

with the wishes of the same friends, and make them available to the public generally.

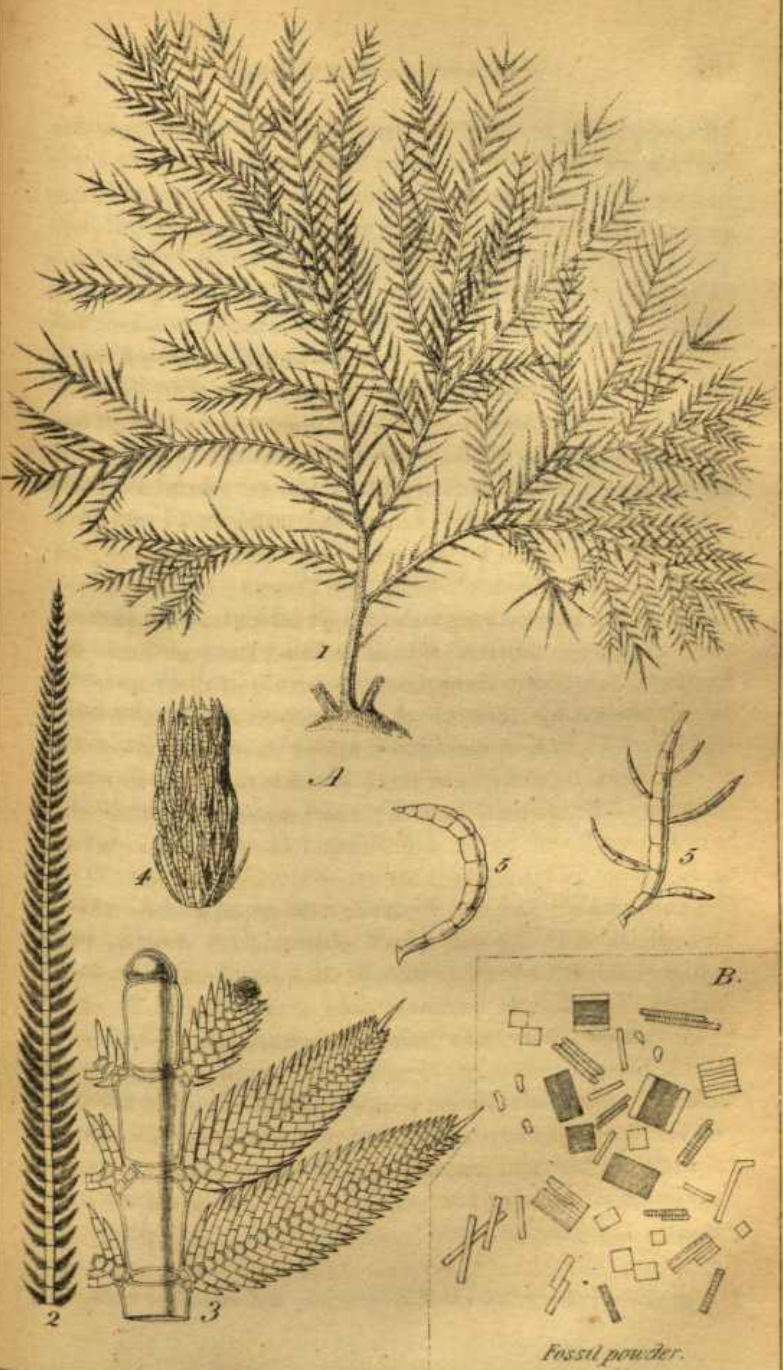
X.—*Description of BALLIA, a new Genus of Algæ. By the*  
HON. W. H. HARVEY.

[TAB. IX.]

THE interesting and singularly beautiful plant, which forms the subject of the present notice, was discovered in the year 1803, by Robert Brown, Esq., who informs me (through our mutual friend, Mr N. B. Ward,) that he first found it on the shores of the larger island of Kent's group in Bass's Straits, where it was growing, attached to the rocks, near low water mark; and that he afterwards saw it cast ashore at Port Dalrymple, Van Dieman's Land. Mr Brown has also received it from Mr Webster, Surgeon of the Chanticleer, who collected a considerable number of *Algæ* at Staten Land and Terra del Fuego, where also it is supposed he procured this plant. If Mr Brown's conjecture that Agardh's *Sphacelaria callitricha*, *Alg. Europ. t. VI.* is merely a battered and faded specimen of our plant, be correct, as there is much reason to suppose, we have still another habitat; that supposed *Sphacelaria* having been found by M. Gaudichaud (a naturalist attached to Freycinet,) in the sea near the Falkland Islands. The specimens from which our figure and description were taken, were gathered by the late Mrs Smith at Port Arthur, Van Dieman's Land, and by Mr Ronald Gunn at Circular Head in the same island, and communicated to Sir W. J. Hooker by the latter in 1838, together with an interesting collection\* of the marine plants of Van Dieman's Land, which will form the subject of a future paper.

Thus it appears that our plant has a very wide geographical range in the Southern Ocean, extending at least over 12 degrees of latitude, and 145 of longitude; but when we take

\* Among the new species of this collection, is a very distinct and beautiful *Champia* (*C. Tasmanica*), a member of a genus hitherto supposed to be peculiar to the Cape of Good Hope.



*Callia Brunnea.*

into account the very slight attention hitherto paid by travellers to the Cryptogamia, but especially the Algæ, we may expect that when these tribes come to be more carefully looked after, future observers will detect it, wherever there is land, at a latitude of from  $40^{\circ}$  to  $50^{\circ}$  south; and we may, I trust, confidently look to receive it from the Southern Island of New Zealand, if not from South Shetland itself, on the return of the Antarctic expedition of Capt. Ross.

The following are its generic and specific characters. The generic name is bestowed in honour of MISS ANNE E. BALL\* of Youghal, a most successful and zealous algologist, who has added numerous new species to the Irish Flora, among which is the rare *Sporochmus Cabrerae*.

BALLIA. Harv.

*Frons* rosea, lucida, rigida, diorgana; *caulis* cylindricus, cartilagineus, inarticulatus, fibrillis vestitus: ramuli cornei, articulati, distichi, pluries pinnati, pinnis oppositis. *Fructus*: massa subglobosa, fusco-rubra, in apicibus sphacelatis ramulorum majorum et minorum immersa.—Genus *Callithamnio* colore, *Sphacelariæ* substantia, fructu, habituque affine.

1. *Ballia Brunonia*, Harv. (TAB. IX.)—*Sphacelaria callitricha?* *Agardh Ic. Alg. Eur. t. VI.*

HAB. Ad rupes in mari Australi. Apud "Kent Islands" et ad portum "Dalrymple, V. D. Land," *Dns. R. Brown*. Apud "Staten-Land," *D. Webster*. Prope Insulas "Falkland," *D. Gaudichaud*. Ad portum "Arthur," V. D. L., *Dna. Smith*. Ad caput "Circular" dictum, *D. Gunn*.

*Radix* conica, unciam lata, e fibris constituta. *Caules* plurimi, 6-12 uncias longi, basi linea diametro apicem versus ad setam porcinam attenuati, teretes, inarticulati, fibrillis minutissimis, simplicibus, falcatis, vel ramosis, subpinnatis densissime vestiti, ramosissimi. *Rami* subdistichi, alterni

\* Sister to Robert Ball, Esq. of Dublin, the distinguished zoologist.

vel subdichotomi, flexuosi, axillis acutis vel obtusis, erecti; *superiores* plus minusve divisi, sæpe in flabellam expansi, vel ramulos fasciculatos ex apicibus ferentes: *rami omnes* ramulis articulatis, distichis (vel raro tristichis), pluries pinnatis, creberrime obsessi. *Ramuli* (in circumscriptione) lineari-lanceolati, bi-tripinnati, pinnis pinnulisque oppositis, creberrimis; *ramuli-ultimati-pinnati* (vel *plumulæ*) quam rachide e quo oriunt multoties tenuiores, pinnulis creberrimis, contiguis, subulatis, acutis. *Pinnæ* et *pinnulæ* nunc tristichæ. *Articuli* pinnarum sesqui-longiores; pinnularum diametrum æquantes; superiores breviores: articulus singulus apice concavus, basi convexus, superior in inferiorem insertus, e cellula unica formatus, sacculam *endochromæ* includens. *Fructus*: *massa* subglobosa vel oblonga, fusco-rubra, in apicibus sphacelatis rachidium ramulorum majorum et minorum immersa; apex fructifera nunc elongata, nunc contracta. *Color* purpureo-roseus, pellucidus; marcescente in viridem, tandemque in albo-luteum mutatus. *Substantia* caulium cartilaginea; ramulorum tenuis, corneo-membranacea, rigida, hyalina.

It will be at once perceived, that our plant has many points in common with *Sphacelaria*, from which genus however, I venture to pronounce it, according to the present views of systematic algologists, to be abundantly distinct, and in this opinion my friends Dr Greville and Mrs Griffiths concur. Unimportant as colour confessedly is in most classes of plants, it has been found to be a very correct indicator of affinity among the Algæ, and so constant that it has been made the *basis* of arrangement in the systems of Lamouroux, Agardh, and their followers. *Sphacelaria* is a genus of the *olivaceous* series; *Ballia* belongs to the *florideous*, in which it may stand as the analogical representative of the former. But it is not merely in colour that the latter differs; the *substance* of the frond, and the *structure* of the joints, present very striking distinctive characters; and the opposite ramuli are very unusual in *Sphacelaria*. The *substance* of the lesser branches is of that peculiar, horny-membranous, hyaline nature, which distinguishes some tribes of zoophytes, and is found among the

Algæ in the *Siphonææ*; that of *Sphacelaria*, though rigid, is more of the nature of the cellular tissue of other Algæ. But the *structure* of the joints presents a still more striking character; each joint is concave at its superior end, convex at its inferior, having thus a somewhat cordate figure, the convex end being inserted into the joint immediately below it, while the concave receives in like manner the one above. These joints consist of a single cellule, and contain a bag of colouring matter which is collapsed in a dried state. The ramuli do not appear to spring from these, but from accessory cellules placed at the upper end of the main cellule of the joint, and connecting it with the joint next above it.

Mr Brown suggests, that Agardh's *Sphacelaria callitricha* may be only our plant in a faded state—an opinion that I think highly probable, as the *Ballia* assumes in decay a pale green colour. The magnified portion offers some slight discrepancies, chiefly that the ramuli are less close. The joints appear to be of the same peculiar construction. In winter, the *Ballia* is frequently found entirely destitute of the jointed and pinnated ramuli, or merely clothed with their remains, and Mr Brown supposes that this annual shedding of its lesser branches may be connected with the propagation of the plant. Perhaps, the sporular mass which generally terminates the rachides of the pinnated-ramuli or *plumules*, may be retained till these are thrown off. Many other Algæ, it is well known, are deciduous in a similar manner.

TAB. IX.—*Ballia Brunonia*. *Fig.* 1. Plant, *nat. size*; *f.* 2, 3. portions of branches; *f.* 4. portions of the main stem; *f.* 5. jointed hairs or fibres with which the main stem is clothed:—more or less *magnified*.