. Antilles.

Carpoblepharis ceylanica, Harv.

Harvey ! No. 42. Ferguson !

CRYPTONEMIACEÆ.

Halymenia platycarpa, Ag.

Harvey ! No. 52 (sub *Sarcodia*). Ferguson !

Geogr. distr. Pacific (Friendly Islands).

Halymenia floresia, Clem.

Ferguson !

Geogr. distr. Red Sea, Australia, Mediterranean, Atlantic.

Halymenia imbricata, Dickie, n. sp.

"Peltate, palmately lobed, lobes imbricate ; apices convex, laciniate."—*Dickie, MS.*

Ferguson !

Tutucorin, April 1875. "Found in dense, soft, flabby masses."—*Ferguson.*

Halymenia amœna, Bory.

Ferguson !

Geogr. distr. Cape Comorin.

Halymenia dubia, Bory.

Ferguson !

Geogr. distr. Cape Comorin.*Grateloupia flicina*, Wulf.

Harvey ! No. 40. Ferguson !

Geogr. distr. Indian Ocean, Cape of Good Hope, Pacific, throughout Atlantic, Mediterranean.*Cryptonemia rigida*, Harv.

Harvey ! No. 51.

GIGARTINEÆ.

Gigartina acicularis, J. Ag.

Ferguson !

Geogr. distr. Kurrachee (*Murray* !), Mediterranean, Atlantic, Cuba.*Gymnogongrus pygmæus*, Grev.

Ferguson !

Geogr. distr. Indian Ocean.*Gymnogongrus glomeratus*, J. Ag.

Ferguson !

Geogr. distr. Mauritius, Cape of Good Hope.*Gymnogongrus vermicularis*, Turn.

Ferguson !

Geogr. distr. Mauritius, Cape of Good Hope, Chili and Peru, New Caledonia.*Gymnogongrus ligulatus*, Harv.

Harvey ! No. 50. Ferguson !

Geogr. distr. Japan ? [J. G. Agardh, Spec. Gen. et Ord. Alg. vol. iii. p. 214, says, "*G. ligulatus*, Harv., Alg. Ceyl. mihi est *Cryptonemiæ* sp."]*Phyllophora Maillardi*, Mont. et M.

Ferguson !

Geogr. distr. Indian Ocean. [J. G. Agardh, *loc. cit.* p. 682, states, "Fide iconis datæ hæc mihi nulla species *Phyllophoræ* videtur, sed *Cryptonemiæ* species e sectione *Acrodisci*, ad *Cr. rigidam* accedens, si cum hac non omnino identica sit." The specimen so named by Prof. Dickie has not the least resemblance to *Cryptonemia rigida*. It is distinctly a *Phyllophora*. I am inclined to regard it as *P. rubens*, var.]

Kallymenia perforata, J. Ag.

Hb. J. E. Gray ! Ferguson !

Geogr. distr. [Agardh describes the species from a Ceylon specimen in Herb. J. E. Gray, now in Herb. Mus. Brit.]

SPYRIDIEÆ.

Spyridia insignis, J. Ag.

Harvey ! No. 44. Ferguson.

Geogr. distr. Indian Ocean.

CHAMPIEÆ.

Champia parvula, Ag.

Ferguson !

Geogr. distr. Mediterranean, Atlantic, Pacific, Australia.

Champia affinis, Hook. et Harv.

Ferguson !

Geogr. distr. Australia, Tasmania, and New Zealand.

Champia ceylanica, Harv.

Harvey ! No. 92.

Champia compressa, Harv.

Harvey ! No. 16.

Geogr. distr. Cape of Good Hope, Australia ?

RHODYMENIACEÆ.

Chrysomenia uvaria, Wulf.

Ferguson !

Geogr. distr. Tropical and subtropical Atlantic (Europe and America) and Australia.

Chrysomenia obovata, Sond.

Ferguson !

Geogr. distr. Australia.

Desmia tripinnata, J. Ag.

Ferguson !

Geogr. distr. Cape of Good Hope.

Desmia Hornemanni, J. Ag.

Ferguson !

Geogr. distr. Cape of Good Hope.

Desmia ambigua, J. Ag.Harvey ! No. 21, and var. *pulvinata*, Harv. No. 91.*Geogr. distr.* Indian Ocean, from Ceylon to Australia.

SQUAMARIÆ.

Peyssonnelia rubra, Grev.

Harvey ! No. 41. (No specimen from Harvey in Herb. Mus. Brit.). Ferguson !

Geogr. distr. Adriatic. [Agardh criticises Harvey's naming of *P. rubra* from the Friendly Islands, and states that the Australian specimens are *P. Gunniana*. He further states that he has not seen Harvey's Ceylon specimen. While I therefore quote Harvey's No. 41 with hesitation, having seen no specimen, I give Ferguson's specimen as *P. rubra* on Prof. Dickie's authority. They are certainly quite distinct from Harvey's Friendly-Island specimens and the Australian specimens referred by Agardh to *P. Gunniana*. On the other hand, they are more like *P. Dubyi*, Crn., as named by Dickie himself, than the Mediterranean *P. rubra* that I have seen.]

PORPHYRACEÆ.

Porphyra laciniata, Ag.

Ferguson !

Geogr. distr. Throughout all warm and temperate oceans.*Porphyra vulgaris*, Ag.

Harvey ! No. 82.

Geogr. distr. Throughout all warm and temperate oceans.

SPHÆROCOCOIDEÆ.

Corallopsis cacalia, J. Ag.

Harvey ! No. 30.

Geogr. distr. Red Sea.*Gracilaria lichenoides*, J. Ag.

Harvey ! No. 95. Ferguson !

Geogr. distr. Indian Ocean, Persian Gulf, Bombay (*Hobson* !).*Gracilaria confervoides*, J. Ag.

Ferguson !

Geogr. distr. Indian, Southern, Pacific, and Atlantic Oceans.*Gracilaria crassa*, Harv.

Harvey ! No. 29.

Gracilaria multipartita, Clem.

Ferguson !

Geogr. distr. Throughout Atlantic, Mediterranean, and Gulf of Mexico ; New Zealand.

Gracilaria corticata, J. Ag.

Harvey ! No. 96, sub *Rhodymenia purpurascens*, Harv.

Harvey ! No. 28. Ferguson !

Geogr. distr. Red Sea, Persian Gulf, and Indian Ocean ; Kurrachee (Murray !).

Gracilaria obtusa, J. Ag.

Harvey ! No. 30 *bis*. (No specimen from Harvey in Herb. Mus. Brit.)

Geogr. distr. Indian Ocean.

(*Cfr.* Agardh, Sp. Gen. et Ord. Alg. vol. ii. pars ii. p. 590, and vol. iii. p. 426.)

Sarcodia ceylanica, Harv.

Harvey ! No. 27. Ferguson !

DELESSERIEÆ.

Nitophyllum marginale, Harv.

Harvey ! No. 26.

Nitophyllum maculatum, Sond.

Ferguson !

Geogr. distr. Cape of Good Hope.

Caloglossa Leprieurii, J. Ag.

Ferguson !

Geogr. distr. Indian Ocean, Australia, and New Zealand, Atlantic.

HELMINTHOCLOADIACEÆ.

Nemalion ? attenuatum, J. Ag.

Ferguson !

Geogr. distr. Indian Ocean.

Scinaia furcellata, J. Ag.

Ferguson !

Geogr. distr. Indian Ocean (Kurrachee, Murray !, Bombay, Hobson !), Australia, Japan, Atlantic, and Mediterranean.

Scinaia carnosa, Harv.

Harvey ! No. 38. Ferguson !

Liagora pulverulenta, Ag.

Ferguson !

Geogr. distr. Mauritius, Atlantic (trop. Amer.).*Liagora viscida*, Forsk.

Ferguson !

Geogr. distr. Australia, Pacific, tropical and subtropical Atlantic, Mediterranean.*Galaxaura fragilis*, Lam.

Ferguson !

Geogr. distr. Red Sea, Indian Ocean, Japan, Madeira.*Galaxaura rugosa*, Sol.

Ferguson !

Geogr. distr. Tropical Atlantic, Mauritius, S. Andamans, China, Tahiti. [Agardh does not accept the Indian and Pacific specimens he has seen as *G. rugosa*. Having compared them with Atlantic specimens I cannot regard Agardh's reasons for separating them as sufficiently strong.]*Galaxaura lapidescens*, Lam.

Ferguson !

Geogr. distr. Throughout tropical and subtropical oceans.*Galaxaura Pikeana*, Dickie.

Ferguson !

Geogr. distr. Mauritius.

CHÆTANGIÆ.

Zanardinia marginata, J. Ag.Harvey ! No. 36 (sub *Galaxaura*). Ferguson !*Geogr. distr.* Throughout tropical and subtropical oceans.

GELIDIÆ.

Pterocladia lucida, R. Br.

Ferguson !

Geogr. distr. Australia, New Zealand, Lord Howe's Island, St. Helena.*Gelidium variabile*, Grev.

Harvey ! No. 33. Ferguson !

Geogr. distr. Indian Ocean.*Gelidium corneum*, J. Ag.Harvey ! No. 31, var. *proliferum*. Ferguson !*Geogr. distr.* Indian, Pacific, and Atlantic Oceans.*Gelidium acrocarpum*, Harv.

Harvey ! No. 34. Ferguson !

Geogr. distr. Friendly Islands.

Gelidium intricatum, Ag.

Ferguson !

Geogr. distr. Indian Ocean, Pacific.*Gelidium rigidum*, Vahl.

Harvey ! No. 32. Ferguson !

Geogr. distr. Tropical and subtropical Atlantic, Pacific, and Indian Oceans.

HYPNEACEÆ.

Hypnea hamulosa, J. Ag.

Ferguson !

Geogr. distr. Red Sea, Persian Gulf, Indian Ocean (Kur-rachee, *Murray* !) ; Formosa, Cape of Good Hope. Doubtful specimen from Martinique.*Hypnea spinella*, Ag.

Ferguson !

Geogr. distr. West Indies, Philippines.*Hypnea pannosa*, J. Ag. ?

Harvey ! No. 94. Ferguson !

Geogr. distr. Gulf of Mexico. Agardh is doubtful of the Indian-Ocean specimens ; Ferguson's Ceylon, Harvey's Ceylon and Friendly-Island, and Pike's Mauritius specimens certainly hardly agree with a Barbadoes specimen named by Dickie, but I have not seen the type.

SOLIERIEÆ.

Meristotheca papulosa, Mont.Harvey ! No. 39, sub *Halymenia ceylanica*, Harv. Ferguson !*Geogr. distr.* Red Sea and Indian Ocean.*Rhabdonia tenera*, J. Ag.

Ferguson !

Geogr. distr. Atlantic (West Indies and North America).*Rhabdonia robusta*, Grev., var. *Wightii*, J. Ag.

Ferguson !

Geogr. distr. Indian Ocean. [The other variety, *β. flagelliformis*, is Australian.]

CHONDRIEÆ.

Laurencia heteroclada, Harv.

Ferguson !

Geogr. distr. Australia.

Laurencia perforata, Mont.

Harvey! No. 19. Ferguson!

Geogr. distr. In tropical and subtropical seas.*Laurencia obtusa*, Huds.

Ferguson!

Geogr. distr. Throughout all warm and temperate oceans.*Laurencia hybrida*, J. Ag.

Harvey! No. 18.

Geogr. distr. Mediterranean and Atlantic (Europe).*Laurencia ceylanica*, J. Ag.

Harvey! No. 17.

Laurencia concinna, Mont.

Ferguson!

Geogr. distr. Australia, Philippines.*Laurencia fastigiata*, Mont.

Ferguson!

Geogr. distr. Mediterranean.

RHODOMELEÆ.

Acanthophora Delilei, Lam.

Ferguson!

Geogr. distr. Red Sea, Mediterranean.*Acanthophora dendroides*, Harv.

Harvey! No. 10.

Geogr. distr. Australia, Indian Ocean (Bombay, *Hobson*!)*Acanthophora Thierii*, Lam.

Harvey! No. 9. Ferguson!

Geogr. distr. Throughout warm and temperate Atlantic, Pacific (Friendly Islands).*Martensia fragilis*, Harv.

Harvey! No. 5.

Bryothamnion Seaforthii, Kütz.

Ferguson!

Geogr. distr. West Indies, Florida, Mexico, Brazil.*Bostrychia tenella*, J. Ag.Harvey! No. 11 (sub *B. calamistrata*, Mont.).*Geogr. distr.* Throughout warmer Atlantic, Cape of Good Hope, Pacific (Friendly Islands).

Rhodomela (?) *crassicaulis*, Harv

Harvey! No. 8.

[Agardh places this species among "species exclusæ," without giving it another resting-place.]

Polysiphonia secunda, Ag.

Ferguson!

Geogr. distr. Mauritius, Atlantic, and Mediterranean.

Polysiphonia obscura, J. Ag.

Ferguson!

Geogr. distr. Throughout Atlantic, Mediterranean.

Polysiphonia Thwaitesii, Harv.

Harvey! No. 15. Ferguson!

Polysiphonia utricularis, Zanard.

Ferguson!

Geogr. distr. Red Sea, Indian Ocean (Kurrachee, Murray!).

Polysiphonia mollis, Hook. et Harv.

Ferguson!

Geogr. distr. Australia.

Polysiphonia corymbosa, J. Ag.

Harvey! No. 12. Ferguson!

Geogr. distr. Mauritius, Bombay (Hobson!).

Polysiphonia ferulacea, Suhr.

Ferguson!

Geogr. distr. Atlantic, Australia, Pacific.

Polysiphonia glomerulata, Ag.

Harvey! No. 13. Ferguson!

Geogr. distr. Indian Ocean, Pacific, Australia.

Spec. inquir.

Polysiphonia rigidula, Kütz.

Ferguson!

Geogr. distr. West Indies.

Neurymenia fraxinifolia, J. Ag.

Harvey! No. 49 (sub *Dictymenia*).

Geogr. distr. Indian Ocean, Madagascar, Western Australia.

Polyzonia jungermannioides, J. Ag.

Harvey ! No. 6 (sub *Leveillia gracilis*, Dne.). Ferguson !
Geogr. distr. Red Sea, Indian Ocean, Australia.

Dasya struthiopenna, J. Ag.

Ferguson !
Geogr. distr. Australia.

Dasya stuposa, J. Ag.

Harvey ! No. 7 (sub *D. crassipes*, Harv.). Ferguson !

Dasya Hussoniana, Mont.

Ferguson !
Geogr. distr. Red Sea.

Dasya villosa, Harv.

Ferguson !
Geogr. distr. Australia.

Dasya naccarioides, Harv.

Ferguson !
Geogr. distr. Australia.

Dasya Lallemandi, Mont.

Ferguson !
Geogr. distr. Red Sea, Persian Gulf, Kurrachee (*Murray* !),
 Australia.

Dictyurus purpurascens, Bory.

Harvey ! No. 1. Ferguson !
Geogr. distr. Indian Ocean.

Vanvoorstia spectabilis, Harv.

Harvey ! No. 3. Ferguson !
Geogr. distr. Mauritius.

Vanvoorstia coccinea, Harv.

Harvey ! No. 4. Ferguson !

Claudea multifida, Harv.

Harvey ! No. 2.

CORALLINEÆ.

Hapalidium roseum, Kütz.

Ferguson !
Geogr. distr. Adriatic.

Melobesia verrucata, Lam.

Ferguson!

Geogr. distr. Mauritius, throughout Atlantic, Mediterranean.

Amphiroa fragilissima, Lam.

Ferguson!

Geogr. distr. Bermuda, West Indies, St. Vincent (Cape Verds), St. Helena, Admiralty Island, Indian Ocean (South Andamans).

Amphiroa rigida, Lam.

Harvey! No. 22.

Geogr. distr. Mediterranean.

Amphiroa dilatata, Lam.

Harvey! No. 23. No specimen from Harvey in Hb. Mus. Brit. Ferguson!

Geogr. distr. Indian Ocean (Kurrachee, *Murray*!), Cape of Good Hope, Japan.

Amphiroa anceps, Lam.

Ferguson!

Geogr. distr. Mauritius, West Indies.

Amphiroa Bowerbankii, Harv.

Ferguson!

Geogr. distr. Cape of Good Hope.

Cheilosporum cultratum, Aresch.

Ferguson!

Geogr. distr. Mauritius, Cape of Good Hope, Brazil, West Indies.

Cheilosporum pulchellum, Harv.

Harvey! No. 24.

Arthrocardia capensis, Leach.

Ferguson!

Geogr. distr. Cape of Good Hope.

Jania micrarthrodia, Lam.

Ferguson!

Geogr. distr. Mauritius, Australia, New Zealand.

Jania natalensis, Harv., var. *tenuior*, Harv.

Harvey! No. 25. Ferguson!

Geogr. distr. Natal.

II. PHÆOPHYCEÆ.

FUCACEÆ.

Cystoseira triquetra, J. Ag.

Ferguson!

Geogr. distr. Cape of Good Hope, Red Sea.*Cystoseira articulata*, Ag.

Ferguson!

Geogr. distr. Red Sea, (China Sea?).*Cystophyllum muricatum*, J. Ag., var. *virgata*, J. Ag.

Ferguson!

Geogr. distr. Australia, New Caledonia, Sunda Islands, Persian Gulf.

[The above variety occurs both in the Persian Gulf and Australia.]

Sargassum piluliferum, Ag.

Ferguson!

Geogr. distr. Pacific (Japanese waters).*Sargassum polycystum*, Ag.?

Ferguson!

Geogr. distr. Indian Ocean.*Sargassum ilicifolium*, Ag.

Harvey! No. 103. Ferguson!

Geogr. distr. Indian Ocean, Red Sea, Pacific.*Sargassum Wightii*, Grev.

Harvey! No. 106. Ferguson!

Geogr. distr. Indian Ocean, (Australia?).*Sargassum asperifolium*, Her. et Mart.

Ferguson!

Geogr. distr. Red Sea, Socotra (*Balfour*!).*Turbinaria vulgaris*, Ag.

Harvey! No. 102. Ferguson!

Geogr. distr. Indian Ocean, Australia, China seas.J. G. Agardh (Spec. Gen. et Ord. Alg. vol. i. p. 267) notes
“ad Zeylonam Mus. Paris.”

DICTYOTACEÆ.

Dictyota fasciola, Lam.

Harvey! No. 57. Ferguson!

Geogr. distr. Mediterranean, West Indies.

Dictyota dichotoma, Lam.

Ferguson!

Geogr. distr. Throughout all warm and temperate oceans.

Dictyota crenulata, J. Ag.

Ferguson!

Geogr. distr. Pacific Ocean (coast of Mexico).

Dictyota Kunthii, Ag.

Ferguson!

Geogr. distr. South Pacific.

Dictyota acuminata, Kütz.

Ferguson!

Geogr. distr. Red Sea, Socotra (*Balfour*!), Bombay (*Hobson*!).

Taonia Schröderi, J. Ag.

Ferguson!

Geogr. distr. Atlantic (Brazil) and Gulf of Mexico.

Padina pavonia, Gaill.

Harvey! No. 55. Ferguson!

Geogr. distr. Throughout all warm and temperate oceans.

Halysieris delicatula, Lam.

Harvey! No. 54. Ferguson!

Geogr. distr. Atlantic (Mexico, West Indies, Brazil).

J. G. Agardh (*Spec. Gen. et Ord. Alg.* vol. i. p. 116) notes that he possesses an aberrant form from Pernambuco, but doubts its claims to be regarded as a distinct species. The 'Challenger' specimens from Fernando Noronha also differ from the typical *H. delicatula*, and in some respects only, not in all, agree with Agardh's.

Halysieris polypodioides, Ag.

Ferguson!

Geogr. distr. Mediterranean, Atlantic, Southern Ocean (Tasmania).

Zonaria lobata, Ag.

Ferguson!

Geogr. distr. Atlantic, from Canaries, Bermuda, West Indies, and Brazil, to Cape of Good Hope.*Stæchospermum patens*, Hering.

Ferguson!

Geogr. distr. Red Sea, Kurrachee (Murray!).*Stæchospermum marginatum*, Ag.

Harvey! No. 53.

Geogr. distr. Red Sea.*Stæchospermum maculatum*, J. Ag.

Ferguson!

Geogr. distr. Indian Ocean, viz. Mauritius, Bombay (Hobson!), Kurrachee (Murray!).*Stæchospermum Suhrii*, Kütz.

Ferguson!

Geogr. distr. South Africa.

ECTOCARPACEÆ.

Ectocarpus arabicus, Kütz.On *Chnoospora fastigiata*. Ferguson!*Geogr. distr.* Red Sea (on *Sargassum*).*Ectocarpus indicus*, Sond.

Ferguson!

Geogr. distr. Indian Ocean.*Ectocarpus macrocarpus*, Harv.

Harvey! No. 101. Ferguson!

Sphacelaria furcigera, Kütz.

Ferguson!

Geogr. distr. Island of Karak, Persian Gulf.

MESOGLÆACEÆ.

Dermonema dichotomum, Grev. Alg. Wgt. ined. in

Harv. List Dup. Ceyl. Alg.

Harvey! No. 93. Ferguson!

Geogr. distr. Indian Ocean, viz. Malabar (Law! Alg. Wgt.), Madras (*Hb. Hook.*), Mauritius; Pacific (*Spruce*!). This last locality presumably extends the distribution to South-American shores.

Cladosiphon erythræum, J. Ag.

Ferguson!

Geogr. distr. Red Sea.

ARTHROCLADIACEÆ.

Chnoospora fastigiata, J. Ag.

Harvey! No. 60. Ferguson!

Geogr. distr. Atlantic, Pacific, and Indian Oceans.

SPOROCHNACEÆ.

Asperococcus sinuosus, Roth.

Ferguson!

Geogr. distr. Red Sea, Kurrachee (*Murray*!), Mauritius, Australia, throughout Atlantic, Mediterranean, &c.

Asperococcus orientalis, J. Ag.

Ferguson!

Geogr. distr. Indian Ocean.

RALFSIACEÆ.

Ralfsia ceylanica, Harv.

Harvey! No. 59. This Alga was not distributed with Harvey's numbered set; but the British Museum possesses a specimen which had been sent to Prof. Dickie from the Trinity College herbarium. Ferguson!

III. CHLOROPHYCEÆ.

SIPHONACEÆ.

Caulerpa asplenioides, Grev.

Harvey! No. 65. [Published in Harvey's list; no specimen in Herb. Mus. Brit.]

Geogr. distr. St. Thomas, Jamaica (*Chitty*!), Australia.

Caulerpa clavifera, Ag.

Harvey! No. 62. Ferguson!

Geogr. distr. Throughout tropical and subtropical seas.

Caulerpa fissidentoides, Grev.

Ferguson!

Geogr. distr. Indian Ocean.

Caulerpa imbricata.

Kjellman! Sub *Chauvinia*, Wittr. et Nordst. Alg. Exsicc. No. 346.

The above form is not to be confused with *Chauvinia imbricata*, Harv. Phycol. Austr., an Alga allied to *Delesseria*. *Chauvinia* of Harvey was established since "the genus *Chauvinia*, Bory, founded on a part of the older genus *Caulerpa*, has not been generally adopted by botanists." Kützinger, who maintained the *Chauvinia* of Bory, quotes *Chauvinia imbricata*, Harv., as *Delesseria rigida*, Harv. (Harv. Alg. Exsicc. Austr. No. 276). Dr. Kjellman, following Kützinger in maintaining Bory's *Chauvinia*, has since published, as above, *C. imbricata*, Kjellm.

Caulerpa laxa, Grev.

Harvey! No. 64.

Geogr. distr. Indian Ocean.

Caulerpa macrophysa, Sond.

Ferguson!

Geogr. distr. Atlantic, coast of Central America.

Caulerpa mexicana, Sond.

Ferguson!

Geogr. distr. Mexico, West Indies, Bermuda, Florida, St. Vincent, Cape Verds.

Caulerpa plumaris, Ag.

Harvey! No. 61. Ferguson! Kjellman! Wittr. et Nordst. Alg. Exsicc. No. 344.

Geogr. distr. Indian Ocean, Red Sea, Pacific, Australia, Venezuela, West Indies, Florida.

Caulerpa scalpelliformis, Ag.

Ferguson!

Geogr. distr. Kurrachee (*Murray*!), Bombay (*Hobson*!), Mauritius, Australia, Brazil, Angola.

Caulerpa sedoides, Ag.

Ferguson!

Geogr. distr. Kurrachee (*Murray*!), Australia, Pacific, West Indies.

Caulerpa taxifolia, Ag.

Ferguson!

Geogr. distr. Throughout tropical seas.

Stephanocælium verticillatum, Kütz.

Ferguson! Kjellman! Wittr. et Nordst. Alg. Exsicc. No. 347.

Geogr. distr. Torres Straits, Central America.

Halimeda gracilis, Harv.

Harvey ! No. 72.

Halimeda macroloba, Dne.

Ferguson !

Geogr. distr. Red Sea, Indian Ocean, Pacific, Australia.

Halimeda opuntia, Lam.

Harvey ! No. 71. Ferguson !

Geogr. distr. Throughout tropical seas.

Halimeda triloba, Dne.

Ferguson !

Geogr. distr. Red Sea, Indian Ocean, South Pacific, West Indies.

Halimeda tuna, Lam.

Ferguson ! Harvey ! No. 70. [Harvey did not distribute this species, and there is no Ceylon specimen of his collecting in Herb. Mus. Brit.]

Geogr. distr. Mediterranean, Florida, West Indies, Brazil, St. Vincent, Cape Verds.

Udotea flabellata, Lam.

Ferguson !

Geogr. distr. Torres Straits, Friendly Islands, Bermuda, West Indies.

Codium adhærens, Ag.

Harvey ! No. 69.

Geogr. distr. Red Sea, Mauritius, Friendly Islands, Mediterranean, British Channel, Bermuda, West Indies.

Codium tomentosum, J. Ag.

Harvey ! No. 68. Ferguson !

Geogr. distr. Throughout all warm and temperate seas.

Bryopsis hypnoides, Lam.

Ferguson !

Geogr. distr. British Channel.

Bryopsis pachynema, G. v. Mart.

Kjellman ! Wittr. et Nordst. Alg. Exsicc. No. 349.

Geogr. distr. Sumatra.

Bryopsis plumosa, Ag.

Harvey ! No. 66, and *B. plumosa*, Ag. var., No. 67. Ferguson !

Geogr. distr. Throughout all warm and temperate seas.

Bryopsis thuyoides, Kütz.

Kjellman! Wittr. et Nordst. Alg. Exsicc. No. 348.

Geogr. distr. Mediterranean, Guadeloupe.

VALONIACEÆ.

Valonia confervoides, Harv.

Harvey! No. 73. Ferguson!

Geogr. distr. Friendly Islands.*Valonia fastigiata*, Harv.

Harvey! No. 74.

Geogr. distr. Mauritius, Pacific.*Valonia Forbesii*, Harv.

Harvey! No. 75.

Geogr. distr. Friendly Islands.*Valonia utricularis*, Ag.

Ferguson!

Geogr. distr. Mediterranean, Atlantic (coast of Spain and Madeira), Friendly Islands.*Ascothamnion intricatum*, Kütz.

Hb. S. O. Gray! No collector's name.

Geogr. distr. Friendly Islands, Mediterranean, Guadeloupe (West Indies).*Microdictyon Agardhianum*, Dne.

Ferguson!

Geogr. distr. Indian Ocean, Pacific.*Anadyomene flabellata*, Lam.

Ferguson!

Geogr. distr. Mediterranean, Bermuda, West Indies.*Dictyosphaeria favulosa*, Dne.

Harvey! No. 77. Ferguson!

Geogr. distr. Red Sea, Indian Ocean, Pacific West Indies.

ULVACEÆ.

Enteromorpha compressa, L.

Ferguson!

Geogr. distr. Throughout all oceans.*Enteromorpha complanata*, Kütz.

Ferguson!

Geogr. distr. European coasts, Indian, Pacific, and Antarctic oceans.

Enteromorpha africana, Kütz.

Ferguson!

Geogr. distr. Cape of Good Hope.

Ulva fasciata, Delile.

Harvey! No. 100. Ferguson! Kjellman! Wittr. et Nordst. Alg. Esicc. No. 432.

Geogr. distr. Indian Ocean (Kurrachee, *Murray*!), Bombay, *Hobson*!), Mediterranean, tropical Atlantic, and Pacific (Chili).

Ulva fenestrata, Post. et Rupr.

Ferguson!

Geogr. distr. Kamtschatka.

Ulva latissima, L.

Ferguson!

Geogr. distr. Throughout all oceans.

Ulva reticulata, Forsk.

Harvey! No. 83.

Geogr. distr. Indian Ocean (Kurrachee, *Murray*!), Philip-pines.

BATRACHOSPERMEÆ.

Batrachospermum moniliforme, Roth.

Ferguson!

Geogr. distr. Europe, North and South America, Cape of Good Hope, New Zealand, Falkland Islands.

Batrachospermum Thwaitesii, Dickie, n. sp.

“Main branches numerous, flagelliform, pinnated below, with numerous, alternate, flagelliform, simple ramuli; apices of rami naked. Whorls of ramelli crowded at base of rami, more distant toward the upper part, interstices with numerous moniliform simple ramelli.”—*Dickie, MS.*

Thwaites! Herb. Per. C. Province, No. 17, Feb. 1870.

CONFERVACEÆ.

Cladophora anastomosans, Harv.

Ferguson!

Geogr. distr. Australia, Tongatabu.

Cladophora heteropsis, Kütz.

Ferguson!

Geogr. distr. Algeria, south of France.

Cladophora mauritiana, Kütz.

Ferguson !

Geogr. distr. Mauritius.

Cladophora valonioides, Sond.

Ferguson !

Geogr. distr. Australia.

Cladophora Thwaitesii, Harv.

Harvey ! No. 78.

Cladophora prolifera, Kütz.

Ferguson !

Geogr. distr. Mediterranean, Madeira, Barbadoes.

Rhizoclonium fontinale, Kütz.

Ferguson !

Geogr. distr. Europe.

Chætomorpha ærea, Dillw.

Ferguson !

Geogr. distr. Throughout all warm and temperate oceans.

Chætomorpha antennina, Kütz.

Kjellman ! Wittr. et Nordst. Alg. Exsicc. No. 318.

Geogr. distr. Indian, Pacific, and Atlantic oceans.

Chætomorpha clavata, Kütz.

Harvey ! No. 79. Ferguson !

Geogr. distr. Indian Ocean, Cape of Good Hope, West Indies.

Chætomorpha implexa, Kütz.

Ferguson !

Geogr. distr. Atlantic (English Channel), Mediterranean, Cuba.

Chætomorpha indica, Kütz.

Ferguson !

Geogr. distr. Indian Ocean, Persian Gulf.

Chætomorpha obscura, Kjellm.

Kjellman ! Wittr. et Nordst. Alg. Exsicc. No. 320.

Chætomorpha media, Kütz.

Harvey ! No. 98 (sub *Conferva media*, Ag.).

Geogr. distr. Indian Ocean.

Conferva affinis, Kütz.

Ferguson !

Geogr. distr. Europe, Anamallay, Neilgherries (*Falconer*!).

Conferva lucens, Harv.

Harvey ! No. 97. Ferguson !

Conferva utriculosa, Kütz. ; *β. ceylanica*, Wille.

Kjellman ! Wittr. et Nordst. Alg. Exsicc. No. 430.

Edogonium gracile, Kütz.

Ferguson !

Geogr. distr. Europe.

Edogonium ochroleucum, Kütz.

Ferguson !

Geogr. distr. Europe.

ZYGNEMACEÆ.

Spirogyra Braunii, Kütz.

Ferguson !

Geogr. distr. Germany.

Spirogyra decimina, Müller.

Ferguson !

Geogr. distr. Europe, Asia, and America.

Spirogyra laxa, Kütz.

Ferguson !

Geogr. distr. Germany.

Spirogyra majuscula, Kütz.

Ferguson !

Geogr. distr. Europe.

Spirogyra tropica, Kütz.

Ferguson !

Geogr. distr. West Indies, Amazon.

Sirogonium ceylanicum, Wittr.

Kjellman ! Wittr. et Nordst. Alg. Exsicc. No. 358.

IV. SCHIZOPHYCEÆ.

Scytonema tomentosum, Kütz.

Ferguson !

Geogr. distr. Europe.

Scytonema penicillatum, Ag.

Ferguson!

Geogr. distr. Blekingia.

Lyngbya majuscula, Hook.

Harvey! No. 84.

Geogr. distr. Mauritius, Socotra (*Balfour*!), Europe, North America, Bermuda, Martinique.

Trichodesmium erythræum, Ehrenb.

Ferguson!

Geogr. distr. Red Sea, Indian Ocean, Chinese Sea.

Hyphæothrix confervæ, Kütz.

Ferguson!

Geogr. distr. Germany.

Cylindrospermum macrospermum, Kütz.

Ferguson!

Geogr. distr. Throughout Europe.

IV.—*Contribution to the Knowledge of the Land-Planarie.*

By Dr. D. BERGENDAL*.

IN the orchid-house of the Botanic Garden in Berlin some *Bipalìa* were observed last autumn. These have since greatly multiplied there, and I have made a careful investigation of them in the Berlin Zoological Institute. In 1878 Moseley described † *Bipalium kewense* from the hothouses of Kew Gardens. The form here observed seems to be identical with this, although the ground-colour of the back is usually more of an olive-green and the streaks are almost quite black. The head is comparatively small, with a dark crescent upon the upper surface. The mouth is situated further forward than in most other *Bipalìa*, at the anterior end of the second third of the body. The animals found are all without any developed sexual organs. Only in one animal have I been able to interpret some small aggregations of cells in the sections as the rudiments of testes. Of the oviducts and *vasa deferentia* I have never observed any traces. In other *Bi-*

* Translated from the 'Zoologischer Anzeiger,' No. 249, April 18, 1887, pp. 218-224.

† Ann. & Mag. Nat. Hist. ser. 5, vol. i. p. 238.