

THE

FLORA OF BRITISH INDIA.

BY

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ASSISTED BY VARIOUS BOTANISTS.

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CHENOPODIACEÆ TO ORCHIDÆÆ.

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L REEVE & CO., 5, HENRIETTA STREET, COVENT GARDEN.

1890.

Whole plant 3-4 in. high, very closely allied to *T. Brunoniana*, but differing in the solitary flower and orbicular perianth-lobes.

ORDER CXLVIII. ORCHIDÆÆ.

Herbs of various habit, rarely shrubby, of two principal forms: 1, terrestrial, tuberous-rooted herbs, with annual herbaceous simple stems and solitary or spicate or racemose flowers: 2, epiphytes with perennial stems or branches variously thickened and forming a pseudobulb, flowering from the top sides or base of the pseudobulb. *Perianth* superior, irregular, of 6 free or variously combined pieces; 3 outer (sepals) more or less alike, the 2 lateral sometimes united into a short or long sac or spur-like base (*mentum*); 3 inner (petals) dissimilar, the 2 lateral alike, the other (*lip*) usually very differently shaped. *Stamens* and *style* united in a column opposite the lip, anther (except in *Cypripediæ*) solitary on the front or top or back of the column and free or adnate to it, 2-celled or by subdivisions 4-celled; top of the column sometimes produced in front (towards the lip) into a beak (*rostellum*); pollen grains usually cohering in each cell into 1, 2, or 4 pairs of oblong globose or pyriform waxy or powdery masses (*pollinia*) which are free or attached by pairs or fours to a viscus or gland, or a stalk (*caudicle*) that terminates in a gland and by which the pollen mass or masses may be removed entire. *Ovary* inferior, 1-celled (3-celled in *Apostasia*), usually linear and twisted; stigma a viscid surface on the top or concave face of the column, opposite the lip and below the anther (in *Cypripedium* the anthers are 2, one on each side of the base of a short style with a discoid stigma). *Seeds* minute, testa lax enclosing a homogeneous nucleus.—Genera 340, species about 5000, temperate and tropical, rarely arctic.

KEY TO THE TRIBES AND SUBTRIBES.

TRIBE I. Epidendrææ. *Anther* 1, opercular, usually deciduous, cells parallel, distinct. *Pollinia* waxy, 1-4 in each cell, free, or those of each cell held together at the base by a viscid appendage, not attached by their bases or by a caudicle to the rostellum. (5 *Tipularia* has caudicled pollinia, and in *Calanthe* and other *Cælogyneæ* the long bases of the pollinia resemble caudicles.)

Subtribe 1. **MALAXEÆ.** Stems simple, leafy, rarely leafless, with often a pseudobulbous base. Inflorescence terminal. Flowers small or minute. Anther erect or inclined, usually persistent, not incumbent. Pollinia 4 (or 8), subequal, close together, usually free (without a viscid appendage).

Subtribe 2. **DENDROBIÆÆ.** Inflorescence terminal, lateral, or on a leafless scape. Pollinia 4, rarely 2, 1-seriate, parallel, appendage 0.

Subtribe 3. **ERIEÆ.** Inflorescence lateral, or on a leafless scape. Pollinia 8, subequal, appendage 0 or obscure.

Subtribe 4. **BLETIEÆ.** Inflorescence usually lateral. Pollinia 8, except in *Anthogonium*, usually in 2 series, parallel, ascending, connected by a granular appendage.

Subtribe 5. **CÆLOGYNEÆ.** Inflorescence terminal. Pollinia 8 or 4, subequal, connected by viscus or an appendage (in *Calanthe* and others, the pollinia are appendaged, but the appendage is an undeveloped portion of the pollen itself, and is not derived from the rostellum).

TRIBE II. **Vandææ.** *Anther* 1, posticous, opercular, resting on the rostellum, cells usually confluent. *Pollinia* waxy, usually 2 or 4 in superposed pairs, attached singly or in pairs to a gland or process of the rostellum which is carried away with them when they are removed.

Subtribe 1. **EULOPHIÆ.** Leaves on pseudobulbs, plaited and nerved. Scape leafy or not. Lip spurred.

Subtribe 2. **CYMBIDIÆ.** Leaves on pseudobulbs, plaited and nerved. Scape leafy or leafless. Lip not spurred. Column not produced into a foot.

Subtribe 3. **SARCANTHÆ.** Stem without pseudobulbs, rooting. Leaves distichous (rarely 0), not plaited. Peduncle lateral or axillary.

Subtribe 4. **NOTYLIEÆ.** Stem with a 1-leaved pseudobulb, or slender. Leaves small, distichous. Anther behind and parallel to the terminal erect or inclined rarely horizontal rostellum. Pollinia with a simple or double stipes, pendulous from the tip of the rostellum.

TRIBE III. **Neottieæ.** Stem not bulbous (roots often bulbous). *Anther* 1, posticous, opercular, or erect and persistent; cells distinct, parallel. Pollen granular, powdery or in small masses.

Subtribe 1. **VANILLEÆ.** Stem tall, erect or climbing, often branched. Racemes or panicles terminal or terminal and axillary. Anther subopercular, incumbent on a short rostellum.

Subtribe 2. **CORYMBEÆ.** Stem tall, sometimes branched. Leaves broad. Racemes or panicles terminal. Anther erect, parallel to the erect rostellum.

Subtribe 3. **SPIRANTHÆ.** Stem simple erect; root not tuberous. Leaves membranous or 0. Anther erect or inclined forward, parallel to the elongate rostellum.

Subtribe 4. **DIURIDEÆ.** Stem simple; erect from an underground tuber. Anther erect or inclined forward; rostellum usually short.

Subtribe 5. **ARETHUSEÆ.** Stem simple, erect from an underground tuber. Anther opercular, incumbent or suberect.

Subtribe 6. **LIMODOREÆ.** Stem simple, usually leafy, erect from an underground rootstock. Anther opercular, incumbent or suberect.

TRIBE IV. **Ophrydeæ.** *Anther* 1, posticous, erect, inclined or reflexed. Cells parallel or diverging, adnate to the column and often continuous with the rostellum. *Pollinia* 1, rarely 2 in each cell, granular, produced into short caudicles attached to a gland or to the rostellum.—Terrestrial herbs.

Subtribe 1. **EUOPHRYDEÆ.** Anther erect. Pollinia with their glands enclosed in a pouch of the rostellum.

Subtribe 2. **HABENARIEÆ.** Anther erect. Pollinia with their glands naked or partially included in a groove or fold of the rostellum.

Subtribe 3. **DISEÆ.** Anther reclinate or reflexed on the back of the column, rarely suberect. Stigma broad, subterminal or subadnate to the lip.

TRIBE V. **Cypripediæ.** *Anthems* 2, one on each side of the ros-

tellum, sessile or stipitate. *Anther* posticous. *Pollinia* granular.—
Terrestrial herbs.

KEY TO THE GENERA.

TRIBE I. **Epidendreae.**

Subtribe 1. MALAXEÆ (and LIPARIDÆE, *Gen. Pl.*).

1. OBERONIA. Epiphytic. Leaves distichous, fleshy, laterally compressed, nerveless. Flowers very minute, in cylindric spikes or racemes; column very short.
2. MICROSTYLIS. Terrestrial. Leaves membranous, base sheathing. Flowers small. Column very short.
3. LIPARIS. Terrestrial or epiphytic. Leaves membranous or coriaceous, base sheathing. Flowers small or medium-sized. Column long.
4. PLATYCLINIS. Epiphytic; pseudobulb 1-leaved. Flowers small; bracts rigid, glutaceous, ribbed, margins convolute. Column long or short with long or short membranous side arms.
5. TIPULARIA. Terrestrial; pseudobulb 1-leaved. Lip with a long spur.
6. OREORCHIS. Terrestrial, 1-leaved. Sepals and petals suberect. Column long.
7. CORALLORHIZA. Leafless. Root coralloid. Sepals and petals suberect. Column long.

Subtribe 2. DENDROBIEÆ.

* *Inflorescence lateral on a leafy or leafless stem, or terminal, or from the top of a 1-2-leaved pseudobulb.*

8. DENDROBIUM. Lip adnate to the produced foot of the column, contracted at the base or clawed, base erect and incumbent on the column, not mobile.

** *Inflorescence distinct from the pseudobulb.*

9. BULBOPHYLLUM. Racemes or spikes elongate, rarely 1-fl. or umbelliform. Sepals usually subequal, free. Lip jointed on the foot of the column and mobile.
10. SUNIPIA. Characters of *Bulbophyllum*, but anther turned away from the rostellum and dehiscing upwards. Flower spicate, coriaceous, concealed by the concave bracts.
11. CIRRHOPETALUM. Flowers umbellate. Lateral sepals longer than the dorsal, placed under the mobile lip or connate.
12. TRIAS. Scape 1-fl. Sepals spreading equally. Anther produced into a long appendage. Very small herbs, pseudobulbs 1-leaved.
13. DRYMODA. Scape 1-fl. Lateral sepals far removed from the dorsal. Pollinia connate in pairs. Pseudobulb small, 1-leaved; leaf caducous.
14. MONOMERIA. Raceme long, lax-fl.; flowers large. Lateral sepals broad, far removed from the dorsal. Pseudobulb 1-leaved; leaf narrow, petioled, coriaceous.
15. DENDROCHILUM. Flowers small, racemose. Sepals equal, spreading. Pseudobulb 0, or on a rigid creeping stem; leaf narrow.
16. PANISEA. Scape slender, few-fl. Sepals subequal. Lip very narrow, with a long sigmoid claw. Pollinia 4, distinct. Pseudobulb narrow, crowded, 1-leaved.
17. ACROCHENE. Scape loosely many-fl. Mentum saccate. Petals fimbriate. Lip jointed on the base of the column. Pollinia 2, globose, connected by a granular appendage.

Subtribe 2. HABENARIÆ.

105. HERMIRIUM. Lip not spurred. Low small-fl'd. herbs.

106. HABENARIA. Lip spurred. Sepals equalling or exceeding the petals. Flowers spicate or racemose. Rostellum not elongate.

107. DIPLOMERIS. Lip spurred. Sepals much smaller than the petals. Flowers solitary, large,

108. HEMIPILIA. Lip spurred. Sepals larger than the petals. Leaf radical, solitary; raceme few-fl'd. Rostellum very prominent.

Subtribe 3. DISEÆ.

109. SATYRIUM. Lip erect, 2-spurred. Flower spicate.

Subtribe 4. CORYCIÆ.

110. DISPERIS. Lateral sepals spurred or saccate. Lip not spurred, tip 2-lipped or variously dilated.

TRIBE V. **Cypripediæ.**

111. CYPRIPIDIUM. Sepals spreading. Lip inflated. Anthers 2. Ovary 1-celled. Flowers large.

112. APOSTASIA. Sepals, petals and lip all similar. Anthers 2. Ovary 3-celled. Flowers small.

113. NEUWIEDIA. Sepals and petals similar. Lip rather broader. Anthers 3. Ovary 3-celled. Flowers small.

TRIBE I. EPIDENDRÆ (see p. 667).

1. **OBERONIA**, Lindl.

Tufted epiphytes. *Leaves* distichous, equitant, ensiform (very rarely terete). *Flowers* very minute in dense subcylindric spikes or racemes. *Sepals* broadly ovate or oblong, subequal. *Petals* smaller. *Lip* sessile, concave, entire or 2-4-lobed. *Column* very short; anther terminal, incumbent; pollinia 4, waxy, cohering by a viscus.—Species about 60, Tropical Asiatic, Australian and Pacific.

The flowers are generally 2 to each bract, which is lanceolate and free or broader and more or less convolute, sometimes very broad and forming a tube round both flowers; the upper flower has often a sheathing obtuse bracteole.—The genus wants a careful study of living specimens. I am far from satisfied with the following delimitation of species, the specimens being in some cases quite insufficient for a sure diagnosis.

Sect. I. **Oberonia** PROPER. *Stem* very short, rarely 2-4 in. *Leaves* ensiform, chiefly radical or subradical. *Sepals* subequal.

* Side lobes or all the lobes of lip deeply toothed or lacinate.

1. **O. iridifolia**, Lindl. *Gen. & Sp. Orchid.* 15; *Fol. Orchid. Oberon.* 1; stem short, leaves 3-5 in. broadly ensiform, spike long slender decurved, flowers not whorled sessile, bracts broad erose convolute sheathing the ovary, petals oblong erose, lip more or less quadrate deeply toothed tip broadly 2-fid. *Wall. Cat.* 1948/2 (in part). *Malaxis iridifolia*, *Reichb. f. in Walp. Ann.* vi. 208.