

I. DROSERA, Linn.

(Sondera, *Lehm.*)

Calyx-segments 4, 5, or rarely 8. Petals as many. Stamens as many; anthers opening laterally or outwards in longitudinal slits. Ovary 1-celled, with 2 to 5, usually 3, parietal placentas; styles as many as placentas, simple or variously branched. Capsule opening in as many valves as placentas, with the placentas in their centre.—Herbs. Leaves usually involute in vernation, the lamina more or less covered on the upper side with glandular hairs or cilia and bordered with longer ones, usually irritable and closing over insects or other objects resting on them, the under side and petioles without glandular hairs. Stipules when present scarious and usually lobed or jagged. Flowers solitary or in one-sided racemes or forked cymes, on radical scapes or terminal peduncles.

A large genus, with the extensive geographical range of the Order, and comprising the great majority of its species. Of 41 Australian species, 4 are also E. Indian or in the Archipelago, of which 1 extends to New Zealand, 4 more extend to New Zealand only, the remaining 33 are endemic.

The Australian species may be readily distributed into the two old-established sections *Rorella* and *Ergaleium*, if characterized chiefly by their mode of vegetation. In *Rorella* the stock or stem, very short and completely covered with the leaves, except in *D. indica*, forms at its upper end the winter bud for the following year's vegetation, the lower end dying away either at the close of the season or after having endured several years covered with the old imbricate bases of the leaves, never forming a bulb at the base, but emitting new roots or sometimes stolons immediately under the fresh leaves of the new year. In this section also the styles are usually simple or once branched, very rarely dichotomous, and the stipules are wanting only in 3 species. In the second section, *Ergaleium*, the short stem-like stock forms usually, perhaps always, at its lower end a bulb, and at the upper end either a rosette of leaves with a leafless scape or leafy stems, which appear to be annually renewed, although in what manner this takes place has not been observed. The stock or stem between the bulb and the rosette has frequently loose ragged remains of leaves or petioles, as if it were partially at least perennial. In this section the styles are always short and very much divided, forming usually a dense tuft on the ovary, and the stipules are either entirely wanting, or, in *D. Banksii*, small and very evanescent. In both sections, however, and especially in *Rorella*, there are single exceptional species, which prevent giving any definite character derived from the singular diversities in the styles and other floral characters. Planchon, in his excellent study of the genus, in the 'Annales des Sciences Naturelles,' ser. 3, ix., proposes each of these anomalous species as a distinct section, but that course appears to me not to tend towards clearness of method, but rather to confuse the mind, and I have preferred adopting, with slight modifications, the two old sections, sub dividing them more artificially in the following table:—

SECT. I. *Rorella*.—Stock not bulbous, the upper end perennial. Scapes leafless (except in *D. indica*). Stipules often present. Styles usually simple or divided into 2 simple branches, or rarely dichotomous.

No stipules.

Stems elongated. Leaves alternate, linear. Racemes several-flowered. Styles divided to the base into 2 filiform branches 1. *D. indica*.

Stems short, covered by the sheathing bases of the linear leaves. Peduncles or scapes 1-flowered. Styles short, simple, with capitate stigmas 2. *D. Arcturi*.

Stemless. Leaves obovate, rosulate. Scapes short, several-flowered. Styles forked or dichotomous 3. *D. glanduligera*.

Stipules scarious. Leaves radical, rosulate (except in *D. binata*), the stems or stock dying away below the rosette or rarely persisting and densely covered with the dried remains of the old leaves and stipules.

Scape filiform, with 1 minute 4-merous flower. Styles 4, undivided 4. *D. pygmaea*.

Scape filiform, with a short loose almost corymbose raceme of 2 to 4 flowers. Leaves obovate or orbicular. Styles 2, divided to the base into 2 branches (or 3 simple?), with large capitate stigmas 5. *D. platystigma*.

Styles 5, filiform, undivided. Stipules short, with fine lobes 6. *D. pulchella*.

Styles 3, filiform, undivided. Stipules silvery-white, rather broad, densely imbricate in a prominent central bud 7. *D. leucoblasta*.

Scape with a one-sided raceme of several flowers, all on short pedicels.

Racemes glabrous or scarcely pubescent. Leaves obovate or orbicular.

Scapes slender, rarely 2 in. high.

Racemes short, rather loose. Calyx narrow, about 1 line long. Styles 3, short, with globular stigmas 8. *D. nitidula*.

Racemes slender. Pedicels very short. Calyx not half line long. Styles filiform. Styles 3. Petiole not twice as long as the lamina 9. *D. paleacea*.

Styles 5, rarely 4. Petiole 3 times as long as the lamina 10. *D. parvula*.

Scapes attaining several in. Pedicel very short. Calyx above 1 line long. Styles 5, simple, fringed at the stigmatic end 11. *D. Burmannii*.

Styles 3 or 4, divided to the base into 2 branches, entire or forked at the end 12. *D. spathulata*.

Racemes, especially the calyces, softly villous.

Styles 3 or 4, simple. Leaves oblong. Old petioles and stipules often persistent below the rosette. Anthers oblong, on thick filaments. Petioles closely reflexed on the stock 13. *D. Drummondii*.

Anthers small, on slender filaments. Petioles not reflexed 14. *D. scorpioides*.

Styles 3, dichotomous. Leaves orbicular, the petioles long, woolly-hairy as well as the stipules 15. *D. petiolaris*.

Scape tall, with a loose cyme. Leaves linear, forked or dichotomous. Styles divided into a dense tuft of numerous lobes 16. *D. binata*.

SECT. II. *Ergaleium*.—Stock short, slender, stem-like, naked or with ragged remains of old peduncles, forming (usually if not always) a bulb at the lower end and producing at the upper end a rosette of leaves and leafless scapes, or leafy stems or branches. Stipules none (or in *D. Banksii* small and evanescent). Styles dichotomous or divided into very numerous filiform branches, forming a dense tuft.

Rootstock bearing a simple rosette of leaves, with leafless scapes or peduncles.

- Leaves orbicular or obovate, long petiole 17. *D. zonaria*.
- Leaves orbicular obovate or oblong, tapering into a very short petiole.
- Peduncles, usually several, all 1-flowered.
- Leaves small, thick, oblong, not half as long as the peduncle 18. *D. bulbosa*.
- Leaves obovate, penniveined, nearly as long as or longer than the peduncle 19. *D. rosulata*.
- Leaves obovate, several-nerved, nearly as long as the peduncle 20. *D. Whitakeri*.
- Peduncles several, filiform, 2- or 3-flowered. Leaves obovate, penniveined 21. *D. macrophylla*.
- Peduncles solitary, bearing a cyme of many flowers.
- Leaves all reduced to lanceolate membranous scales 22. *D. squamosa*.
- Leaves broadly obovate or orbicular 23. *D. erythrorhiza*.
- Rootstock bearing a rosette of leaves, and either leafy flowering stems, or leafless scapes and leafy side-branches. Leaves not peltate.
- Stem-leaves opposite or whorled. Central scape usually leafless, bearing a cyme of several flowers.
- Leaves of the primary rosette scarcely petiolate, above $\frac{1}{2}$ in. long. Scape (with the cyme) 3 to 6 in. long or more 24. *D. stolonifera*.
- Leaves of the primary rosette distinctly petiolate, orbicular, under 2 lines diameter. Scape (with the cyme) 2 to 4 in. 25. *D. humilis*.
- Stem-leaves alternate.
- Central scape leafless, 1- or 2-flowered, $\frac{1}{2}$ to $\frac{3}{4}$ in. long. Leafy side-branches short, usually barren 26. *D. ramellosa*.
- Stem leafy, with a many-flowered terminal cyme 27. *D. flabellata*.
- Rootstock terminating in a single or branched leafy flowering stem. Lower leaves reduced to short linear-subulate or linear-lanceolate scales or (in the first 2 species) rosulate and not peltate. Stem-leaves peltate, on filiform petioles, often clustered in the axils.
- Stem-leaves lunar-peltate, i.e. broadly crescent-shaped or at least with 2 prominent angles.
- Lower leaves, when present, rosulate, not peltate. Racemes simple, the pedicels all short.
- Sepals entire, glabrous. Seeds narrow-linear 28. *D. auriculata*.
- Sepals toothed, villous or nearly glabrous. Seeds ovoid 29. *D. peltata*.
- Lower leaves not rosulate, all reduced to small narrow acute scales. Racemes branched or the lower pedicels long.
- Flowers large, red or yellow, few, in a short loose cyme. Seeds linear 30. *D. Neesii*.
- Flowers small, white, in a large divaricate panicle. Seeds ovate 31. *D. gigantea*.
- Stem-leaves orbicular-peltate, without angles, the lower ones not rosulate, often reduced to narrow acute scales.
- Flowers solitary or very few, mostly 8-merous 40. *D. heterophylla*.
- Flowers few, small, in a simple raceme, lower pedicels short. Stipules often to the upper leaves. Styles not much divided 41. *D. Banksii*.
- Flowers 5-merous, in cymes or loose racemes. Stipules none. Styles not much divided. Flowers very small, in many-flowered cymes 32. *D. myriantha*.
- Styles divided nearly to the base into very numerous filiform, mostly simple branches.
- Flowers many in the cyme, white. Calyx-segments entire 33. *D. pallida*.
- Flowers in cymes, red. Calyx-segments ciliate-toothed, villous or nearly glabrous 34. *D. penicillaris*.
- Flowers few, in short, loose, simple or rarely once-forked racemes. Calyx-segments ciliate-toothed, glabrous or slightly villous 35. *D. filicaulis*.
- Styles divided into very numerous dichotomous branches.
- Flowers in a loose cyme or corymbose panicle.
- Glabrous, usually simple and erect. Leaves rather large 36. *D. Huegelii*.
- More or less glandular-pubescent, usually flexuose or twining. Leaves small 37. *D. macrantha*.
- Flowers few, in a simple or very rarely once-forked loose raceme 38. *D. Menziesii*.
- Styles divided into very numerous very short branches, forming a dense globose mass. Filaments dilated upwards. Sepals rather large, usually glabrous and entire 39. *D. calycina*.

11. **D. Burmanni**, Vahl; DC. Proa. 1. 318. Leaves all radical, rosulate, obovate-spathulate, about 3 or 4 lines diameter, narrowed into a petiole not so long. Stipules scarious, cut into narrow lobes, not so long as the petiole. Scapes solitary or 2 or 3 from the same tuft, slender, attaining 5 or 6 in. and rarely under 3 in. long, the upper portion occupied by a slender one-sided raceme of several flowers. Pedicels short. Sepals glabrous, $1\frac{1}{2}$ to 2 lines long. Anthers small. Styles 5, undivided, filiform, not branched but slightly dilated and fringed towards the end.—Planch. in Ann. Sc. Nat. ser. 3, ix. 190; Wight, Ic. t. 944.

N. Australia. Regent river, N.W. coast, *A. Cunningham*; Upper Victoria river, Providence Hill, and M'Adam range, Nicholson river, Gulf of Carpentaria, *F. Mueller*.

Queensland. Endeavour river, *Banks and Solander*; Brisbane river, *F. Mueller, Henne, C. Stuart*.

The species is widely spread over E. India and the Archipelago, extending to S. China. Without examining the styles, it is very difficult to distinguish it from *D. spatulata*.

1. **D. indica**, *Linn.*; *DC. Prod.* 1. 319. Leary stems, from a few in. to 1 or nearly 2 ft. long. Leaves linear, acuminate, often several in. long, fringed with the glandular ciliae of the genus, either quite to the base or leaving a short glabrous petiole, often half stem-clasping, but not sheathing. Stipules none. Flowers in loose, lateral, often leaf-opposed racemes, short and few-flowered, or long with more numerous flowers, glabrous or glandular-pubescent. Pedicels longer than the calyx. Sepals narrow, about $1\frac{1}{2}$ lines long in flower, 2 lines in fruit. Anthers oblong-linear. Styles 3, divided to the base, each into 2 filiform branches, dilated and stigmatic on the inner side at the end. Seeds obovoid, with a close testa.—*Planch.* in *Ann. Sc. Nat.* ser. 3, ix. 204; *Wight, Ill. t.* 20 C.; *F. Muell. Pl. Vict.* i. 58; *D. serpens*, *Planch.* l. c.

N. Australia. Islands of the Gulf of Carpentaria, *R. Brown*; Upper Victoria river, *F. Mueller*; Port Essington, *Armstrong*; Attack Creek, *M'Douall Stuart's Expedition*.

Queensland. Endeavour river, *R. Brown*, *A. Cunningham*; Shoalwater Bay, Keppel Bay, *R. Brown*; Port Curtis, *M'Gillivray*; Rockhampton, *Thozet*; Broad Sound, *Bowman*.

Victoria. Moist gravelly places round freshwater lakes, near Eustone, on the Murray, rare, *F. Mueller*.

W. Australia. Murchison river, *Oldfield*.

Common in East India and the Archipelago, extending as far as Amoy, in China, and also in various parts of tropical Africa. The Australian specimens are usually larger, with longer racemes and larger flowers than the Indian ones, but not always so, and there is no other difference.

tufted, with long silky or rusty hairs covering the persistent bases of the old leaves and stipules. Leaves rosulate, orbicular or broadly obovate, rarely above 2 lines diameter, on a rather broad petiole of $\frac{1}{2}$ to 1 in. in the ordinary form, the under side of the lamina and the petiole clothed with long silky hairs. Stipules scarious, but not prominent. Scapes in the largest specimens 1 ft. high but usually about half that, including the rather loose, often long, 1-sided raceme, the calyx, pedicels, and rhachis more or less villous with soft silky or velvety hairs. Pedicels rather shorter than the calyx, often reflexed. Sepals above 1 line long in flower, 2 lines in fruit. Petals broad, rather large. Anthers small. Styles 3, repeatedly dichotomous, the last branches short and stigmatic.—*D. fulva*, Planch. in Ann. Sc. Nat. ser. 3, ix. 289.

N. Australia. Islands of the Gulf of Carpentaria, *R. Brown*, *Henne*; Goulburn Island, *A. Cunningham*; Port Essington, *Armstrong*; M'Adam range, *F. Mueller*.

Queensland. Endeavour river, *Banks and Solander*, *R. Brown*. Banks's specimens are remarkable for their petiole 1 to 2 in. long and less dilated, with a lamina of 1 to 2 lines diameter, which induced Planchon to consider them as belonging to a distinct species; but *R. Brown's* carefully-selected series of specimens show every gradation from the longest to the shortest petioles.

Planchon describes the styles of this species as twice bifid; I find them 3 or 4 times bifid. It is, however, exceedingly difficult to trace their ramifications from dried specimens. In the bud they form a dense mass which requires great care in unfolding, and after flowering they are so mixed in the withered petals, that it is almost impossible to extract them whole. The leaves are, as observed by Planchon (l. c. 289, 290) not peltate, and the association of the species with the very dissimilar *D. Banksii* into one section (*Lasiocephalum*), proposed by Planchon (l. c. 94), and founded partly on this character, can scarcely be admitted.