

NOTES ON A NEW TASMANIAN PLANT OF THE
ORDER BURMANNIACEÆ.

BY BARON FERD. VON MUELLER, K.C.M.G., M.D., Ph.D., F.R.S.

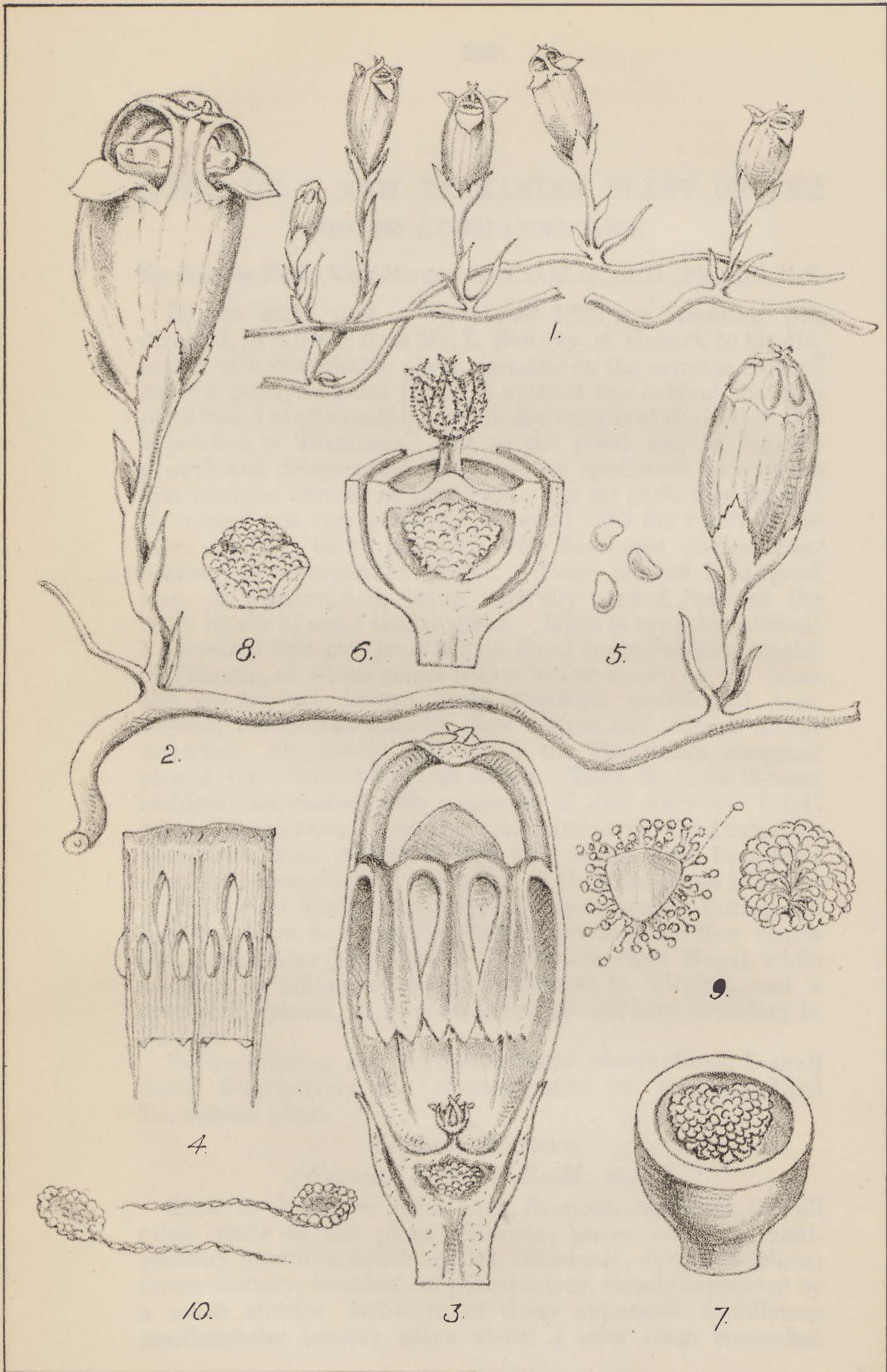
In the early part of November 1890 my attention was directed, by a letter from Mr. L. Rodway, of Hobart, to his discovery of a remarkable plant, parasitic on the extreme roots of *Aster argophyllus*, and from his notes it was evident that this plant would at all events benew for the records of the indigenous vegetation of Tasmania. But as the plant was of fugitive growth and deliquescent structure, no specimens were in the first instance secured or preserved. On my particular request the search was very patiently renewed with the result of one more specimen being procured, well developed, and another bearing an unexpanded flower. These arrived in a good state of preservation, being carefully packed between the fresh leaves of some tender grass. Much to my astonishment I perceived that this long hidden floral treasure was a species of *Thismia*, of which genus (in its widest sense) as yet some few species are known from southern continental Asia, Ceylon, the Sunda-Islands, New Guinea and tropical South America. On careful dissection the Tasmanian congener proved very distinct from all others. Thus, then, we became suddenly acquainted with a member of this otherwise intra-tropical genus from the remotest southern part of the Australian dominions, from whence indeed this would have been least expected; nevertheless, the order of Burmanniaceæ is represented by one species of the typical genus, namely *Burmattia disticha*, down to a very far southern position in New South Wales, and also just outside the tropics from Nepal, while another, *B. biflora*, advances northward to Virginia, and a species of *Apteria*, *A. setacea*, gains its northern boundary in Florida.

Before offering any further general observations, I shall detail descriptively the characteristics of the co-ordinal Tasmanian plant.

THISMIA RODWAYI.

(*Bagnisia Rodwayi*, F.v.M., m.s.c.)

Stem to about two inches long, flexuous, colourless, like all other parts of the plant glabrous; leaves scattered, rudimentary bractlike, semilanceolar, acuminate, devoid of colour; flower solitary, terminal, of putrid odour, closely supported by a much shorter involucre of three appressed equidistant semilanceolar bracts; calyx about $\frac{2}{3}$ inch long, somewhat



T.M

R.V.M direxit

R. Graff, del.

Thismia (*Bagnisia*)-*Rodwayi*, F.Y.M

- 1... Plant, natural size.
- 2... Plant, enlarged size.
- 3... Longitudinal Section of a flower.
- 4... Part of the staminal column, reversed.
- 5... Pollen grains, very much enlarged.
- 6... Longitudinal section of a young fruit.
- 7... Transverse section of a young fruit.
- 8... Placentaries & ovules, the funicles concealed.
- 9... Front & Back view of ovules & funicles.
- 10... Young Seeds with funicles.

"Mercury" litho.

succulent, ovate-campanulate, flesh-coloured, streaked by six stronger and six fainter longitudinal colourations; its six lobes much shorter than the tube, three semilanceolar-deltoid, spreading, much the shortest; three opposite to the bracts, nearly ovate-cuneate, converging, at the summit overlapping and there connate, keeled by a broadish, flattened, slightly excurrent midline; stamens six, opposite to the calyx-lobes; filaments broad, from the place of affixion near the summit of the calyx-tube slightly ascending, there dark-red and somewhat channelled; thence suddenly bent downward inside the calyx and connate; continued beyond the anthers into a dilated membranous bidenticated appendage; anthers pale, their two cells parallel, ellipsoid, slightly distant from each other, longitudinally dehiscent; style short, whitish, thinly cylindrical; stigmas three, colourless, short-bifid; ovulary adnate to the base of the calyx, one-celled, devoid of colour, almost hemispheric, excavatedly depressed at the surface; placentaries three, nearly cordate; ovules very numerous, on conspicuous funicles arising from the whole face of the plentary, provided around with an ample laxe pellucid integument of equal breadth. Complete roots and ripe fruit not yet obtained. In examining the quickly perishable and scanty material, I missed ascertaining the form of the pollen-grains, also determining the relative outer and inner position of the calyx-lobes, regarding which Miers however offers observations on *Myostoma* already. The rootlet, on which the plant grew bear many pyriform small carnulent short-stalked bodies, somewhat hollow.

That so remarkable, and to some extent also showy plant should have evaded hitherto observation, although since almost nearly 100 years the region about the estuary of the Derwent has been searched for plants, finds perhaps its explanation in the fact, that in all likelihood the flower only is peeping above the soil between decaying foliage, and thus might be easily taken for a young *Aseroe* or some other fungus, especially as the smell would lead also to that conclusion. Furthermore, each flower must be very ephemorous and perishable, and falls probably also quickly to the prey of various insects, attracted by the odour. Even in Europe the *Epipogum Gmelini* is often overlooked, when it merely emerges among rotten *Fagus*-leaves, particularly as the flowers are not high-coloured.

After now, through Mr. Rodway's circumspectness, the Tasmanian *Thismia* became not only known, but also its manner of growth elucidated, it will likely be found in other places of the island there, perhaps also in New Zealand and in Continental Australia. It should further be ascertained, whether it lives exclusively on the roots of the Musk-Aster, or whether it is nourished also by the roots of any other plants.

How restricted some parasites are in this respect is demonstrated in Tasmania and Victoria by the *Cyttaria Gunnii*, which never occurs on any other tree than *Fagus Cunninghami*, all other *Cyttarias* occurring also only on Beech-trees.

For Australian phytogeography the finding of a *Thismia*, not as might have been looked for in North-Eastern Australia, but in such an extreme extratropic isolation, is one of the most remarkable additions to our recent knowledge in this direction. But the discovery of this plant is also in other respects of special interest, because it shows that the genera *Geomitra* and *Bagnisia* should be united with *Thismia*, the merging of *Geomitra* into *Bagnisia* having already (1883) been advised by Bentham and Hooker, a view acted on by Engler in the "Pflanzen-Familien," 21 Lief. p. 48 (1888). Those who prefer smaller genera for systematic arrangements against more natural and more easily employed larger genera with subdivisions, might assign to our new plant even generic rank, then as *Rodwaya*, but such a separation would mainly rest on the reduction of three of the calyx-lobes to extreme minuteness, and on the coalescence of the tips of the longer calyx-lobes somewhat in the manner of the *Southwellias* within the otherwise far disallied genus *Sterculia*; in typical *Thismia* the lobes are perfectly disunited, much differing as regards form in various species, while in *Bagnisia* and *Geomitra* they are variously united. Adopting all these plants for one generic group, we would obtain chiefly chronologically the following arrangement, so far as the species are hitherto known; but their series will likely in the course of time receive considerable augmentation yet.

1. *Thismia Brunoniana*; Griffith in the transact. of the Linnean Soc. xix., 341-344 t. 39 (1844). Tenasserim.
2. *Thismia Gardneriana*; J. Hooker in Thwaites enum. plant. Zeylan. 325 (1864). Ceylon.
3. *Thismia Macahensis*; Bentham and J. Hooker, gen. plant. iii., 459 (1883) implied.
Ophiomeris Macahensis; Miers in transact. Linn. Soc. xx., 374-379, t. 15 (1847). Rio de Janeiro.

This and the closely allied *O. Ignassuensis* (Miers l.c.) have an obliquely bulging calyx, free stamens, bicaudulate-filaments and upwards converging anther-cells, so that the genus *Ophiomeris*, against the views of B. and H. might perhaps be kept up.

4. *Thismia hyalina*; Bentham and J. Hooker, gen. plant. iii., 459 (1883) implied.
Myostoma hyalinum; Miers in transact., Linn. Soc. xxv., 474-475 t. 17 (1866). Organ-Mountains.

This again might generically be held apart on account of the disconnected stamens with free very thin filaments and sagitate anther-connective, particularly so, should no transits to these characters be discovered in any yet unknown species.

5. *Thismia clandestina*; *Sarcosiphon clandestinum*; Blume Mus. bot. Lugd. Batav. i., 65 t. xviii. (1849) Java.

Imperfectly known, and therefore the generic place doubtful.

6. *Thismia Neptunis*; Beccari, *Malesia* i., 251 t. xi. (1878). Sarawak.

7. *Thismia Aseroe*; Beccari, *Malesia* i., 252 t. x. (1878). Singapore.

To this stands evidently in closest relation the simultaneously described and figured *Thismia ophiuris* from Borneo.

8. *Thismia clavigera*. *Geomitra clavigera*; Beccari, *Malaisia* I, 251, t. x (1878). Sarawak.

9. *Thismia episcopalis*; *Geomitra episcopalis*; Beccari, *Malaisia* i., 250 t. xi. (1878). Mt. Mattan, Borneo.

10. *Thismia Rodwayi*; Derwent, Tasmania.

This is nearest allied to the next foregoing.

The constitution of the word *Thismia*, as dedicatory to the Phyto-Anatomist Th. Smith, was unfortunate, though the name is euphonious.

Soon after this was written, several more specimens of the *Thismia* were found by Mr. Rodway and kindly transmitted to me; they came from the lower portion of the eastern slope of Mount Wellington. He noticed the plant to grow also on the roots of *Bedfordia*, and he further ascertained that the unpleasant odour of the flower is only developed in the process of decay. Root ramified into few filiform somewhat carnulent divisions. Stem one, or when two stems occur, distant, sometimes very short. The three shorter lobes of the calyx exterior, but at about the same level as the longer lobes, which can be regarded as petaline. Anthers concealed through the introflexion of the staminal tube, whereby they are pressed against the inside of the calyx-tube, so that intervening of insects becomes necessary for passing the pollen on to the stigmas. Outer part of the anther-connective ending upwards in two deltoid denticles, much overreached by an exceedingly tender setule. Pollen grains whitish when moist, almost dimidiate globular. Ripe fruit as yet unknown.