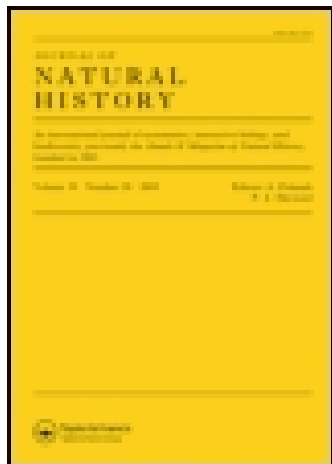


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Annals and Magazine of Natural History: Series 2

Publication details, including instructions for
authors and subscription information:

<http://www.tandfonline.com/loi/tnah08>

XXX.—Algæ orientales:—Descriptions of new species belonging to the genus *Sargassum*

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Published online: 16 Dec 2009.

To cite this article: R.K. Greville LL.D. (1848) XXX.—Algæ
orientales:—Descriptions of new species belonging to the genus *Sargassum*,
Annals and Magazine of Natural History: Series 2, 2:10, 274-277, DOI:
[10.1080/03745485809494707](http://dx.doi.org/10.1080/03745485809494707)

To link to this article: <http://dx.doi.org/10.1080/03745485809494707>

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joints with which it is provided, render it extremely probable that the trumpet-shaped processes are the dilated footstalks upon which the cells themselves are ultimately to be developed.

The position of the several joints is not always exactly the same; one however is usually found at the commencement of the long footstalk, another near its termination and at the base of the trumpet-shaped process, a third between the cell and this process, and a fourth midway on the cell itself, which sometimes exhibits a constriction in the situation of the joint or line of division.

Occasionally also the spines, which would appear to be themselves trumpet-shaped processes in progress of development, are jointed.

The several branches forming the skeleton of the polypidom generally spring from the important trumpet-shaped processes, but occasionally also from the back of the polype-cells themselves.

This zoophyte is best examined with object-glasses of 1 and $\frac{1}{2}$ an inch foci, and will well repay a careful examination.

22 Old Square, Lincoln's Inn, July 19th, 1848.

XXX.—*Algæ Orientales*:—*Descriptions of new Species belonging to the genus Sargassum*. By R. K. GREVILLE, LL.D. &c.*

[Continued from p. 206.]

[With a Plate.]

MANY of the species which I now propose to describe from time to time were communicated to me some years ago by my excellent friend Dr. Robert Wight, Surgeon on the Madras Establishment; a gentleman well-known by his valuable 'Illustrations of Indian Botany,' and for his untiring investigations into the vegetable productions of our Indian possessions. These *Algæ* were to have been published in the 'Prodromus Floræ Peninsulæ Indiæ Orientalis,' a work undertaken by him in conjunction with Dr. Walker-Arnott, and calculated to add largely to the well-founded reputation of both parties. The second volume, however, having been unfortunately suspended, I have been induced in the mean time to give them to the botanical world in the present form, through the medium of the Botanical Society.

WIGHTIANÆ.

4. *Sargassum echinocarpum* (nob.); caule cylindraceo, ramosissimo; foliis oblongo-lanceolatis, dentatis, uninerviis; vesiculis plus minusve ovalibus, petiolatis, petiolis latioribus, foliaceis; recep-

* Read before the Botanical Society of Edinburgh.

taculis axillaribus, racemosis, planis, lineari-cuneatis, acute et grosse denticulatis.

Wight in herb. no. 18.

Hab. in mari Indico, ubi detexit Wight.

Root unknown. *Plant* of a bushy habit, about two feet long. *Stem* cylindraceous, about as thick as a crow-quill, giving off branches 6–8 inches long at intervals of less than an inch apart; these branches are clothed with a second series 1–2 inches in length, on which the short fruit-bearing ramuli are thickly set. *Leaves* cartilaginous, fully an inch long, shortly petiolate, oblong-lanceolate, very irregularly repando-dentate, obtuse, the nerve extending almost to the apex, punctate, the pore visible to the naked eye. *Vesicles* between oval and spherical, about the size of hemp-seed, very numerous, intermixed with the receptacles, on broad foliaceous stalks, often winged and apiculate, frequently developed in the leaves themselves. *Receptacles* axillary, varying in length from little more than 1, to 2 or even 3 lines, racemose, more or less linear, flat, so largely and sharply toothed as to be sometimes almost pinnatifid. *Colour* a rich dark reddish brown. *Substance* cartilaginous.

In habit this species is allied to *S. vulgare*, but differs entirely in the fructification and other leading characters. The sportive disposition of the vesicle is very remarkable, showing every transition from the leaf to that organ. On one occasion I observed two vesicles imbedded in the same leaf, as represented at fig. 3. The leaves occasionally assume a broadly linear character, and if I am correct in referring one imperfect specimen in my possession to this species, they become sometimes more elongated and at the same time less toothed.

CAMPBELLIANÆ.

5. *Sargassum Campbellianum* (nob.); caule filiformi; foliis membranaceis, linearibus, dentato-serratis, obtusis, uninerviis; vesiculis paucis, sphaericis, breviter petiolatis; receptaculis racemosis, elliptico-cylindraceis ad apicem denticulatis.

Hab. in mari Indico. Specimina communicavit J. Campbell.

Root unknown. Entire plant probably three feet long or more, of a very slender and graceful habit. *Stem* filiform, cylindrical, elongated, in my imperfect specimens nearly two feet in length, producing horizontal branches at remote intervals 6–9 inches long or more, which bear numerous ramuli 1–3 inches long; these ramuli are clothed with leaves and receptacles at intervals of often not more than the eighth of an inch. *Leaves* petiolate (those on the primary branches $1\frac{1}{2}$ inch, those on the ramuli less than an inch long), linear or nearly linear-lanceolate, irregularly dentato-serrate, either acute or quite obtuse at the apex,

thin, membranaceous and translucent, the nerve slender, disappearing beneath the apex; pores not visible to the naked eye, scattered over a space nearer to the nerve than to the margin, which latter is destitute of them. Petioles short, with often a single sharp tooth at the base of the leaf. *Vesicles* solitary, subspherical, on short compressed stalks, generally situated at the base of the ramuli, but not unfrequently produced on the racemes also, scarcely so large as hemp-seed. *Receptacles* axillary, linear-oblong or fusiform, either undivided or forming lax racemes 2-3 lines long or more. They are generally entire at the lower part, but sharply toothed towards the apex. *Colour* a dull, very pale olivaceous green. *Substance* extremely thin, delicate and membranaceous.

This is a very interesting species, not contained in Dr. Wight's collections, but kindly communicated to me at his special request by its discoverer, James Campbell, Esq. of Madras. It is conspicuous by its very slender and delicate habit and pale olivaceous yellow colour. The receptacles are sometimes solitary, sometimes once-divided, but more generally form little clusters or racemes, the parts of which are much disposed to pass into foliaceous expansions. I have indeed seen receptacles on one raceme passing in a proliferous manner into both vesicles and minute leaves.

VACHELLIANÆ.

6. *Sargassum debile* (nob.); caule elongato, subcompresso, ramis laxis, longissimis, simpliciusculis; foliis membranaceis, lineari-oblongis, obtusis, dentatis, uninerviis; vesiculis sphaericis axillaribus. *Hab.* in mari Chinensi prope Macao; Vachell.

Root unknown. Specimen in my possession 34 inches long, and the character of the lower leaves indicates that they grew near the base; so that the whole plant may be from 3 to 4 feet long. Habit extremely slender and weak. *Stem* somewhat compressed, scarcely thicker than a sparrow's quill, giving off at irregular intervals, for some inches above the base, a few filiform branches 2-3 feet long, of nearly the same thickness throughout, sometimes more or less subdivided, but frequently simple, and along their whole length bearing leaves and vesicles at intervals of from half to three-quarters of an inch. *Leaves* thin, membranaceous, translucent, linear-oblong, obtuse, waved at the margin, sparingly and irregularly toothed, attenuated below into the stipes, the nerve conspicuous, very slender, disappearing below the apex; pores minute, but visible to the naked eye. *Vesicles* axillary, stalked, spherical, rather larger than the seeds of *Lathyrus odoratus*, the stalks scarcely a line long, filiform. *Substance* membranaceous and somewhat flaccid. *Colour* pale yellow-olivaceous green.

The only specimen which I have seen is not in fructification, but is otherwise in a very perfect and satisfactory state. In general appearance, especially when placed in water, it might be compared to some kinds of *Potamogeton*, and probably vegetates in quiet and shallow bays. The vesicles, as may be seen in the plate, form an axillary raceme, and no doubt indicate the position of the fructification, which, in more advanced individuals, would be probably found towards the extremity of the branches. In my specimen I observe no trace of it, although the vesicles are present on every part.

EXPLANATION OF PLATE V.

Sargassum echinocarpum.

- Fig. 1. Portion of a branch.
 — 2. Leaf with a vesicle at its apex.
 — 3. Leaves producing vesicles.
 — 4. Vesicle with foliaceous expansion of the stalk.
 — 5. Vesicle in its simplest form.
 — 6. Receptacles, with a leaf passing into a vesicle.
 — 7. Portion of a raceme. 5—7 magnified.

Sargassum Campbellianum.

- Fig. 1. One of the smaller branches.
 — 2. A leaf with raceme of fructification.
 — 3. Vesicle.
 — 4. Receptacles passing into leaves and vesicles. 2—4 magnified.

Sargassum debile.

- Fig. 1. Portion of a branch.
 — 2. Leaf and vesicles; the last magnified.

XXXI.—*Reply to Sir Philip Egerton's Letter on the Placodermi.*
 By FREDERICK M'COY, M.G.S. & N.H.S.D. &c,

To the Editors of the Annals of Natural History.

GENTLEMEN,

I REGRET to have to trouble you with a few lines in reply to the above article in your last Number. The opinion I entertained of the value of your space and the reader's time induced me to condense the gradually acquired experience of years into a very brief paragraph, proposing the family *Placodermi* for certain Ganoid fish, in my paper in the 'Annals' of July last. This brevity has I fear caused me to have been misunderstood by Sir P. Egerton, who has reprinted the paragraph in his letter, adding, that "Not having seen the specimens which have induced Mr. M'Coy to propose this new classification, I am unable to form any opinion as to whether he is justified or not in making the change." I



Sargassum echinocarpum.



S. Campbellianum.

S. debile.