CONTRIBUTIONS TO THE PHYTOGRAPHY OF TASMANIA.

By Baron Ferd. von Mueller, C.M.G., M.D., F.R.S., &c. &c.

(November, 1877).

A few years ago I had the honour of submitting to the Royal Society of Tasmania a census of the flowering plants and ferns, then known, from the main island and its dependencies. The issue of this index in the Society's volume of 1874 has rendered it accessible to collectors of Tasmanian plants; and as some there have arranged their botanic specimens according to the census list, I may feel justified in adding now a few more plants to the previous enumeration, and may also be allowed to effect a few changes in the names and arrangement first adopted, furnishing simultaneously a few other notes supplemental to my former communications.

Claytonia calyptrata.—Swanport, Dr. Story.

Drosera spatulata.—Southport, C. A.; Arthur's Riv., F.v.M.

Polycnemum pentandrum.—

The Hemichroa pentandra with its congeners can be placed in Polycnemum (L. gen. edit. sec. 21) as indicated first by Moquin.

Cenarrhenes nitida.—Mount Bishop, Bell.

Bellis graminea.—

It was suggested long ago in the frag. phytogr. Austr., that all the Brachycomes ought to be rendered again to Bellis.

Helichrysum Gravesii.—

The Rev. W. W. Spicer has recently ascertained that this Helichrysum has its native localities in Kent's group. From the zealous investigation of Tasmanian plants by the reverend gentleman, many additions to the localities, recorded for various species may be expected.

Helichrysum lucidum.—

This includes, as an Alpine variety H. Milligani.

Plantago varia.—

This and its ordinal plants find best their place near Primulaceæ and particularly Loganiaceæ as shown by the writer in Trimen's Journal for 1877. In the same periodical he has given some of the reasons for the transfer of the Plumbagineæ to the vicinity of Frankeniaceæ and Caryophylleæ in the class of Amylifiræ. It may here be added incidentally that the discoveries of late years render the ordinal separation of Araliaceæ from Umbelliferæ not longer possible.

Najeia alpina.—F.v.M., Introduct. to Bot. Teachings, p. 38.
Gaertner's name Nageia should be restored for Podocarpus, as pointed out in my Papuan plants, p. 93.

Milligania stylosa.—F.v.M. in Benth. flor. Austr. VII. 27.
The venerable Bentham has adopted the suggestion made in the Society's issue of 1876, p. 11, that Astelia stylosa should be drawn to Milligania.

Milligania Johnstoni.—F.v.M. l. c.
The dwarf hyacinth-scented asteli-aceous plant has been raised to specific position.

Bartlingia sessiliflora.—
Mr. Bentham has proved from inspection of authentic specimens that the real Laxmannia minor, so very briefly defined by R. Brown, is a species peculiar to West Australia, and that the Tasmanian plant is identical with L. sessiliflora (Decaisne herb, Timor, descript, 35 t. 16.)

Wurmbsea dioica.—
Anguillaria australis, our lovely little harbinger of the spring, is transferable to the genus Wurmbsea, established by Thunberg as early as 1781, which was mentioned already in the fragm. phytogr. Austr. VII. 76. As the distinction is of frequent though not universal occurrence in this species, and is exceptional among allied plants, it may be preferable to return to that specific appellations by which the plant is best known.

Arthropodium minus.—
Bentham recognises this as a species. It needs still further enquiry to point out reliable differences between this and A. paniculatum. On those meadows where A. minus grows, usually also Brachycome graminea becomes dwarfed.

Chlorophytum alpinum.—
J. G. Baker (journal of the Linn. Soc. XV. 329) has removed Caesia alpina to Chlorophytum of Ker, thus adding a new genus to the Tasmanian flora.

Triglochin centrocarpa.—Hook. icon. pl. 728.
To this T. nana is reduced by Bentham as a variety; but the normal form does not occur in Tasmania.

Typha angustifolia.—L. sp. pl. 971.
Bentham (flor. Austr. VII. 159) is not inclined to admit the validity of the two Tasmanian species, advanced by the late Dr. Rohrbach.

Juncus pauciflorus.—R. Br. prodc. 259.
As well as T. pallidus, R. Br. l. c. and J. capillaceus, J. Hook. fl. Tasm. II. 65, are passed as species by Bentham (fl. Austral. VII. 129, 130, 132). The special study of these plants is recommendable to local observers.

Lepyrodia Muelleri.—Benth. fl. Austral. VII. 216.

It is ascertained now, that R. Brown's Lepyrodia stricta is exclusively West Australian, as the inspection of the original specimens has confirmed.

Calorophus fastigiatus.—

Bentham (l. c. 237-240) proposes the union of the genera Hypolaena and Calostrophus, giving preference to the name of the former. In justice, however, to Labillardiere, who even illustrated Calostrophus with a good figure four years before the publication of Hypolaena, the name given by him should embrace the united genera, the Greek Calostrophus being also significant towards Restio.

Centrolepis strigosa.—R. and S. syst., I. 43.

Includes Desvauxia tenuior of R. Brown, and seems distinct from C. fascicularis.

Centrolepis monogyna.—Benth. flor. Austral., VII. 205.

This, the Alepyrum monogynum, J. Hook, fl. Tasm. II. 77, t. 138, is also admitted as a species by Bentham.

Heleocharis acuta.—R. Br., pr. 224.

Bentham refers to this as distinct from H. palustris, not admitting the latter as Tasmanian or even Australian. Baeckehr (in Linnæa, XXXVI. 460) records distinctly also as Australian, indeed almost as cosmopolitan, the H. palustris.

Isolepis crassiuscula.—J. Hook, fl. Tasm. II. 86, t. 143; Scirpus crassiusculus, J. Hook, in Benth. flor. Austral. VII. 326.

All workers on Cyperaceae concur that the genus Isolepis is as artificially separated from Scirpus as Chaetospora from Schœnus, and I gave expression to the same effect in the Fragm. phytogr. Austr. IX. 38. It remains therefore quite optional whether Isolepis and Chaetospora should be adopted as full genera or merely as subgenera, although on the presence or absence of hypogynous bristlets, as a rule, is laid much stress in defining the numerous other cyperaceous genera; as a sequence it almost becomes imperative to attach within the same natural order on equal importance to the generic value of an organ such as the hypogynous setae. There seems thus no reason to change the nomenclature adopted for the Tasmanian census.

Cladium trifidum.—Gahnia trifida, Labill. Non. Hall. plant, specimen. I. 89, t. 116.

This plant proves that the disjunction of Gahnia from Cladium is not advantageous, for so similar is this species to C. filum, that most observers failed to recognise any specific (much less generic) differences between them. Both species stand on record from the Derwent and

Swanport. Cladium melanocarpum, accepted on the authority of R. Brown's Prodromus as a Tasmanian plant, seems not to occur in the island.

Cladium tetraquetrum.—J. Hook, fl. Tasm., II. 95, t. 149.

To this is referable Lepidosperma tetragonum.

Lepidosperma concavum.—R. Br., pr. 234.

This described with extreme briefness by Rob. Brown, includes L. Sieberi.

Lepidosperma laterale.—R. Br., pr. 234, and L. Oldfieldii, J. Hook, fl. Tasm. II. 91. t. 146 A, are both admitted by Bentham (flor. Austral. VII. 389 et 393) unless the former should prove referable to L. globosum (Labill. I. 16 t. 14).

Carex acicularis.—Booth, in J. Hook, flor. Nov. Zealand, I. 280, t. 63,

Bentham regards this distinct from C. Pyrenaica of the Northern Hemisphere.

Carex paniculata.—L. sp. pl. edit., sec. 1383.

As shown already in my vegetation of the Chatham Islands, p. 57 (1864) C. appressa is merely a form of the European C. paniculata.

Carex flava.—L. sp. pl. 975.

Includes C. cataractæ of R. Brown, the great similarity of both being also noticed in the fragm. (viii. 251.)

Carex Bichenoviana.—Booth, in J. Hook, fl. Tasm., II. 101.

Acknowledged by Bentham (fl. Austr. VII. 446) as a peculiar Tasmanian species only as yet known from Woolnorth.

Ehrharta juncea, Spreng. syst. II, 114

An older appellation for E. tenacissima of Hendel. It may here be observed that the true Stipa micrantha from South East Australia appears not to extend to Tasmania.

Agrostis scabra, Wield. spec plant I. 370

This name was given already in 1797, as shown by General Munro (in Benth. fl. Austral. VII. 576) to an American grass, now found to be identical with R. Brown's A. parviflora.

Hierochloe Fraseri, J. Hook, flor. antarctic I. 93.

According to Bentham's views this is the Tasmanian species recorded as H. alpina, and probably distinct from that of the northern hemisphere.

Hemarthria compressa, R. Br. pr. 207.

The H. uncinata proves, as long suggested by the writer, a mere variety.

Conferva bombycina, Ag. syst. alg. 83.

In water reservoirs near Hobart Town. Rev. W. Spicer. A large variety, allied to C. Sandvicensis of Gaudichaud.

ADDITIONAL NOTES.

Agrostis frigida, F.v.M., first general report, 1853, p. 20.
New Norfolk, Gunn, (according to Benth. flor. Austr. VII. 583.

Agrostis Gunniana
Deyeuxia Gunniana, Benth. l. c. 584. Sent by Mr. Gunn along with A. scabra

Distichlis maritima, Rafinesque in Journ. de Physique, LXXXIX. 104.
It escaped notice until it was pointed by Mr. Bentham that the Festuca distichophylla of Sir Jas. Hooker (and seemingly also of Michaux and Pursch) constitutes a separate genus, established already in 1819, and remarkable for unisexual spikelets on distinct plants (as mentioned before by Asa Gray) and further singular for the spongy testa noticed previously by Kunth. Thus the Tasmanian grass is identical with an American seashore species of great frequency.

Poa Billardieri, Hendel glumae, I. 262.
Restricted to the coast. Regarded by Bentham as distinct from P. caespitosa on account of the inner upper bract adnate to the seed. The celebrated phytographer above mentioned, acknowledges several other glumaceae as specifically distinct, which to me appear mere varieties of species, already enumerated in the census.

[Note.—While the foregoing paper was passing through the press the following note was received from the Author:—]

Among several Tasmanian phanerogamic plants, of which their generic position remained uncertain, is *Pultenaea diffusa* of Sir Joseph Hooker; that leading phytographer gave the first record of this rare plant in his celebrated Flora Tasmanica I, 91, and Mr. Fitch added t. 14, an excellent lithographic illustration. As, however, the fruit remained unknown, the place of this plant in the genus *Pultenaea* continued doubtful. To myself the plant appeared exceptional as a *Pultenaea*, its stipules being mostly suppressed, while the bractiole are almost foliaceous and thus do not share in the scarious consistence of those typical for *Pultenaea*. These reasons induced me to assign to this plant a place in the genus *Phyllota*, one not otherwise represented in the Tasmanian flora. Thus the plant appeared as *Phyllota diffusa* fully 20 years ago in my *Fragmenta Phytographiæ Australiæ* I, p. 8. Mr. Bentham, the most experienced of all writers on leguminous plants since the last forty years, when issuing under my co-operation the second volume of the Flora

Australiensis in 1864, preferred to follow Sir Joseph Hooker's indications of the generic position of the plant, vol. ii., p. 119. Having directed the attention of my kind Tasmanian correspondents to the desirability, to set this question at rest by a search for the fruit, I was glad to receive from Mr. Simson, quite recently, well-matured fruit specimens. These have the pods about 2 lines long, ovate; its valves inside finely downy; the seeds, of which only one matured in each pod, are about one line long, oval, greenish-brown, with black spots and *devoid of any strophiole.* This last mentioned note is decisive for *Phyllota* and excludes our plant from the genus *Pultenaea.* Unless, therefore, *Phyllota* is given altogether up as a genus, it must include now finally; *Pultenaea diffusa*, although certainly the great value of the presence or absence of a strophiole for generic discrimination in *Podalyrieæ* loses its importance exceptionally in *Oxylobium;* but *Phyllota* is irrespectively reported by the structure of its bractioles and to some extent by the want of stipules, which latter characteristic however, is not absolute.

There is another *Pultenæa*, the West Australian *P. urodon* of Bentham, which needs removal to the genus *Phyllota.* I find the pod about 2 lines long, roundish or rhomboid, ovate, inside glabrous, outside as well as the lower portion of the style soft-hairy. The seeds are dark brown, but seen by me only in a half-ripe state, then very much incurved, and exhibiting no trace of a strophiole.

Turozaninow in defining originally the genus *Urodon* (subsequently reduced by Bentham to *Pultenaea,*) alluded only to *Phyllota* as allied and not to any other genus.

ON SOME NEW TASMANIAN MARINE SHELLS.

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[*Read 12th November*, 1877.]

The following shells were placed in my hands for description by Mr. W. Legrand, the eminent conchologist of Hobart. They were obtained by the careful researches of Mr. W. F. Petterd, from dredging operations principally in Blackman's Bay. They are (with the exception of a *Turbo* from King's Island) all small, but of much interest, including a beautiful new species of *Crossea*. Their general facies is in keeping with the conchology of Tasmania as hitherto known.

Turbo ( ) cucullata. *T. turbinato consolida, opaca, sordide albida badia vel atra plus minusve maculata vel ustulata; anfr.* 4½, *rugosis, vix convexis crebre spiraliter liratis, magis et minoribus alternantibus, tota testa conspicue creberrime oblique squamato-striata; liris majoribus in ult. anfr. fere. 12, distanter granosis vel squamis elevatis cucullatis insignitis, sutura impressa, tenuiter canaliculata apertura orbiculari, integra conspicue marginata, infra. marginem, margaritacea argentea, columella et margine porcellana; basi convexa, lirata.* Long. 24, lat. 18 mil. Habit. King's Island, Bass Straits. W. Legrand.

A small turbo with large irregular scorched patches on a dirty white ground. It is spirally closely keeled, with small round alternating keels, on the larger of which there are small tubercles or small raised hooded scales. The whole shell is obliquely closely imbricately striate. The mouth is round without any tubercle, and has an outside margin within which there is a very clearly defined line of silvery nacre which lines the throat. It is very rare, and has more relations with the New Zealand or tropical forms than any Tasmanian congener.

Liotia annulata. *Testa minuta, discoidea, superne planata et depressa, alba, opaca, anf. 3, circularibus, regulariter subdistanter lamellose annulatis, interstitiis lævibus; apertura integra, orbiculari, antice producta varicifera; umbilico omnino aperto.* Maj. diam. 1½ mil. Hab. Blackman's Bay. W. F. Petterd.

Shell minute, discoid, flattened and depressed above, white, opaque; whorls 3, circular, regularly and somewhat distantly ringed with lamellæ, interstices smooth, aperture entire, orbicular, anteriorly produced, and bearing a varix round the mouth like one of the rings of the spire, umbilicus entirely open.

I have been long acquainted with this minute shell, but hesitated to describe it until I could find perfect specimens with a true *Liotia* mouth. I think that even now its generic

position is doubtful, for the aperture has hardly that thickening which we observe generally in the genus. Its appearance is not unlike some species of *Ammonites*.

Crossea cancellata. *n.s. T. minuta, alba, nitente, turbinata; anfr. 3, carinis parvis crebris et striis obliquis tenuissimis pulcherrime cancellata, apice lævi, pellucido, apertura circulari, antice et postice conspicue canaliculata, labio simplice, basi duobus sulcis unolato altero angusto et in medio eorum costa spirali prope columellam insignita.*

A minute white shining turbinated shell of three whorls which are beautifully cancellated by close spiral ribs and distinct oblique striæ. The apex is smooth. The aperture is circular and channelled above and below. Behind the inner lip there is a narrow groove forming a false umbilicus, then a rounded spiral rib, and then a broad regularly striate groove on the base. Diam. scarcely $1\frac{1}{2}$ mil. Blackman's Bay. W. F. Petterd.

This minute and very beautiful species adds a fifth to the genus whose synopsis is as follows:—

Shell, varicose. *C. miranda.* Japan.
——, outer lip, thin. *bellulus.* Japan.
——, small, whorls shining and punctate. *concinna.* Port Jackson.
——, somewhat smaller, outer lip fimbriate. *labiata.* Long Bay, Tasmania.
——, minute, shell cancellate. *cancellata.* Blackman's Bay, Tasmania.

Marginella cypræoides. *T. parva, ovata, cypræformi, alba, opaca lævi, spira omnino occulta, labro nivea marginato incrassato, postice producto; apertura regulariter arcuata, angusta, columella nivea encausta, ad basim crebre 4 plicata.* Long. 6, lat. 4 mil. Blackman's Bay. W. F. Petterd.

Tasmania is already rich in this genus, but this species differs from all in being quite smooth and having the spire quite hidden by the produced and thickened outer lip. From above it appears like a *Cyprea*. It comes nearest to *Marginella volutiformis*, but is much smaller and destitute of plaits.

Rissoa angeli *(mihi) vide Proc.* 1876. I find that this shell varies considerably. Sometimes the ribs a very prominent and variciform, and sometimes they are fine and close and scarcely pass to the last whorl, the spiral liræ, which are beautifully delicate, the rounded aperture and umbilicus are constant features. Some authors would place the species in the genus *Cyclostrema*. It is very minute. Blackman's Bay. W. F. Petterd.

Rissoina minutissima. *T. minuta, pyramidata, polita, luteo albida, apice livida, basi pallidisime lutea fasciata; anfr. 5 omnino lævibus, et politis, tenue convexis; labro acuto, producto, labio reflexo; apertura late elliptica antice et postice canaliculata; apice obtuso.* Long. $1\frac{1}{2}$; lat. $\frac{3}{4}$ mil.

A minute *Rissoina* destitute of ornament of any kind and

highly polished. It is yellowish white, and the apical whorls are livid. Blackman's Bay, Tasmania. W. F. Petterd.

Rissoina unilirata. *T. minuta, pyramidata, alba nitente, opaca vel subpellucida, anfr. 5, in spira conspicue carinatis, ultimo anfr. generatim lævi, aliquando unicarinato, semper autem ad labrum late inflatoque; apice obtuso, nucleo* 1½ *anfr.; apertura circulari, labro producto, labio reflexo, sutura profunda, unilirata et marginata.* Long. 1½; 2½ mil.; lat. ½, *circiter longitud.* Blackman's Bay. W. F. Petterd.

A minute white shell with a conspicuous inflation on the outer lip, and a fine thread which forms a single or double keel on the upper whorls. The last whorl is generally, but not always destitute of these threads, or has only one. The suture has also a thread and is margined. One larger specimen has only one angle in the whorls, which is the result of the one thread-like line proceeding from the last whorl. The shell appears to be variable.

Bittium minimum. *T. minuta, tumide-pyramidata, badia saturata; nitente; anfr. 7, planatis, regulariter crebre costatis, costis granosis et lineis tribus granorum spiraliter cinctis; costis ex serie granorum confectis; sutura acute impressa; apice decollato, apertura late elliptica, canali brevi obliquo, basi striata tantum, labro simplici, columella incrassata tortuoso.* Long. vix. 3 mil.; lat. 1. Blackman's Bay. W. F. Petterd.

This little shell is exactly like *Bittium granarium*, only that it is a full grown shell and is most minute. The upper whorls seem as if they were margined with a very dark brown line. It is very remarkable that *B. granarium* varies very much in size, and though I never saw any so small as the present species, still intermediate sizes may yet be found. The ordinary size of that shell is over an inch in length.