3. **EREMOPHILA**, R. Br.

(Stenochilus, *R. Br.* Eremodendron, *DC.*)

Calyx divided to the base into 5 segments or rarely 5-lobed, often but not always enlarged after flowering. Corolla-tube usually broad from the base or constricted above the ovary, more or less elongated and incurved, very rarely with the cylindrical base of *Pholidia*, the limb oblique or 2-lipped, 5-lobed. Stamens 4, didynamous, often exserted. Ovary 2-celled, with 2 or 3 superposed pairs of ovules in each cell, of which, however, the lower pairs remain usually unfecundated, or in a very few species only one pair in each cell at the time of flowering. Style filiform. Fruit, where known, a dry or succulent drupe, the putamens separating into 4 1-seeded pyrenes, or 4-celled with one seed in each cell, or fewer cells and seeds by abortion.—Shrubs. Leaves alternate or scattered. Flowers solitary, or in a few species several together in the axils, usually pedicellate, without bracts.

The genus is limited to Australia. As will be seen by the above character, there is no positive combination of characters to separate it from *Pholidia*, being connected with that genus, as *Pholidia* is with *Myoporum*, by exceptional species. The habit is, however, different, and there are always either the superposed ovules or the enlarged fruiting calyx, and often the succulent fruit, to distinguish *Eremophila*. On the other hand, the five sections into which I have divided *Eremophila* may perhaps one day be admitted as genera, which I have been unwilling to do whilst the ripe fruit of so many species is unknown, especially as there appears to be a greater proportion of intermediate species between them than between the three Myoporineous genera here adopted. F. Mueller (Fragm. vi.) unites *Pholidia* with *Eremophila*, retaining *Myoporum*, *Disoon*, and *Sentis* as distinct, but has not published the definite distinctive character he relies upon.

Sect. I. **Eriocalyx.**—*Calyx-segments not overlapping, thick and soft, densely tomentose, not becoming scarious after flowering. Ovary with two pairs of ovules in each cell. Fruit unknown.*

Flower nearly sessile. Leaves obovate to lanceolate, short, densely tomentose.
- Corolla and ovary tomentose. Corolla lobes all broad and obtuse. Stamens included . . . . . 1. *E. Mackinlayi.*
- Corolla and ovary glabrous.
  - Corolla lobes obtuse. Stamens included . . . . . 2. *E. Bowmanni.*
  - Corolla upper lobes small and acute. Stamens exserted . . 3. *E. leucophylla.*

Flowers distinctly pedunculate. Leaves obovate, oblong, densely tomentose, ½ to ¾ in. long. Corolla tomentose. Ovary glabrous 4. *E. Forrestii.*

Flowers distinctly pedunculate. Leaves linear or linear-lanceolate, mostly above 1 in. long.
- Calyx clothed with a long loose plumose wool. Leaves woolly when young, at length nearly glabrous . . . . . 5. *E. eriocalyx.*
- Calyx shortly stellate-tomentose. Leaves closely tomentose, not becoming glabrous . . . . . 6. *E. Maitlandi.*

Sect. II. **Eremocosmos.**—*Calyx-segments not at all or scarcely overlapping at the base, more or less enlarged, veined, and scarious after flowering. Ovary with 2 to 4 pairs of ovules in each cell (except in* E. oppositifolia *and* E. Paisleyi). *Fruit (where known) dry, the endocarp separating into distinct pyrenes.*

Enlarged calyx-segments more or less cuneate and obtuse.
- Leaves small, short, broad, thick, and hoary . . . . . 7. *E. rotundifolia.*
- Leaves linear or linear-lanceolate. Corolla lobes obtuse. Stamens included or shortly exserted.
  - Ovary shortly hairy, with 1 pair of ovules to each cell.
    - Corolla above 1 in. long. Stamens often exserted. Leaves 1 to 2 in. long . . . . . 8. *E. oppositifolia.*
    - Corolla ½ in. long, stamens included . . . . . 9. *E. Paisleyi.*
  - Ovary very woolly, with 2 to 4 pair of ovules to each cell.
    - Leaves narrow, linear . . . . . 10. *E. Sturtii.*
    - Leaves linear-lanceolate . . . . . 11. *E. Mitchelli.*

Enlarged calyx-segments oblong or lanceolate, acute. Leaves linear or linear-lanceolate.
- Corolla-lobes all broad. Stamens included . . . . . 12. *E. Clarkii.*
- Corolla upper lobes rather acute. Stamens exserted . . . . 13. *E. Latrobii.*

Sect. III. **Platycalyx.**—*Calyx campanulate, 5-lobed. Flowers and fruit of* Platychilus.

Single species . . . . . 14. *E. Macdonellii.*

Sect. IV. **Platychilus.**—*Calyx-segments much imbricate at the base (except in the first species), the outer ones usually broader. Corolla-lobes all broad and obtuse, or the upper ones scarcely acute. Stamens included or scarcely exserted. Ovules in 2 or 3 pairs in each cell. Fruit of* Stenochilus.

Calyx-segments small or narrow and acute, not enlarged after flowering. Leaves long, linear or lanceolate.
- Corolla tube not much enlarged upwards. Calyx-segments nearly linear . . . . . 15. *E. graciliflora.*
- Corolla tube much enlarged upwards. Calyx-segments small, very acute, from a broad base . . . . . 16. *E. longifolia.*

Calyx-segments ovate or lanceolate, acute, not exceeding 3 lines in flower, nor much enlarged afterwards. Plants very glabrous, often drying blue.
- Erect, virgate and very glutinous. Leaves narrow-linear.
  - Corolla-tube cylindrical at the base, as in *Pholidia* . . . . 17. *E. Drummondii.*

cont'd

Very divaricately branched. Leaves narrow-linear. Corolla-tube very broad and enlarged from the base . . . . . 18. *E. polyclada.*

Moderately spreading. Leaves lanceolate or linear-lanceolate, usually long. Corolla-tube broad and enlarged from the base . . . . . 19. *E. bignoniæflora.*

Calyx-segments lanceolate or the outer ones ovate, 3 to 6 lines long. Plant hoary-tomentose or at length glabrous . . . 20. *E. Freelingii.*

Calyx-segments broad-lanceolate, 4 to 6 lines long, more or less hirsute.

Leaves linear or lanceolate . . . . . 21. *E. Goodwinii.*

Leaves obovate or oblong, serrulate . . . . . 22. *E. Willsii.*

Calyx-segments obtuse, very much enlarged coloured and scarious after flowering. Leaves linear-lanceolate.

Stamens included. Plant hoary-tomentose or glabrous . . . 23. *E. platycalyx.*

Stamens exserted. Plant glabrous . . . . . 24. *E. viscida.*

Sect. V. **Stenochilus.**—*Calyx-segments imbricate at the base, usually enlarged after flowering. Corolla* 4 *upper lobes short and acute, the fifth lowest more deeply separated and sometimes narrow. Stamens exserted* (*except* E. alternifolia). *Ovules* 2 *or* 3 *pairs, or rarely only* 1 *pair in each cell. Drupe* (*except* E. alternifolia) *succulent, with a thick bony putamen not separating into nuts.*

Peduncles usually shorter than the calyx, not flexuose.

Calyx-segments lanceolate, small in flower and not much enlarged afterwards.

Leaves linear or lanceolate, hoary-tomentose or at length glabrous . . . . . 25. *E. Brownii.*

Leaves ovate-oblong, crowded, tomentose, more or less floccose 26. *E. subfloccosa.*

Calyx-segments oblong, rather obtuse, enlarged after flowering 27. *E. Oldfieldii.*

Peduncles longer than the calyx, very spreading, usually flexuose.

Leaves narrow-lanceolate, entire. Ovules, 2 pairs in each cell.

Lowest corolla-lobe obtuse. Calyx much enlarged after flowering . . . . . 28. *E. Duttonii.*

Lowest corolla-lobe acute. Calyx-segments acute scarcely enlarged after flowering . . . . . 29. *E. maculata.*

Leaves lanceolate or ovate, often denticulate. Ovules 1 pair in each cell.

Leaves mostly lanceolate. Calyx-segments lanceolate, scarcely enlarged after flowering . . . . . 30. *E. denticulata.*

Leaves mostly ovate. Calyx-segments ovate, much enlarged after flowering . . . . . 31. *E. latifolia.*

Leaves narrow-linear. Calyx-segments much enlarged after flowering. Ovules 1 pair in each cell. Stamens included . 32. *E. alternifolia.*

MYOPORACEAE

Eremophila battii
F. Muell.

Eremphila

19. **E. bignoniæflora,** *F. Muell. in Proc. R. Soc. Tasm.* iii. 294 and *Pl. Vict.* ii. t. 55. A strong-scented tall shrub or small tree, quite glabrous and often glutinous. Leaves lanceolate or linear-lanceolate, acuminate, entire, contracted into a short petiole, 2 to 6 in. long. Pedicels solitary, ¼ to ½ in. long, more or less flattened, often recurved, but not turned up again. Calyx-segments imbricate at the base, ovate, obtuse or rarely acute, thickened in the middle, 2 to 3 lines long. Corolla glabrous outside, about 1 in. long, scarcely contracted above the ovary, the tube gradually enlarged from the base, the lobes all broad and short, the 2 uppermost more united, the lowest twice as broad as the others and 2-lobed. Stamens shortly exserted from the tube but shorter than the corolla-lobes. Ovary 2-celled with 2 pairs of ovules to each cell. Drupe ovate, acute, ½ in. long or more, succulent, the putamen hard and bony, more or less completely 4-celled.—*Stenochilus bignoniæflorus*, Benth. in Mitch. Trop. Austr. 386.

N. Australia. Sturt's Creek and Gilbert river, *F. Mueller.*
Queensland. Balonne river, *Mitchell;* Suttor river, *Bowman, Sutherland;* Rockhampton, *Herb. F. Mueller.*
N. S. Wales. Murray and Darling desert, *Dallachy and Goodwin.*
Victoria. Murray desert, *Irvine.*

29. **E. maculata,** *F. Muell. in Proc. R. Soc. Tasm.* iii. 297. A tall shrub, with rigid divaricate branches, more or less hoary-tomentose or pubescent, the adult foliage usually glabrous. Leaves mostly lanceolate, varying however from elliptical-oblong to linear, acute or obtuse, entire, contracted into a petiole, rarely above 1 in. long, flat and green on both sides or hairy when young. Pedicels solitary, often above ½ in. long, very spreading or reflexed but turned up again under the flowers. Calyx-segments much imbricate and ovate at the base, acuminate, 2 to 3 lines long or more. Corolla glabrous outside, "red, more or less variegated with yellow or quite yellow," 1 in. long or more, the broad tube constricted above the ovary, the upper part slightly incurved and not much dilated, the 4 upper lobes short and acute, the lowest one narrow, recurved, separated to below the middle of the corolla. Stamens usually but perhaps not always exserted. Ovary glabrous, with 2 or 3 pairs of ovules to each cell. Fruit ovoid-globular, shortly acuminate, above ½ in. diameter, very succulent, with a hard bony putamen, completely 2-celled and less perfectly 4-celled. Seeds small, without so much albumen as in some species.—*Stenochilus maculatus*, Ker. in Bot. Reg. t. 647; R. Br. App. Sturt. Exped. 23; *S. racemosus* Endl. Nov. Stirp. Dec. 50; A. DC. Prod. xi. 715; *S. curvipes*, Benth. in Mitch. Trop. Austr. 221.

N. Australia. Attack Creek, *M'Douall Stuart's Expedition.*
Queensland. Warrego river, *Mitchell;* Isaacs and Fitzroy rivers, *Bowman and others;* Curriewillighie, *Dalton;* Darling Downs, *Lav.*
N. S. Wales. Lachlan river, *A. Cunningham;* Murray, Darling, and Lachlan rivers to the Barrier Range, *Victorian and other Expeditions;* Junction of the Murray and Murrumbidgee, *F. Mueller.*
Victoria. Murray river, *F. Mueller.*
S. Australia. Murray river towards Moriunda, *F. Mueller.*

Var. *brevifolia.* Leaves oblong or obovate-oblong, very obtuse, mostly about ½ in. long.
N. Australia. Hammersley Ranges, N.W. coast, *Maitland Brown.*
N. Australia. Murchison river, 300 miles above the Geraldine, *Oldfield;* 100 miles E. of York, *Roe.*

6. **E. Maitlandi,** *F. Muell.* A tall erect shrub, hoary or white all over with a soft dense but close or scarcely floccose tomentum. Leaves linear-lanceolate, entire, contracted at the base but scarcely petiolate, 1 to 2 in. long, coriaceous, hoary-tomentose even when old. Pedicels solitary, about $\frac{1}{2}$ in. long. Calyx-segments oblong-lanceolate, rather obtuse, not overlapping, 8 to 9 lines long, tomentose outside, more glabrous inside. Corolla broad, above 1 in. long, slightly pubescent outside, the lobes not seen perfect. Ovary acuminate, glabrous, with 2 pairs of ovules in each cell.

W. Australia. Sharks Bay, *Maitland Brown, Milne,* the specimens all very imperfect.

1. **MYOPORUM**, Banks and Soland.

(Polycœlium *and* Disoon, *DC.*)

Calyx divided to the middle or nearly to the base into 5 lobes or segments not enlarged after flowering. Corolla-tube usually short and almost campanulate or shortly cylindrical at the base, lobes 5, nearly equal and regular, or the lowest rather larger. Stamens 4, alternating with the lower lobes, or rarely 5, all nearly equal, and scarcely protruding or shortly exserted. Ovary 2- to 4-celled, or in species not Australian 5- or 6-celled, with 1 ovule in each cell, or rarely 2-celled with 2 ovules in each cell. Drupe usually small, but more or less succulent.—Shrubs (or undershrubs?). Leaves alternate or rarely opposite, entire or toothed. Pedicels axillary, usually clustered. Flowers small, mostly white.

The genus is represented by a few species in the Indian Archipelago and the Pacific islands, and by one species in tropical Africa. Of the thirteen Australian species here enumerated, one may be the same as a New Caledonian one, the others appear to be all endemic.

Sect. I. **Eumyoporum.**—*Calyx small, narrow. Ovary 2- to 4-celled, with 1 ovule in each cell. Fruit globular or ovoid, not compressed.*

Erect or divaricate shrubs. Leaves from lanceolate to obovate. Corolla more or less bearded inside, or rarely quite glabrous. Perfect stamens 4.
- Leaves acute or acuminate, entire or very rarely slightly serrate. Corolla-lobes usually shorter than the tube . . 1. *M. acuminatum.*
- Leaves obtuse, acute, or acuminate, some usually serrate. Corolla-lobes usually as long as the tube. (Southern or Western seacoast or salt plant) . . . . . 2. *M. serratum.*

Erect shrubs. Leaves lanceolate or linear, entire. Corolla not bearded at the throat. Stamens, 5.
- Corolla 2 to 3 lines long . . . . . 3. *M. deserti.*
- Corolla 4 to 5 lines long . . . . . 4. *M. laxiflorum.*

Diffuse or procumbent shrubs. Leaves linear or cuneate, thick.
- Corolla-lobes bearded at the base, as long as the tube, or nearly so. Fruit globular . . . . . 5. *M. parvifolium.*
- Corolla-lobes glabrous, much shorter than the tube. Fruit ovoid . . . . . 6. *M. brevipes.*

Diffuse or weak shrub. Leaves opposite . . . . . 7. *M. oppositifolium.*

Sect. II. **Disoon.**—*Calyx small, narrow. Ovary 2-celled, with 1 ovule in each cell. Fruit compressed.*

Fruit very flat, acute (about 3 lines long).
- Leaves linear-lanceolate, acute, entire or scarcely toothed, 1½ to 3 in. long . . . . . 8. *M. platycarpum.*
- Leaves oblong or lanceolate, obtuse, serrate, ½ to ¾ in. long. Plant very glutinous . . . . . 9. *M. Beckeri.*

Fruit small and very obtuse, somewhat flattened (about 1 line long).
- Leaves narrow, linear, 2 to 4 in. long . . . . . 10. *M. floribundum.*
- Leaves minute, crowded, cordate . . . . . 11. *M. salsoloides.*

Sect. III. **Chamæpogonia.**—*Calyx-segments herbaceous. Ovary 2-celled, with 2 ovules in each cell. Fruit somewhat compressed.*

Calyx-segments 2 to 4 lines long . . . . . 12. *M. debile.*

Species insufficiently known.

Calyx and foliage of some forms of *M. serratum*, but ovary and fruit said to be 2-celled, with 2 ovules or seeds in each cell . . . . . 13. *M. mucronulatum.*

Myoporum

1. **M. acuminatum,** *R. Br. Prod.* 515. An erect glabrous shrub, exceedingly variable in stature, breadth of leaves, and size of flowers. Leaves alternate, in the common forms varying from elliptical-oblong to lanceolate or linear, more or less acuminate, much contracted towards the base, quite entire, and 1½ to 3 in. long, but sometimes the broader ones almost obovate and rather obtuse, or all smaller, or very rarely a few of the leaves marked here and there with a few distant teeth. Pedicels 2 to 4 lines long, in axillary clusters of 2 to 4 or rather more, or rarely solitary. Calyx-tube very short, segments narrow, acute, rather rigid, rarely above 1 line long. Corolla almost campanulate, about 3 to 4 lines long, the lobes nearly equal, spreading, rather shorter, or sometimes much shorter than the tube, more or less bearded inside as well as the tube, the hairs sometimes almost disappearing from the lobes, but on a close examination I have very rarely found them quite absent as in *M. deserti.* Stamens 4 without any rudiment of the fifth in the numerous flowers examined, although such a rudiment has been observed by others; anthers very shortly protruding. Ovary most frequently 4-celled, but occasionally with only 3 cells and ovules. Drupe nearly globular, 2 to 3 lines diameter, or rarely larger.

N. Australia. Dampier's Archipelago and Cygnet Bay, N.W. coast, *A. Cunningham;* Nichol Bay, N.W. coast, *Ridley's Expedition.*

Queensland. Common along the coast from Cape Upstart, *M'Gillivray,* to Moreton Bay, *A. Cunningham* and others.

N.S. Wales. Very common from Port Jackson to the northern frontier and in the desert interior to the Murray and the Barrier range.

Victoria. On the Murray and adjoining deserts, but apparently replaced on the south coast by *M. serratum.*

W. Australia. Murchison river, *Oldfield, Drummond,* 6th coll. n. 137.

This truly polymorphous species, usually distinguished from *M. serratum* by its acute or acuminate entire leaves, cannot, however, be separated from it by any positive characters; and on the other hand has been subdivided into several races, or supposed species, of which the following are the most marked:—

1. *ellipticum.* Leaves rather broad and scarcely acuminate. Flowers moderate-sized.—*M. ellipticum,* R. Br. Prod. 515; A. DC. Prod. xi. 707.—About Port Jackson, *R. Brown, Sieber, n.* 223, and others.

2. *acuminatum.* Leaves rather broad, acuminate, mostly 3 to 4 in. long. Flowers larger than in *M. ellipticum.*—*M. acuminatum,* R. Br. Prod. 515; A. DC. Prod. xi. 707.—Barnard and Frankland islands, *M'Gillivray;* Brisbane river, Moreton Bay, *F. Mueller* and others: Port Jackson, *R. Brown, Sieber, n.* 222 and others: Hastings river, *Beckler. Pogonia glabra,* Andr. Bot. Rep. t. 283; *Andreusia glabra,* Vent. Jard. Malm. t. 108, although figured with 5 equal stamens, is probably this form.

3. *parviflorum.* Leaves of the typical form, or rather smaller and narrow. Flowers smaller, the beard of the corolla copious or rare, or sometimes none at all.—*M. tenuifolium,* R. Br. Prod. 515; A. DC. Prod. xi. 711, au Forst.?—Queensland coast, Keppel and Shoalwater Bays, etc. *R. Brown;* islands off the coast, *M'Gillivray, F. Mueller,* and others; Rockingham Bay and Rockhampton, *Dallachy* and others; Moreton Bay and other parts of the coast, *A. Cunningham.* Some of the N.W. specimens appear also to belong to this form.

4. *angustifolium.* Leaves narrow-lanceolate or almost linear, but on longer petioles and more acute than in *M. deserti,* the lobes of the corolla sometimes almost, or even quite, glabrous, but often much bearded, and the upper stamen wanting (or small and abortive?)—*M. montanum,* R. Br. Prod. 515; A. DC. Prod. xi. 708; *M. Cunninghamii,* Benth, in Hueg. Enum. 78; A. DC. l. c. 707; *M. cyanantherum* and *M. Dampieri,* A. Cunn. in A. DC. l. c. 708.—Port Jackson and Mount Hunter, *R. Brown,* but chiefly in the interior of Queensland and N. S. Wales, extending to the Murray, the Barrier Range, and to Cooper's Creek. To this form also belong most of the specimens from the N.W. coast as well as those from Murchison river.

The species is closely allied to, and perhaps should include, the New Caledonian *M. tenuifolium,* Forst., a name which in that case would claim the priority over Brown's. But on examining our New Caledonian specimens (Vieillard n. 1091 and Deplanche n. 356), I find that, although they resemble some Queensland ones of the var. *parviflorum* yet the corolla is more perfectly glabrous inside, and the fifth stamen is present, although with a narrow barren anther. I have great doubts, however, whether this character will prove constant.

3. **M. deserti,** *A. Cunn.*; *Benth. in Hueg. Enum.* 78. An erect, glabrous shrub, nearly resembling the narrow-leaved varieties of *M. acuminatum*, but the leaves still narrower, linear or linear-lanceolate, acute or almost obtuse, entire, rather thick, 1 to 2 in. long, and narrowed into a very short petiole. Pedicels often several together, rather thick, and almost always remarkably recurved. Calyx and corolla about the size of the smaller-flowered varieties of *M. acuminatum*, but the corolla very regular, without any or with scarcely any hairs in the throat. Stamens 5, all equal in every one of the numerous flowers examined, the anthers not exserted. Ovary 2-celled or very rarely 3-celled, with 1 ovule in each cell. Fruit ovoid, "yellowish," 2 to 3 lines long, not compressed, usually with 2 cells and seeds.—A. DC. Prod. xi. 707; *M. strictum* and *M. patens*, A. Cunn. in A. DC. Prod. xi. 708; *M. dulce*, Benth. in Mitch. Trop. Austr. 384; *M. rugulosum*, F. Muell. in Linnæa, xxv. 427.

Queensland. Burdekin river, *F. Mueller*; Belyando and Balonne rivers, *Mitchell*; Nerkool Creek, *Bowman*; Darling Downs, *Lau.*

N. S. Wales. Lachlan river, *A. Cunningham*; from the Murray and Darling to the Barrier Range, *Victorian and other Expeditions*; Mudgee, *Woolls*; New England, *C. Stuart.*

Victoria. Murray river and Bacchus Marsh, *F. Mueller.*

S. Australia. From the Murray to St. Vincent's Gulf, Flinders Range, &c., *F. Mueller*; in the interior, *M'Douall Stuart's Expedition.*

W. Australia. Estuary of the Murchison, *Oldfield*; Shark's Bay, *Milne.*

1. **M. insipida,** *R. Br. Prod.* 400. A fine tree of 60 to 70 ft. or more (*Dallachy*), glabrous but the young branches and petioles often ferruginous. Leaves oval-elliptical or oblong, shortly acuminate, rounded or cuneate at the base, all under 4 in. long in some specimens, all above 6 in. in others, and often very variable in size and relative breadth on the same specimens, pale and shining above with the veins impressed, more or less glaucous underneath, with from 7 to 20 prominent primary veins on each side of the midrib. Male flowers few or rather numerous, in sessile axillary clusters. Pedicels shorter than the perianth, with a small broad ciliolate bract close under the flowers. Perianth cylindrical, 2 to 2½ lines long, with 3 lobes scarcely above ½ line long. Staminal column included, not dilated at the top; anthers 6, linear, adnate in a ring below the top of the column and occupying ⅔ of its length. Female flowers not seen. Fruits solitary or 2 together on very short thick axillary pedicels, ovoid or ovoid-oblong, about 1 in. long, rusty-tomentose or nearly glabrous. Seeds normal; embryo with very small thick divaricate cotyledons quite entire.—A. DC. Prod. xiv. 206; *A. cimicifera*, R. Br. Prod. 400; A. DC. l.c. 191.

N. Australia. Islands of the Gulf of Carpentaria, *R. Brown;* Brunswick Bay, *A. Cunningham;* Melville island, *Fraser;* Port Essington, *Armstrong.*

Queensland. Endeavour river, *Banks and Solander;* Albany island, *W. Hill;* Rockingham Bay, *Dallachy;* near Rockhampton, *Thozet.*

The species is very near to *M. Zeylanica*, A. DC., united by Thwaites with *M. laurifolia*, Hook. f. and Thoms. from Ceylon, and is indeed scarcely to be distinguished from it, as far as our specimens show, but by the narrower perianth and apparently fewer anthers.