

- 2 Perianth tube c. as long as the lobes . . . . . 3
- 3 Perianth lobes with tapering undulate tips. Leaves linear, up to 75 cm long, 5–15 mm wide. Flowers in a distichous spike. Perianth greenish white to cream, 9–12 cm long. Garden escape near habitation. Introd. from S. Africa . . . . . \***G. undulatus** L.
- 3 Perianth lobes acute without tapering tips. Leaves linear, up to 60 cm long, 6–20 mm wide. Flowers in a distichous spike. Perianth white to pink or lavender, 5–8 cm long. Garden escape near habitation. Introd. from S. Africa . . . . . \***G. carneus** D.Delaroche

### 18 Chasmanthe N.E.Br.

1 species naturalized Aust.; NSW, Vic., Tas., S.A., WA

#### *One species in the area*

Erect, perennial herb with corms. Leaves linear, c. 90 cm long and 3 cm wide. Flowers irregular, oblique, in spikes c. 25 cm long; spathes scarious. Perianth segments red, connate into a curved tube c. 4 cm long, narrow below, widening abruptly c. 1 cm above the ovary; inner lobes somewhat larger than outer ones; posterior lobe largest. Stamens arranged onto the upper side of the flower. Stylar branches entire, only slightly dilated. Capsule ovoid. Garden escape near habitation. Introd. from S. Africa. Fl. summer . . . . . \***C. floribunda** (Salisb.) N.E.Br.

### 19 Aristea Sol. ex Aiton

1 species naturalized Aust.; NSW, Vic.

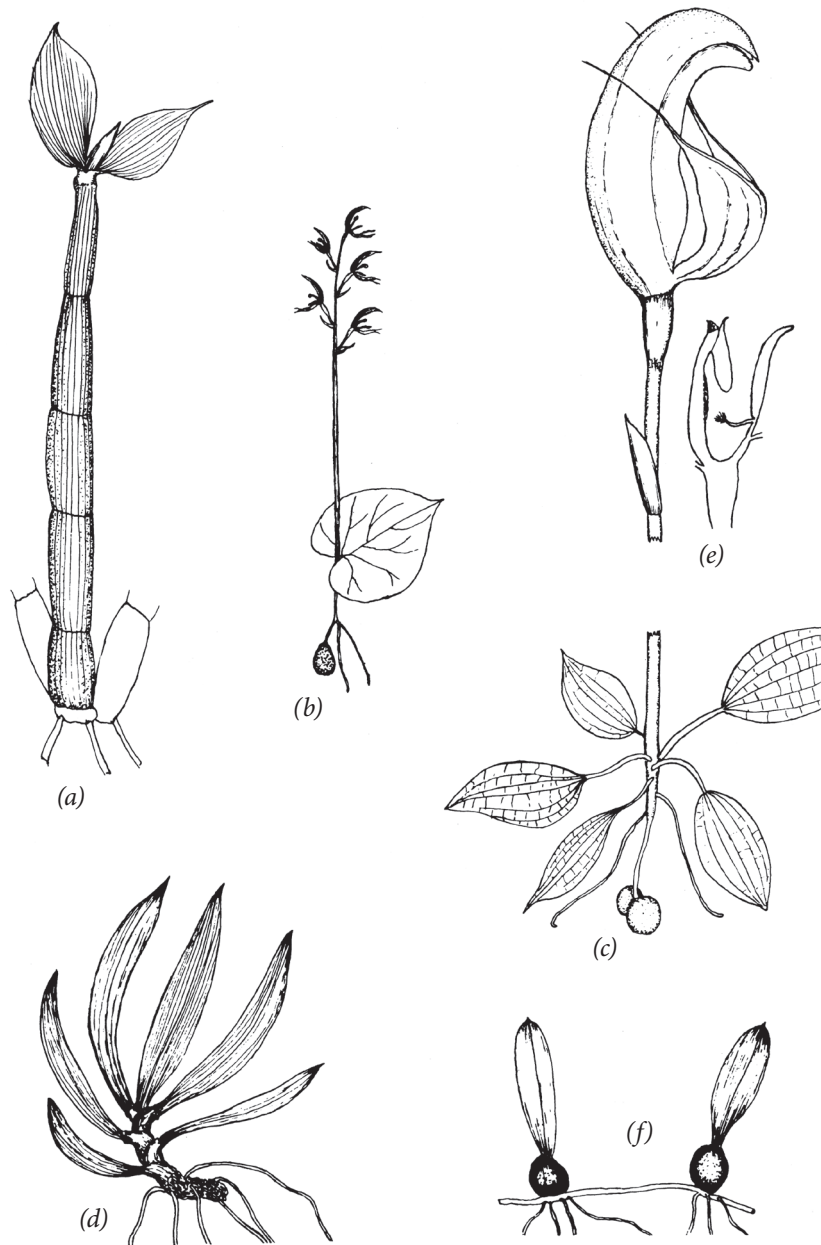
#### *One species in the area*

Erect herb to 70 cm high. Leaves linear 10–60 cm long, 5–11 mm wide, bases sometimes red. Inflorescence a loose panicle, spathe bracts brown acuminate 5–14 mm long. Flowers on pedicels 2–10 mm long, opening for only a few hours. Perianth bright blue tube short and green. Stamens exerted, filaments free. Style with 3 branches. Fruit an oblong capsule c. 20 mm long. Occasional garden escape northern suburbs. Introd. from Africa. . . . . \***A. ecklonii** Baker

## 176 ORCHIDACEAE

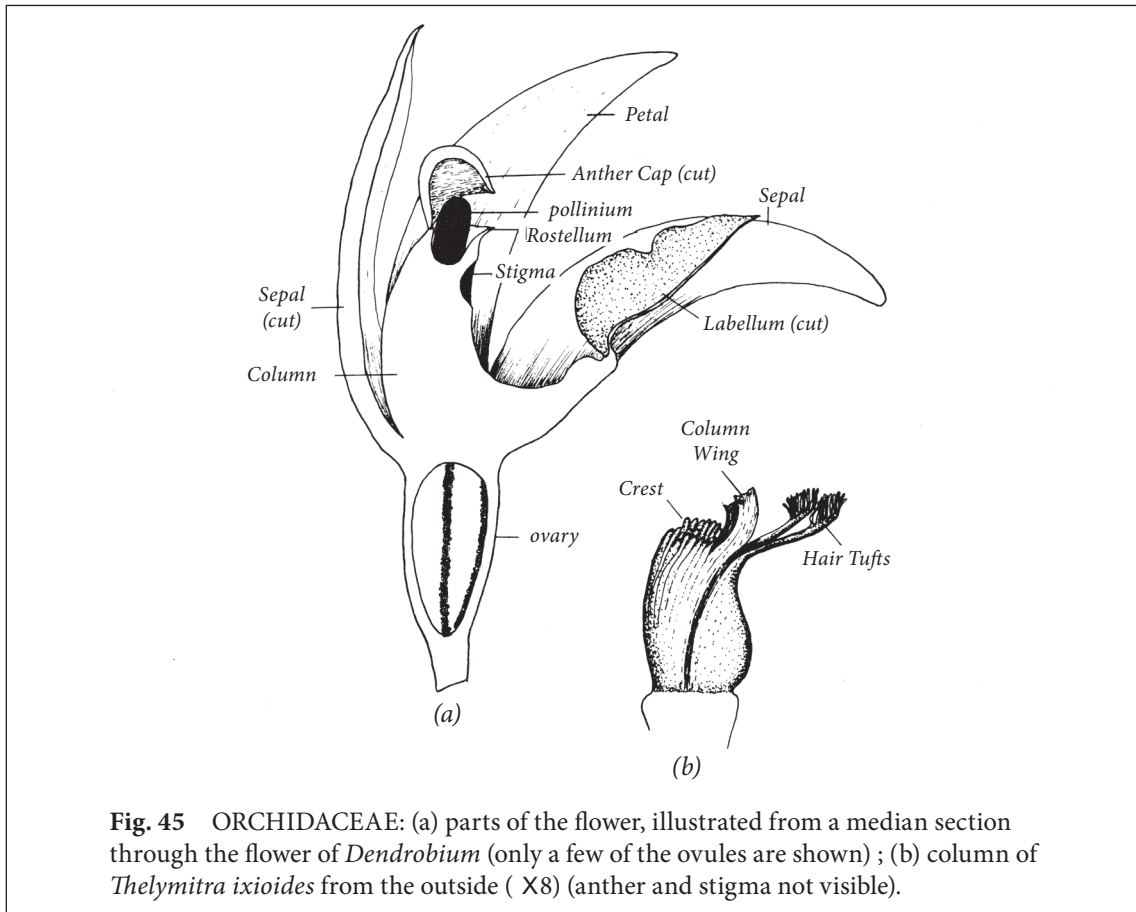
Perennial herbs; epiphytic or terrestrial; some terrestrial species saprophytic. Epiphytes with creeping stems or rhizomes and fibrous roots with *velamen*, or with erect or pendulous stems and without rhizomes; *pseudobulbs* sometimes present. Terrestrial or saprophytic species with fleshy rhizomes or tubers (Fig. 44). Leaves usually alternate or basal, sometimes reduced to scales. Inflorescence a spike, raceme or panicle or the flower solitary. Flowers bisexual, usually very irregular, often twisted through 180° (*resupinate*). Sepals 3, often similar to the lateral petals but usually larger. Petals 3, alternating with the sepals; one of them (the *labellum*, originally nearest the floral axis but often remote from the axis as a result of resupination) usually different in size, shape and colour from the other 2. Stamens, stigma and style fused into a single, central structure (the *column*) (Fig. 44). Anther 1 (or 2 in genera not in the area), usually with 2 pollen sacs, sunken in the apex of the column; pollen waxy, granular, rarely mealy, aggregated into 1, 2 or 4 pairs of pollen masses (*pollinia*) (pollinia absent in some genera not in the area); pollinia usually lying free in the apical cavity of the column and sometimes held together by a thin thread which later elongates into a stalk (*caudicle*). Stigma convex or concave, in front of the column, viscid and in the upper margin usually produced into a platform-like appendage (the *rostellum*). Ovary inferior, 3-carpellary, 1-locular; placentas 3, parietal. Fruit a capsule dehiscent longitudinally. Seeds minute, extremely numerous. c. 788 gen.; worldwide, the epiphytes chiefly trop. and subtrop.

FIGURE 44



**Fig. 44** ORCHIDACEAE: (a) *Dendrobium aemulum*, showing ajointed pseudobulb; (b) *Acianthus exsertus*, with a single cordate leaf and smaller tuber; (c) *Pterostylis baptistii*, with several leaves and 2 tubers; (d) *Sarcochilus falcatus*; (e) *Pterostylis* sp. flower, insert column and labellum, the former with pendulous wings, the latter with a brush-like appendate; (f) *Bulbophyllum exiguum*.

## FIGURE 45



**Fig. 45** ORCHIDACEAE: (a) parts of the flower, illustrated from a median section through the flower of *Dendrobium* (only a few of the ovules are shown) ; (b) column of *Thelymitra ixiooides* from the outside ( X8) (anther and stigma not visible).

Colour forms, hybrids, and some ill-defined varieties are not included in the key below.

### Key to the genera

- 1 Plants epiphytic on trees, logs, rocks. . . . . **GROUP 1**
- 1 Plants terrestrial with tubers or rhizomes. Leaves basal and/or cauline, large or scale-like. . . . . 2
- 2 Saprophytes. Leaves scale-like . . . . . **GROUP 2**
- 2 Autotrophs with green leaves and stems; stems sometimes coloured. Leaves sometimes absent at flowering time . . . . . 3
- 3 Leaves 2 or more. Stem-bracts present or absent . . . . . **GROUP 3**
- 3 Leaves 1 or none or leaves absent at flowering time. Stem-bracts present or absent . . . . . **GROUP 4**

### Group 1 Epiphytes

- 1 Leaves short, usually no more than 5 times longer than broad . . . . . 2
- 1 Leaves linear, many times longer than broad . . . . . 9
- 2 Pseudobulbs usually present. Lateral sepals dilated at the base and united with the projecting foot of the column to form a spur. Labellum not spurred . . . . . 3
- 2 Pseudobulbs absent . . . . . 4
- 3 Pseudobulbs ± globular (Fig. 44). Labellum entire . . . . . **34 BULBOPHYLLUM**
- 3 Pseudobulbs elongate, jointed (Fig. 44). Labellum 3-lobed . . . . . **33 DENDROBIUM**

4 Saprophytes with scale-leaves only. Stems climbing . . . . .	.27	ERYTHRORCHIS
4 Autotrophs with green leaves . . . . .	5	
5 Leaves leathery . . . . .	6	
5 Leaves membranous or thick and/or succulent and ribbed or warted . . . . .	8	
6 Labellum articulate on the column foot . . . . .	.37	SARCOCHILUS
6 Labellum adnate to the column foot . . . . .	7	
7 Callus absent on posterior of labellum spur . . . . .	.39	PAPILLILABIUM
7 Callus present on posterior of labellum spur . . . . .	.38	PLECTORRHIZA
8 Leaves membranous . . . . .	15	RIMACOLA
8 Leaves thick and/or succulent, ribbed or warted . . . . .	.33	DENDROBIUM
9 Leaves not basal, terete. . . . .	.33	DENDROBIUM
9 Leaves basal, flat or folded. Plants tufted . . . . .	10	
10 Column elongate, incurved, shortly winged at the top . . . . .	31	CESTICHIS
10 Column erect or slightly incurved at the top, semi-terete . . . . .	.36	CYMBIDIUM

## Group 2

### Saprophytes

1 Climbing plants with short sucker-like aerial roots . . . . .	.27	ERYTHRORCHIS
1 Plants not climbing. . . . .	2	
2 Plants flowering underground . . . . .	29	RHIZANTHELLA
2 Plants flowering above the ground . . . . .	3	
3 Sepals and petals whitish or brown, fused together into a 5-lobed tube . . . . .	28	GASTRODIA
3 Sepals and petals free . . . . .	4	
4 Petals reddish to pink . . . . .	.35	DIPODIUM
4 Petals yellow . . . . .	.25	CRYPTOSTYLIS

## Group 3

### Terrestrial autotrophs with 2 or more leaves

1 Leaves large and cauline, leathery, spreading, 1.5–12 cm long . . . . .	40	EPIDENDRUM
1 Leaves not as above. . . . .	2	
2 Dorsal sepal and lateral petals fused to form a hood (Fig. 44) . . . . .	26	PTEROSTYLIS
2 Hood absent. . . . .	2	
3 Labellum 3-lobed near the base. . . . .	4	
3 Labellum not 3-lobed near the base . . . . .	5	
4 Petals well developed, spreading or recurved . . . . .	.3	DIURIS
4 Petals minute, incurved over the column . . . . .	.4	ORTHO CERAS
5 Flower solitary . . . . .	11	CHILOGLOTTIS
5 Flowers several to many . . . . .	6	
6 Flowers not resupinate. . . . .	25	CRYPTOSTYLIS
6 Flowers resupinate . . . . .	7	
7 Leaves prostrate on the ground, usually absent at flowering time . . . . .	10	ARTHROCHILUS
7 Leaves not prostrate . . . . .	8	

8 Basal leaves petiolate; cauline leaves sheathing the stem . . . . .	16 RIMACOLA
8 Petioles absent . . . . .	9
9 Flowers 2–5. Perianth reddish to purplish-brown outside, white inside. . . . .	19 BURNETTIA
9 Flowers many in a spike. Perianth pink. Labellum white . . . . .	30 SPIRANTHES

### Group 4

#### Terrestrial autotrophs with 1 leaf or none

1 Leaves hairy. Labellum without hairs, or with calli . . . . .	2
1 Leaves glabrous, or absent at flowering time . . . . .	4
2 Labellum sitting at ± right angle to the column. Labellum sessile, with calli at the base only . . . . .	23 GLOSSODIA
2 Labellum standing erect against the column, shortly clawed, with calli along the lamina . . . . .	3
3 Flowers blue. . . . .	20 CYANICULA
3 Flowers not blue . . . . .	21 CALADENIA
4 Leaves absent at flowering time. . . . .	5
4 Leaves present at flowering time, glabrous . . . . .	6
5 Flowers hooded. . . . .	26 PTEROSTYLIS
5 Flowers not hooded. Petals and sepals reflexed. . . . .	10 ARTHROCHILUS
6 Stems glandular-pubescent. Labellum covered with long hairs. . . . .	14 ERIOCHILUS
6 Stems glabrous . . . . .	7
7 Flower solitary . . . . .	8
7 Flowers 2 or more . . . . .	10
8 Leaf linear. . . . .	8 CALEANA
8 Leaf ovate orbicular or broad-lanceolate . . . . .	9
9 Dorsal sepal and labellum greatly developed; the outer perianth segments inconspicuous . . . . .	24 CORYBAS
9 Perianth segments unequal but all well developed . . . . .	22 ADENOCHILUS
10 Leaf orbicular to broad-lanceolate (Fig. 44) . . . . .	11
10 Leaf linear to narrow-lanceolate . . . . .	15
11 Stem-bracts absent . . . . .	12
11 Stem-bracts 1–3 . . . . .	14
12 Lateral petals more or less as long as sepals. Leaf basal, lower surface green . . . . .	14 CYRTOSTYLIS
12 Lateral petals much shorter than sepals. Leaf cauline, lower surface reddish-purple or green . . . . .	13
13 Labellum with 2 well developed basal glands . . . . .	12 ACIANTHUS
13 Labellum without well developed basal glands . . . . .	13 ACIANTHELLA
14 Leaf ovate-cordate. Dorsal sepal hooded. . . . .	18 PYRORCHIS
14 Leaf ovate-lanceolate. Dorsal sepal concave . . . . .	19 BURNETTIA
15 Labellum 2–3 times as long as the other perianth segments, covered with long hairs . . . . .	2 CALOCHILUS
15 Labellum not conspicuously longer than the other perianth segments. . . . .	16
16 Perianth segments similar in shape and size; perianth almost radially symmetrical . . . . .	1 THELYMITRA
16 Flower conspicuously irregular . . . . .	17
17 Flowers few (usually 3–5) . . . . .	18
17 Flowers numerous (usually more than 10). . . . .	20

18 Dorsal sepal conspicuously hooded. . . . .	17	LYPERANTHUS
18 Dorsal sepal erect, incurved. . . . .	19	
19 Labellum smooth, shining. . . . .	8	CALEANA
19 Labellum tuberculate. . . . .	9	PARACALEANA
20 Labellum 3-lobed; the central lobe bifid . . . . .	32	CALANTHE
20 Labellum otherwise. . . . .	21	
21 Flowers resupinate. Dorsal sepal hooded . . . . .	5	MICROTIS
21 Flowers not resupinate. Dorsal sepal concave . . . . .	22	
22 Free part of leaf terete. Labellum not articulate on a claw . . . . .	6	PRASOPHYLLUM
22 Free part of leaf flattened. Labellum articulate on a claw . . . . .	7	GENOPLESIMUM

## 1 *Thelymitra* J.R.Forst. & G.Forst.

*Sun Orchids*

c. 37 species in Aust. (c. 23 endemic); all states and territories except NT

Terrestrial herbs usually glabrous, with ovoid tubers. Leaf solitary, narrow, channelled, of varying length, stem-clasping in its lower portion, with 1–2 foliaceous bracts above it. Flowers in a terminal raceme, rarely solitary, usually expanding only on bright sunny days. Perianth almost regular; the labellum differing only slightly from the paired petals; sepals petaloid. Column rather short and stout, prominently winged (Fig. 45 b); the wings united at the base in the front; then either expanding upward behind the anther, or extending only on one side of the anther; in all cases each wing is furnished with a lateral lobe, which in many species terminates in a conspicuous tuft of hairs; the apex of the column wings is sometimes referred to as a *hood*. Anther erect or bent forward between the lobes of the wings. Pollinia granular.

### *Key to the species*

1 Lateral lobes of the column-wings terminating in hair tufts (Fig. 45 b) . . . . .	2
1 Column-wings without hair tufts . . . . .	15
2 Hair tufts yellow or cream. . . . .	3
2 Hair tufts white, pink or blue. . . . .	5
3 Perianth bright rose-pink, c. 25 mm diam. Hair tufts on column wings yellowish. Column between the lateral arms crested. Plant up to 40 cm high. Flowers 2–4. Coast. Fl. Sept.–Oct. (A hybrid between <i>T. ixiooides</i> and <i>T. carnea</i> ). . . . .	<b>T. X irregularis</b> Nicholls
3 Perianth blue to purplish occasionally white . . . . .	4
4 Column between the lateral arms hooded, deeply notched. Hair tufts on column arms sparse, 2. Perianth deep blue to mauve. Hair tufts on lateral arms sparse. Uncommon. Bundanoon. Fl. Nov.–Dec. . . . .	<b>T. holmesii</b> Nicholls
4 Column between the lateral arms not hooded, warty or toothed with fringed lobes. Hair tufts on column arms dense, 3; the middle one facing the labellum; the hairs yellow. Perianth pale or dark lilac. Plant up to 60 cm high. Leaf leathery, keeled. Flowers 3–10. Blue Mts Damp situations. Fl. Dec.–Feb. . . . .	<b>T. circumsepta</b> Fitzg.
5 Column between the lateral arms tuberculate, dentate or fringed with glands. . . . .	6
5 Column between the lateral arms entire, emarginate or deeply v-cleft . . . . .	8
6 Perianth with spots. Flowers 30–40 mm diam. Plants c. 70 cm high. Middle lobe of the column papillose. The upper 3 segments with darker spots; segments up to c. 20 mm long. Column up to 5 mm long. Plants c. 70 cm high. Flowers few to numerous. Widespread. DSF and heath. Fl. Sept.–Nov. <i>Dotted Sun Orchid</i> (hybrids occur between this species, <i>T. nuda</i> and <i>T. pauciflora</i> giving rise to <i>T. X merraniae</i> Nicholls and <i>T. X truncata</i> R.S.Rogers respectively. Both have blue–purple flowers but show variation in the characters of the column.) . . . . .	<b>T. ixiooides</b> Sw. var. <b>ixiooides</b>

- 6 Perianth without spots. . . . . 7
- 7 Leaf 5–10 mm wide. Perianth pale to dark blue, c. 20 mm diam., 1–6 flowers per inflorescence. Perianth segments 8–12 mm long, 4.5–5.5 mm wide. Plants to 40 cm high. Coastal. Fl. Oct.–Dec. . . . . **T. longiloba** D.L.Jones
- 7 Leaf 10–20 mm wide. Perianth blue or purple, c. 30 mm diam, 7–30 flowers per inflorescence. Perianth segments 12–17 mm long, 6–10 mm wide. Plant up to 90 cm high. Mainly coastal to lower Blue Mts DSF and heath. Fl. Oct.–Jan. *Tall Sun Orchid* . . . . . **T. media** R.Br. var. **media**
- 8 Perianth segments less than 11 mm long. . . . . 9
- 8 Perianth segments 15 mm long or longer . . . . . 13
- 9 Plants glaucous. Lower sterile bracts leaf-like, up to 4 in number. Post-anther lobe semi-cylindrical and widely open on the lower side. Plants to 45 cm high. Uncommon. Heath and grasslands. Fl. Oct.–Nov. . . . . **T. planicola** Jeanes
- 9 Plants without the above combination of characters. Lower sterile bracts not leaf-like . . . . . 10
- 10 Leaf lanceolate, flat, thin, less than half the length of the inflorescence, often with purplish markings. Usually 3–10-flowered. Perianth purple, rarely pink or white. Column between lateral arms emarginate to deeply and irregularly split into lobes, brown or reddish orange. Plant to 60 cm high. Widespread. Fl. Sept.–Nov. . . . . **T. brevifolia** Jeanes
- 10 Leaf linear to lanceolate, fleshy or thin, usually more than half the length of the inflorescence. Column between lateral arms not irregularly split, usually brown to black with a yellow tip. Hair tufts on the column pointing upward. Perianth white, blue, pink or purple. . . . . 11
- 11 Leaf thin,  $\geq 75\%$  the length of the inflorescence. Flowers 2–10, purplish-blue. Lateral lobes of the column 1–1.5 mm long. Column between the lateral arms shallowly bi-lobed at apex. WSF. Coastal. Fl. June – Oct. . . . . **T. angustifolia** R.Br.
- 11 Leaf leathery or fleshy,  $< 75\%$  the length of the inflorescence . . . . . 12
- 12 Leaf leathery. Flowers 4–10, mauve or deep purplish-blue. Lateral lobes of the column  $\geq 1.2$  mm long. Column between lateral arms deeply bi-lobed at apex. Widespread. Fl. Sept.–Nov. . . . . **T. peniculata** Jeanes
- 12 Leaf fleshy. Flowers 1–3, pale blue, occasionally pink or white. Lateral arms of the column  $\leq 1$  mm long. Column between lateral arms entire to emarginate. Widespread. Fl. Sept.–Nov. *Slender Sun Orchid* **T. pauciflora** R.Br.
- 13 Hairs on lateral arms of the column forming a ciliate margin to the arm, horizontal. Plant up to 45 cm high. Flowers 3–15. Perianth segments usually blue, up to 20 mm long. Widespread. Open forest and heath. Fl. Sept.–Nov. . . . . **T. nuda** R.Br.
- 13 Hairs on lateral arms of the column in dense tufts . . . . . 14
- 14 Hairs on lateral arms of the column white to yellowish. Column between the lateral arms emarginate. Flowers fragrant, 3–8. Perianth usually mauve, up to c. 16 mm long. Plant up to 30 cm high. Widespread in the north of the area. DSF and heath. Fl. Sept.–Nov. . . . . **T. aristata** Lindl.
- 14 Hairs on lateral arms of the column mauve. Column between the lateral arms notched. Flowers fragrant, 2–20. Perianth segments blue or white to deep violet, to 20 mm long. Plant to 70 cm high. Coast and adjacent plateaus. DSF in wet sites and wet heath. Fl. Nov.–Jan. . . . . **T. malvina** M.A.Clem., D.L.Jones & Molloy
- 15 Perianth segments deep pink to cream or yellow . . . . . 16
- 15 Perianth segments blue with darker veins or rarely white to pale pink. . . . . 17
- 16 Perianth usually more than 8 mm long. Outer perianth segments acute ending in a fine point. Column to 5 mm long. Lateral arms of column with long, warty teeth. Plant up to 40 cm high. Flowers 1–4. Uncommon in the area. Heath and DSF. Fl. Sept.–Nov. *Red Sun Orchid* . . . . . **T. rubra** Fitzg.



- 16 Perianth up to 7 mm long. Outer perianth segments obtuse or with very short points. Column up to 4 mm long. Lateral arms of column without warty teeth. Plant up to 45 cm high. Flowers 1–4. Widespread. Open communities, often in disturbed sites. Fl. Sept.–Nov. *Pink Sun Orchid* . . . . . **T. carnea** R.Br.
- 17 Perianth segments 16–25 mm long. Column up to 8 mm long; lateral arms, not lobed, twisted or tightly coiled. Plant up to 70 cm high. Flowers 1–6. Blue Mts on Ss. Damp situations. Fl. Oct.–Dec. *Veined Sun Orchid* . . . . . **T. venosa** R.Br.
- 17 Perianth segments up to 16 mm long. Column up to 6 mm long; lateral arms often lobed, twisted or loosely coiled. Plant up to 50 cm high. Flowers 1–6. Blue Mts Damp situations at high altitudes. Fl. Nov.–Mar. . . . . **T. cyanea** R.Br.

## 2 *Calochilus* R.Br.

*Beardies*

c. 28 species in Aust. (25 endemic, 3 native); all states and territories

Terrestrial, glabrous herbs with ovoid tubers. Leaf basal, usually long and narrow, conspicuously channelled; loose stem-bracts 1–3. Flowers few–c. 15, in a terminal raceme. Perianth green with red or purplish striae. Dorsal sepal broad, ± hooded; lateral sepals narrower, acute, spreading. Petals much shorter, broad, usually erect. Labellum longer than the sepals, sessile, undivided, with an oblong basal portion and triangular or almost trapezoid lamina most frequently ending in a ribbony filament and with long brilliant purplish or red hairs. Column short and broad, with wide wings. Anther terminal, incumbent or horizontal, with an obtuse beak, with 2 pollen sacs. Pollinia 2 or 4, deeply bilobed; pollen granular.

### *Key to the species*

- 1 Column without basal glands. Plants 16–90 cm high. Leaf 10–27 cm long. Stem-bracts 2–4. Flowers 2–15. Perianth green; labellum 2 cm long, beset with red hairs. Widespread. Swamps or dry land. Fl. Sept.–Oct. . . . . **C. paludosus** R.Br.
- 1 Column with a dark gland on either side at the base. . . . . 2
- 2 Column glands connected by a prominent coloured ridge. Plants 18–36 cm high. Leaf c. 20 cm long. Stem-bracts 2–4. Flowers 2–8. Labellum 2 cm long, beset with purple hairs. Open forest. Fl. Sept.–Nov. (Occasionally a specimen occurs which has a labellum without calli or hairs. Here it is considered to be a variant of this species but is recognized as *C.imberbis* R.S.Rogers by some) . . . **C. robertsonii** Benth.
- 2 Column glands not connected by a coloured ridge or band or band present but obscure. . . . . 3
- 3 Flowers large. Labellum to 45 mm long, tip elongated and glabrous. Perianth pale yellow-green to golden bronze. Leaf to 50 cm long and 5 mm wide. Plants often spindly, to 60 cm high. Coastal heath. North from Gosford. Fl. winter–spring . . . . . **C. grandiflorus** (Benth.) Domin
- 3 Labellum to 35 mm long, clothed with calli and hairs for nearly all its length. Perianth green with purple striae. . . . . 4
- 4 Labellum c. 20 mm long, narrow, becoming filiform towards the apex, densely beset with long reddish-purple hairs almost to the tip. Plants 20–35 cm high. Stem-bracts 2. Flowers 2–8. Woy Woy; Mt Irvine. Open forest. Fl. midsummer . . . . . **C. gracillimus** Rupp
- 4 Labellum c. 15 mm long, two smooth blue–purple plates at top; almost lanceolate, or with a short glabrous ribbon-like prolongation of the apex, rather sparsely beset with coppery red or reddish blue hairs. Leaf erect, 12–30 cm long, sometimes absent. Stem-bracts 1–3, 5–8 cm long. Plant up to 60 cm high. Flowers 7–15. Perianth yellowish-green with reddish-brown or purplish markings. Widespread. WSF. Fl. Sept.–Nov. . . . . **C. campestris** R.Br.

*Calochilus therophilis* D.L.Jones and *C. montanus* D.L.Jones as described by D.Jones (2006) may occur in the region. They are found in montane habitats above 700 m.



### 3 *Diuris* Sm.

45 species endemic Aust.; all states and territories except NT

Terrestrial glabrous herbs with ovoid tubers. Leaves few or occasionally numerous, linear, basal, passing into sheathing bracts above. Flowers several in a terminal raceme, usually with long pedicels and floral bracts. Dorsal sepal erect or reflexed, broad, its basal portion embracing the column. Lateral sepals  $\pm$  deflexed, usually linear, most frequently green, but occasionally petaloid in shape and colour, sometimes very long. Petals broad, usually on linear claws. Labellum deeply 3-lobed; the middle lobe often much longer and broader than the lateral lobes. Column consisting of a separate stamen and style. Stamen with 2 wings arising from a very short filament, and an anther bearing 2 pollinia facing the back of the style. Style broad, with a viscid disc behind on which the pollinia stick; stigma and rostellum facing the labellum.

#### *Key to the species*

- 1 Lateral lobes of the labellum c. equal to or longer than the middle lobe. . . . . 2
- 1 Lateral lobes of the labellum smaller than the middle lobe . . . . . 4
- 2 Flowers orange to golden, 2–5 per spike, 25 mm diam., usually without dark markings, c Lateral sepals 8–13 mm long, c. as long as the petals. Plant up to 50 cm high. Blue Mts; Cumberland Plain. Open forest. Endangered. Fl. spring–summer. *Buttercup Double-tail*. . . . . **D. aequalis** F.Muell. ex Fitzg.
- 2 Flowers yellow, with darker markings . . . . . 3
- 3 Perianth spotted with brown chiefly on the back. Lateral sepals 14–16 mm long; dorsal sepal 7–10 mm long. Flowers 2–8. Plant up to 30 cm high. Leaves 2–3. Widespread. Open forest. Fl. July–Sept. *Leopard Orchid* or *Spotted Double-tail*. . . . . **D. maculata** Sm.
- 3 Perianth heavily diffused and blotched with darker colour. Lateral sepals 8–18 mm long; dorsal sepal 5–12 mm long. Flowers 1–10. Plant up to 50 cm high. Leaves 2–3. Widespread. Open forest. Fl. spring–early summer. *Leopard Orchid* . . . . . **D. pardina** Lindl.
- 4 Perianth white to purple. . . . . 5
- 4 Perianth yellow to orange sometimes with purplish markings . . . . . 7
- 5 Flowers more than 40 mm diam. Perianth purplish to lilac. Lateral sepals 30–90 mm long, more than twice as long as the petals. Petals 10–30 mm long. Plants up to 35 cm high, with 2–3 leaves. Flowers 2–10. Widespread. Open forest. *Purple Donkey Orchid* . . . . . **D. punctata** Sm. var. **punctata**
- 5 Flowers up to 40 mm diam. . . . . 6
- 6 Perianth mauve with darker markings. Lateral sepals 35–65 mm long, usually more than twice as long as the sepals. Petals 6–12 mm long. Plants up to 40 cm high, with 1–2 leaves. Blue Mts Open forest. Fl. spring–summer. . . . . **D. dendrobioides** Fitzg.
- 6 Perianth white with purple markings. Lateral sepals 20–40 mm long. Petals 10–22 mm long. Plants up to 40 cm high, with 1–3 leaves. Coast in north of the area. Open forest . . . . . **D. alba** R.Br.
- 7 Lateral sepals much longer than the petals, c. 30 mm long, green. Petals 17–18 mm long. Perianth yellow with purple splashes about the centre; petal claws purple. Plant up to 42 cm high, with 2–3 leaves. Flowers 3–6. Blue Mts Open forest. Vulnerable. Fl. Oct.–Nov. . . . . **D. tricolor** Fitzg.
- 7 Lateral sepals c. as long as the petals . . . . . 8
- 8 Lateral sepals crossed beneath the labellum . . . . . 9
- 8 Lateral sepals parallel or divergent . . . . . 11
- 9 Peduncles with c. 5 leafy bracts 2–5 cm long. Perianth yellow, with a few dark brown spots; the dorsal sepal with 2 brown blotches at the base; the lateral sepals brown with green at the ends, c. 10 mm long. Gladesville in 1889. Endangered. Fl. Aug.–Sept. . . . . **D. bracteata** Fitzg.
- 9 Peduncles with 2–3 bracts which are not leafy . . . . . 10
- 10 Perianth orange to golden yellow. Dorsal sepal broad-ovate, 7–14 mm wide. Plant 15–60 cm high. Leaves 2. Flowers 2–5. Widespread. Open forest and heath. Fl. Aug.–Oct. . . . . **D. aurea** Sm.

- 10 Perianth lemon yellow. Dorsal sepal ovate, c. 5 mm wide. Plant up to 60 cm high. Leaves 2. Flowers 2–8. Blue Mts Open forest. Fl. Oct . . . . . **D. platichila** Fitzg.
- 11 Petals erect or divergent . . . . . 12
- 11 Petals drooping . . . . . 13
- 12 Labellum with a single callus ridge. Plant up to 70 cm high, with 2–3 leaves. Flowers 3–6. Perianth yellow with brown markings; the lateral sepals green; dorsal sepal c. 20 mm long. Petals 20–30 mm long. Widespread. Open forest. Fl. Aug.–Nov. *Tiger Orchid* . . . . . **D. sulphurea** R.Br.
- 12 Labellum with two callus ridges. Plant up to 40 cm high, with 2–3 leaves. Flowers 6–10. Perianth yellow with a few darker markings. Lateral sepals 12–15 mm long; dorsal sepal 9–11 mm long. Petals 8–12 mm long. Coast in north of the area. Open forest. Vulnerable. Fl. July–Sept . . . . . **D. praecox** D.L.Jones
- 13 Leaves 2. Perianth clear yellow, with orange labellum, with green lateral sepals. Lateral sepals 12–20 mm long, directed upwards. Plant up to 20 cm high. Flowers 1–2. Recorded from Hawkesbury River area. Open forest. Endangered. Fl. spring–summer . . . . . **D. pedunculata** R.Br.
- 13 Leaves 3–9. Perianth clear yellow. Lateral sepals 12–25 mm long, brownish-green, directed upwards. Petals 8–20 mm long. Plant up to 40 cm high. Flowers 1–4. Widespread. Open forest. Fl. winter–spring. *Snake Orchid*. . . . . **D. chryseopsis** D.L.Jones

HYBRIDS: Many named hybrids between species of *Diuris* occur. *D. X polymorpha* is a hybrid between *D. chryseopsis* and *D. platichila* it has a light yellow perianth with dark marks on the sepals and labellum and occurs in the Blue Mts *D. X nebulosa* is a hybrid between *D. punctata* and *D. aurea* it has a pink and yellow perianth and labellum and occurs across the region.

#### 4 **Orthoceras** R.Br.

1 species native Aust.; Qld, NSW, Vic., Tas., S.A.

##### *Monotypic genus*

Terrestrial, glabrous herb 20–60 cm high, with ovoid tubers. Leaves basal, linear, 2–5, channelled below. Flowers 1–9, with large floral bracts, almost sessile, in a terminal raceme, or rarely solitary. Dorsal sepal erect, incurved, hooded, 10–12 mm long; lateral sepals linear, long and straight, erect or spreading, brown or green. Petals very short, blunt, erect. Labellum sessile, 9–12 mm long, 3-lobed, recurved; lateral lobes much shorter than the middle lobe. Column short, with 2 wings which are not as high as the anther. Anther incurved, tapering to an obtuse point, with 2 pollen sacs; pollinia 2, bilobed, mealy, without a caudicle. Stigma erect in front of the anther. Chiefly sandy soils. *Horned Orchid*, *Bird's-mouth Orchid* . . . . . **O. strictum** R.Br.

#### 5 **Microtis** R.Br.

*Onion Orchids*

c. 12 species in Aust.; all states and territories except NT

Terrestrial, glabrous herbs with globular tubers. Leaf solitary, sheathing from the base of the stem to half or two-thirds of the distance to the base of the inflorescence, then extending into a free terete lamina. Flowers very small, numerous in a terminal spike. Perianth green. Dorsal sepal ± hooded, 2–3 mm long. Lateral sepals lanceolate to oblong, not appreciably longer than the dorsal one, spreading or much reflexed. Petals narrower and not much shorter than the sepals, spreading or incurved. Labellum sessile, not lobed, very obtuse, occasionally emarginate, usually oblong, deflexed or recurved, with raised callosities on the upper surface. Column very short and broad with 2 wings or auricles which are not as high as the apex of the anther. Anther erect, with 2 pollen sacs; pollinia 2, bilobed, granular; caudicle usually present.

##### *Key to the species*

- 1 Upper surface of the labellum with 2 calli at the base and none at the apex. Margin of labellum entire or ± crenulate, tip apiculate; lamina granulated near the tip, with 2 cushion-like elevations towards the base and 2 inconspicuous horizontal glands at the extreme base (these may be absent). Plant 25–60 cm high. Widespread. Fl. spring – summer . . . . . **M. parviflora** R.Br.

- 1 Upper surface of the labellum with 2 callosities at the base and 1 at the apex . . . . . 2
- 2 Petals spreading below dorsal sepal. Labellum at least  $\frac{2}{3}$  as long as ovary, 3–5 mm long, emarginate, margins wavy. Flowers well spaced, yellowish-green to bright green. Petals more than 2 mm long. Lateral sepals spreading, recurved or tightly revolute. Plant up to 50 cm high (usually much less). Widespread. Fl. Oct.–Nov. *Scented Onion Orchid* . . . . . **M. rara** R.Br.
- 2 Petals erect held within the dorsal sepal. Labellum less than half as long as ovary. Flowers crowded, green. . . . . 3
- 3 Calli at the base of the labellum not united. Petals 2 mm long. Labellum 1–3 mm long, emarginate. Lateral sepals reflexed or rolled. Ovary Plant 15–60 cm high. Widespread. Chiefly in grassland. Fl. Sept.–Nov. *Common Onion Orchid*. . . . . **M. unifolia** (G.Forst.) Rchb.f.
- 3 Calli at the base of labellum united. Petals less than 2 mm long. Labellum 1.6–1.8 mm long, emarginate, papillose on margin. Plant to 60 cm high. Known only from Mona Vale. Shale. Woodland. Endangered. Fl. May–Oct. . . . . **M. angusii** D.L. Jones

## 6 Prasophyllum R.Br.

### *Leek Orchids*

58 species in Aust. (57 endemic, 1 native); all states and territories except NT

Terrestrial glabrous herbs, usually with ovoid tubers. Leaf solitary, closely sheathing the stem for half to the whole of the distance to the base of the inflorescence, then produced into a terete lamina. Flowers not resupinate, usually numerous but occasionally few, in a terminal spike. Dorsal sepal  $\pm$  lanceolate, concave on the inner side, often recurved; lateral sepals usually narrower but quite as long as the dorsal one, free or  $\pm$  connate. Petals shorter and narrower than the sepals. Labellum sessile, undivided, oblong to lanceolate-acuminate; margins crisped, denticulate, fringed or quite smooth; upper surface with a longitudinal callus of varying form, often bordered at least in part by a membrane; basal portion  $\pm$  erect; the lamina often variously curved. Column short, with a variable lateral wing on either side. Anther with 2 pollen sacs, erect behind the stigma; pollinia 2, bilobed; caudicles present.

### *Key to the species*

- 1 Lateral sepals free . . . . . 2
- 1 Lateral sepals connate for at least part of their length . . . . . 7
- 2 Labellum reflexed back on itself, margins undulate; callus bright green, extending beyond the bend. Perianth white with yellow-green or pink, 13–17 mm long. Dorsal sepal 9–11 mm long. Plant 24–70 cm high. Widespread. Fl. Aug–Jan . . . . . **P. odoratum** R.S.Rogers
- 2 Labellum variously bent but not reflexed back on itself. Perianth predominantly green or brown but white and green in *P. patens*. . . . . 3
- 3 Labellum margins undulate, crenate or pleated . . . . . 4
- 3 Labellum margins not as above,  $\pm$  entire . . . . . 5
- 4 Callus slightly raised, not extending past the bend. Labellum pale or white. Flowers 8–11 mm long. Dorsal sepal 5–6 mm long. Plant up to 30 cm high. Widespread. Fl. Sept.–Dec. . . . . **P. patens** R.Br
- 4 Callus distinctly raised, extending beyond the bend to tip of labellum . . . . . 5
- 5 Flowers reddish-brown. Labellum sharply recurved in middle and extending into tapering tail. Dorsal sepal c. 9 mm long. Plants 30–45 cm high. Georges River. Fl. Oct.–Dec. . . . . **P. fuscum** R.Br.
- 5 Flowers pink or green-white. Labellum sharply recurved and constricted near the middle. Dorsal sepal c. 10 mm long.; Plant 14–40 cm high. Blue Mts Fl. spring–summer . . . . . **P. pallens** D.L.Jones
- 6 Callus well developed before the bend and extending to  $\frac{3}{4}$  labellum length. Column wings pink. Plant 30–45 cm high. Swampy areas. Moss Vale area. Endangered. Fl. early summer . . . **P. uroglossum** Rupp
- 6 Callus developed at bend and extending past it. Column wings dull red. Heath or DSF in damp places. Fl. early summer . . . . . **P. appendiculatum** Nicholls

- 7 Perianth yellow. Plant 25–65 cm high, tubers on rhizomes distant from base of stem. Petals and sepals 10 mm long. Widespread. Fl. Nov.–Jan. . . . . **P. flavum** R.Br.
- 7 Perianth not yellow. Plants with tubers at base of stem . . . . . 8
- 8 Labellum green to purplish. Ovary ovoid, turgid, not appressed to the stem. Flowers very strongly scented, c. 40. Perianth segments up to 12 mm long. Plants up to 50 cm high. Coast and adjacent plateaus. Dry heath. Endangered. Fl. summer . . . . . **P. affine** Lindl.
- 8 Labellum white. Ovary appressed to stem or not. . . . . 9
- 9 Ovary narrow-ovoid almost appressed to stem. Perianth brown or purple. Plant up to 40 cm high. Dorsal sepal 7–11 mm long. Labellum reflexed at an angle greater than 90°. Widespread. Fl. Aug. –Jan. . . . . **P. brevilabre** (Lindl.) Hook.f.
- 9 Ovary cylindrical, appressed to the stem . . . . . 10
- 10 Plant 6–30 cm high. Petals and sepals striate green and white. Dorsal sepal triangular, acute, 10 mm long. Labellum with narrow claw. Widespread. Fl. April–June . . . . . **P. striatum** R.Br.
- 10 Plants usually more than 30 cm and up to 120 cm high. Dorsal sepal ovate to lanceolate . . . . . 11
- 11 Labellum gibbous at the base, reflexed at an angle greater than 90°. Dorsal sepal 8 mm long. Plant 30–90 cm high. Perianth green white and brown, striate. Widespread. Fl. Nov.–Dec. . **P. australe** R.Br.
- 11 Labellum not gibbous at the base, reflexed at an angle less than 90°. Dorsal sepal up to 11 mm long. Plant up to 120 cm high. Perianth green yellow-green or brown. Widespread. Fl. Aug.–Oct. . . . . **P. elatum** R.Br.

## 7 *Genoplesium* D.L.Jones

*Midge Orchids*

40 species in Aust. (37 endemic, 3 native); all states and territories except NT

Glabrous terrestrial herbs with paired tubers. Leaf solitary, sheathing the stem for most of its length, terete below, flattened above the sheath. Flowers not resupinate, usually numerous in a terminal spike. Dorsal sepal ± lanceolate, free, concave on the inner side; lateral sepals usually narrower and slightly longer, free or ± connate. Petals shorter and narrower than the dorsal sepal. Labellum clawed, usually articulate to the base of the column, with a single longitudinal callous; margin fringed to smooth. Column short, with a variable lateral wing on either side; anther with 2 pollen sacs, erect behind the stigma; pollinia 2, bilobed; caudicles present.

D.L.Jones (2006) places most of the following species in a new genus *Corunastylis*

### *Key to the species*

- 1 Yellowish-green to purplish saprophytic plant up to 15 cm high. Flowers c. 15 mm diam., green to reddish. Coast and adjacent plateaus. DSF and heath. Vulnerable. Fl. summer–autumn **G. baueri** R.Br.
- 1 Green autotrophic plants . . . . . 2
- 2 Labellum entire to dentate but never ciliate. . . . . 3
- 2 Labellum ciliate. . . . . 6
- 3 Bract emerging just below the flowers and just touching them; the tip sometimes exceeding the inflorescence. Flowers c. 3 mm diam. Labellum ± toothed. Plant up to 18 cm high. Widespread. DSF and heath. Ss. Fl. summer . . . . . **G. nudiscapum** (Hook.f.) D.L.Jones & M.A.Clem.
- 3 Bract emerging well below the flowers, usually appressed to the stem. . . . . 4
- 4 Labellum acuminate. Flowers 3–4 mm diam., dark purple to greenish purple. Labellum entire or toothed. Plant up to 25 cm high. Coast in south of area and Illawarra range. DSF and heath. Fl. summer–autumn. . . . . **G. despectans** (Hook.f.) D.L.Jones & M.A.Clem.
- 4 Labellum acute or obtuse . . . . . 5
- 5 Perianth red to reddish-brown, 3–4 mm diam. Labellum entire to toothed. Plant up to 25 cm high. Widespread. DSF and heath. Fl. summer–autumn. . . . . **G. rufum** (R.Br.) D.L.Jones & M.A.Clem.

5 Perianth green to yellowish-green, sometimes with red markings. Flowers c. 3 mm diam. Plant up to 20 cm high. Coast to lower Blue Mts DSF and heath. Fl. summer–autumn. . . . .	
. . . . .	<b>G. pumilum</b> (Hook.f.) D.L.Jones & M.A.Clem.
6 Labellum ciliate; other perianth segments not ciliate . . . . .	7
6 Labellum, and at least one other perianth segment, ciliate . . . . .	11
7 Flowers 2–3 mm diam., green and red to purplish. Dorsal sepal entire. Plant up to 30 cm high. Widespread. DSF in damp areas. Fl. summer–autumn . . . . .	<b>G. nudum</b> (Hook.f.) D.L.Jones & M.A.Clem.
7 Flowers 4–6 mm diam. . . . .	8
8 Flowers purplish . . . . .	9
8 Flowers green to brownish . . . . .	10
9 Flowers c. 4 mm diam. Dorsal sepal entire. Petals ovate, 3–3.5 mm long. Plant up to 20 cm high. Widespread. Open forest. Fl. summer–autumn . . . . .	<b>G. archeri</b> (Hook.f.) D.L.Jones & M.A.Clem.
9 Flowers c. 5 mm diam. Dorsal sepal entire. Petals lanceolate–narrow ovate, 4.5–5 mm long. Plant to 18 cm tall. Heath on sand. Wyong area. Endangered. Fl. spring. . . . .	<b>G. insignis</b> D.L.Jones
10 Lateral sepals more than 7 mm long. Labellum oblong, c. 5 mm long. Dorsal sepal entire. Plant up to 20 cm high. Coast and adjacent plateaus south of Sydney. DSF. Ss. Endangered. Fl. summer–autumn . . . . .	<b>G. plumosum</b> (Rupp) D.L.Jones & M.A.Clem.
10 Lateral sepals up to 6 mm long. Labellum obovate, c. 4 mm long. Dorsal sepal entire. Plant up to 20 cm high. Widespread. DSF and heath. Fl. summer–autumn . . . . .	<b>G. sagittiferum</b> (Rupp) D.L.Jones & M.A.Clem.
11 Petals and labellum ciliate . . . . .	12
11 Petals, dorsal sepal and labellum ciliate . . . . .	13
12 Lateral sepals deflexed. Flowers purplish, 5–6 mm diam. Petals coarsely ciliate. Plant up to 25 cm high. Kanangra-Boyd National Park. Open forest. Fl. summer . . . . .	<b>G. morinum</b> D.L.Jones
12 Lateral sepals erect. Flowers c. 4 mm diam., purplish . . . . .	<b>G. archeri</b> (see above)
13 Cilia usually glandular, very short . . . . .	14
13 Cilia not glandular, long (c. 0.5 mm) . . . . .	17
14 Lateral sepals spreading. Labellum thin. Flowers c. 5 mm diam., greenish to purple. Plants up to 40 cm high. Widespread north of Sydney. DSF and heath. Fl. summer–autumn . . . . .	<b>G. filiforme</b> (Fitzg.) D.L.Jones & M.A.Clem.
14 Lateral sepals deflexed. Labellum fleshy . . . . .	15
15 Flowers less than 4 mm diam., purple to brownish purple. Plants up to 20 cm high. Mt Wilson. DSF and heath. Fl. summer . . . . .	<b>G. eriochilum</b> (Fitzg.) D.L.Jones & M.A.Clem.
15 Flowers 4–6 mm diam. . . . .	16
16 Flowers greenish with purple labellum. Plants to 15 cm high. In north of region. Swampy to heath areas. Fl. summer–autumn . . . . .	<b>G. ruppii</b> (R.S.Rogers) D.L.Jones
16 Flowers purple with darker markings. Plants up to 40 cm high. Widespread. Open forest and heath. Fl. autumn. . . . .	<b>G. woollsii</b> (F.Muell.) D.L.Jones & M.A.Clem.
17 Labellum with red to pink cilia . . . . .	18
17 Labellum with brown or dark purplish cilia. . . . .	19
18 Labellum hinged and movable on the hinge. Flowers c. 10 mm diam., lemon-scented. Plant up to 30 cm high. Widespread. DSF and heath. Fl. summer–autumn . . . . .	<b>G. fimbriatum</b> (R.Br.) D.L.Jones & M.A.Clem.
18 Labellum not hinged and not movable. Flowers c. 5 mm diam., sometimes remaining closed. Plant up to 40 cm high. Coast and adjacent plateaus; lower Blue Mts Open forest and heath. Fl. summer–autumn. . . . .	<b>G. apostasioides</b> (Fitzg.) D.L.Jones & M.A.Clem.

- 19 Flowers c. 5 mm diam., very dark purple, lemon-scented. Plants up to 40 cm high. Blue Mts DSF in moist sites. Fl. summer–autumn . . . . . **G. citriodorum** D.L.Jones & M.A.Clem.
- 19 Flowers 7–8 mm diam., very dark purple, without a strong lemon-scent. Plants up to 50 cm high. Blue Mts; Illawarra ranges. DSF and heath. Fl. summer–autumn . . . . . **G. simulans** D.L.Jones

**8 Caleana** R.Br.  
*One species in the area*

Terrestrial herb 15–50 cm high, with underground tubers. Leaf solitary, basal, oblong to lanceolate, 6–10 cm long. Flowers 1–4, not resupinate. Sepals and petals linear, red-brown, rarely green, 20 mm long. Labellum smooth. Column without an elongated foot, appressed to the ovary. Widespread. Fl. spring–summer. *Bee Orchid* or *Duck Orchid* . . . . . **C. major** R.Br.

**9 Paracaleana** Blaxell  
*One species in the area*

Terrestrial herb 6–17 cm high, with tubers. Leaf solitary, linear, 4–12 cm long. Flowers 1–4, not resupinate. Perianth green or dull red-brown, c. 8 mm long. Labellum tuberculate. Column with an elongated foot; the wings decurrent on the column. Coast; Blue Mts Fl. spring–summer. . . . . **P. minor** (R.Br.) Blaxell

**10 Arthrochilus** F.Muell.

10 species in Aust. (8 endemic); all states and territories except WA

Terrestrial herbs with small tubers. Leaves 2–5 (absent in one species), basal, oblong to lanceolate, prostrate, usually but not always separate from the flowering stem, sometimes absent at flowering time. Flowers in a terminal raceme, sometimes numerous. Sepals and petals very slender, somewhat similar. Dorsal sepal erect; lateral sepals and petals spreading or deflexed. Labellum articulate by a long slender claw with the column foot; lamina narrow, peltate, hammer-shaped or insectiform; upper lobe either emarginate or separated into 2 long divergent filiform tails. Column elongate, very slender, incurved or erect or reflexed towards the ovary, with 2 wing-like auricles on either side of its upper part; foot either absent or rudimentary or long. Anther erect, obtuse, with 2 pollen sacs. Rostellum almost obsolete.

*Key to the species*

- 1 Basal leaves absent. A few loose bracts present on the stem. Sepals and petals 5 mm long, green with darker tints. Plant 6–15 cm high. Flowers 3–5. Blue Mts Uncommon. Fl. summer. *Elbow Orchid*. . . . . **A. huntianus** (F.Muell.) Blaxell
- 1 Basal leaves prostrate, 2–5. Dorsal sepal 12–14 mm long; lateral sepals and petals shorter, green with darker tints. Plants 5–37 cm high. Flowers 3–20, in a loose spike. Coast. Fl. chiefly summer . . . . . **A. prolixus** D.L.Jones

**11 Chiloglottis** R.Br.

18 species in Aust. (15 endemic); Qld, NSW, Vic., Tas., S.A.

Small terrestrial herbs with ovoid or globular tubers. Leaves 2, basal ± prostrate. Flowers usually solitary, on a comparatively short stem which usually elongates considerably after fertilization of the ovary. Dorsal sepal erect or incurved, ± contracted at or towards the base. Lateral sepals linear. Petals narrow-lanceolate. Labellum undivided, sessile, but the lamina contracted into a long or short horizontal claw towards the base, beyond this expanding widely and provided on the upper surface of the expansion with variously shaped and arranged prominent calli. Column elongate, slender, rather narrowly winged. Anther erect, higher than the rostellum; pollinia granular.

*Key to the species*

- 1 Petals diverging, sometimes curving upwards . . . . . 2
- 1 Petals reflexed against the ovary . . . . . 3



- 2 Perianth green to yellowish. Petals c. 15 mm long. Labellum with c. 12 calli not forming a flange towards the base with the margin. Plant up to c. 15 cm high. Coast and adjacent plateaus. Damp, sheltered places. Fl. spring–summer . . . . . **C. chlorantha** D.L.Jones
- 2 Perianth reddish to purplish-brown. Petals 15–18 mm long. Labellum with c. 12 calli forming a flange towards the base with the margin. Plant up to c. 15 cm high. Blue Mts Open forest. Fl. summer . . . . . **C. pluricallata** D.L.Jones
- 3 Lateral sepals with osmophores less than 1 mm long. Flowers 12–16 mm across. Labellum with a shiny black callous . . . . . 4
- 3 Lateral sepals with osmophores more than 2 mm long . . . . . 5
- 4 Labellum with a callus at the base only. Perianth brownish. Plant up to c. 10 cm high. Widespread. Open forest. Moist places. Fl. spring . . . . . **C. trapeziformis** Fitzg.
- 4 Labellum with a callus reaching to the apex. Perianth greenish brown. Plant up to c. 10 cm high. Widespread. Open forest. Moist places. Fl. spring. *Ant Orchid*. . . . . **C. formicifera** Fitzg.
- 5 Osmophores yellowish. . . . . 6
- 5 Osmophores reddish. . . . . 7
- 6 Flower more than 28 mm long, greenish brown. Lateral sepals  $\pm$  parallel with osmophores more than 5 mm long. Plant up to c. 12 mm high. Coast and adjacent plateaus. Open forest. Moist places. Fl. summer–autumn. . . . . **C. diphylla** R.Br.
- 6 Flower up to c. 25 mm long, greenish pink. Lateral sepals divergent, with osmophores up to 3 mm long. Widespread. Open forest and RF. Moist places. Fl. summer–autumn. . . . . **C. sylvestris** D.L.Jones & M.A.Clem.
- 7 Labellum with a black callus on the lower two-thirds, obtuse. Lateral sepals decurved. Petals reflexed. Flowers green to reddish, 10–14 mm long. Plants up to c. 15 cm high. Blue Mts Open forest in moist sheltered sites. Fl. summer–autumn . . . . . **C. seminuda** D.L.Jones
- 7 Labellum with a black callus almost to the apex . . . . . 8
- 8 Labellum mucronate to almost obtuse. Lateral sepals reflexed and incurved beneath the labellum. Petals reflexed. Flowers greenish to reddish, 25–30 mm long. Plants up to c. 15 cm high. Widespread. Open forest in moist places. Fl. summer–autumn. . . . . **C. reflexa** (Labill.) Druce
- 8 Labellum usually with a short tail. Lateral sepals recurved but not incurved beneath the labellum. Petals reflexed. Flowers greenish brown, 30–35 mm long. Plants up to c. 15 cm high. Widespread. Open forest in moist places. Fl. summer–autumn . . . . . **C. trilabra** Fitzg.

## 12 *Acianthus* R.Br.

13 species in Aust. (12 endemic); Qld, NSW, Vic., Tas., S.A.

Small terrestrial glabrous herbs with globular tubers. Leaf solitary, often close to the base of the stem, cordate to ovate or reniform, lower surface reddish-purple (Fig. 44). Flowers in a terminal raceme, rarely solitary, usually very small. Dorsal sepal erect or incurved, occasionally hooded, often produced into a fine point. Lateral sepals narrower than the dorsal sepal, usually spreading. Petals often shorter, reflexed or spreading. Labellum undivided, spreading, with 2 basal calli. Column long, rather slender, almost terete, incurved, seldom winged. Anther broad, erect, with 2 pollen sacs, valvate; pollinia granular or mealy; caudicle absent.

### *Key to the species*

- 1 Sepals long-filiform; the dorsal sepal up to 40 mm long. Stems 6–16 cm high. Flowers 1–6, reddish-purple. Chiefly coast. Sandy soils. Fl. July–Sept. *Mayfly Orchids* . . . . . **A. caudatus** R.Br.
- 1 Sepals not long-filiform, up to 20 mm long. Perianth brown, green or pinkish . . . . . 2
- 2 Petals spreading. Column covered by the dorsal sepal. . . . . 3
- 2 Petals reflexed against the ovary. Column prominently exserted. . . . . 4



- 3 Labellum shortly acuminate, callus cordate. Plant 5–22 cm high. Flowers 2–15. Perianth greenish-pink 7–10 mm long. Widespread in coastal areas. Fl. winter. *Pixie Caps* . . . . . **A. fornicatus** R.Br.
- 3 Labellum with a long acuminate tip; callus narrow-cordate. Plant to 20 cm high. Flowers 2–9. Perianth pink, 9–12 mm long. Moist forest on tablelands. Fl. autumn . . . . . **A. apprimus** D.L.Jones
- 4 Flowers 8–12 mm long, green to pink. Labellum up to 5 mm long. Plant up to 20 cm high. Widespread. Open forest and margins of RF. Fl. autumn–winter. *Gnat Orchid* . . . . . **A. pusillus** D.L.Jones
- 4 Flowers 12–16 mm long, purplish. Labellum 5 mm long or longer. Plant 6–30 cm high. Flowers 1–10. Perianth usually pale reddish-brown, sometimes green, up to 20 mm long. Widespread. Fl. May–Sept. *Mosquito Orchid* . . . . . **A. exsertus** R.Br.

### 13 *Acianthella* D.L.Jones & M.A.Clem.

2 species endemic Aust.; Qld, NSW

#### *One species in the area*

Plant 5–9 cm high. Leaf broad, entire or lobed, green on both surfaces. Flowers green, 2–20, c. 3 mm wide. Sepals and petals narrow, 2–3 mm long, spreading to decurved. Labellum oblong, c. 2 mm long with 3–5 coarse teeth. Callus extending to half the length of the labellum. Uncommon. Coastal scrub and littoral RF. Fl. April–May . . . . . **A. amplexicaulis** (F.M.Bailey) D.L.Jones & M.A.Clem.

### 14 *Cyrtostylis* R.Br.

5 species in Aust. (4 endemic, 1 native); all states and territories except NT

#### *One species in the area*

Plant 5–27 cm high. Leaf solitary, reniform to orbicular, 15–40 mm long; upper surface greyish; lower surface crystalline. Flowers 1–8, sessile, reddish-brown or rarely yellowish-green, 9–15 mm long. Sepals and petals almost equal in length. Labellum entire to denticulate, with 2 basal calli and 2 longitudinal ridges. Petals spreading or curving downwards. Column slender, c. 5 mm long. Widespread. Chiefly sandy soils. Fl. June–Oct. *Mosquito Orchid* . . . . . **C. reniformis** R.Br.

### 15 *Eriochilus* R.Br.

6 species endemic Aust.; all states and territories except NT

Tubers globular. Leaf solitary, basal, ovate to broad-lanceolate, glabrous, often purple beneath, cordate at the base. Flowers 1–5, terminal. Perianth pink or white. Stem bractless above the leaf. Dorsal sepal erect, slightly concave, sometimes with undulate edges; lateral sepals on a slender claw; the lamina lanceolate. Petals linear almost as long as the dorsal sepal. Labellum equal to or shorter than the petals, on an erect claw embracing the column; the basal margins often produced into small lateral lobes; middle lobe of lamina much recurved, convex above. Column slightly curved or erect, sometimes ciliate in front, narrowly winged. Stigma concave. Anther erect, blunt, valvate, with 2 pollen sacs; pollinia 8, 4 pyriform masses in each pollen sac, waxy or granular.

#### *Key to the species*

- 1 Upper surface of the leaf hairy, with prominent veins, ovate to orbicular, up to 15 mm long. Flowers 1–3, white to pale pink. Lateral sepals up to 10 mm long, linear to filiform. Plants up to c. 30 cm high. Coast to lower Blue Mts Heath in moist places. Fl. autumn–winter . . . **E. petricola** D.L.Jones & M.A.Clem.
- 1 Upper surface of leaf glabrous, without prominent veins, ovate, up to 35 mm long. Flowers 1–5, white to deep pink. Lateral sepals 10–17 mm long. Plants up to c. 25 cm high. Widespread. DSF and heath. Moist places. Fl. Jan.–May. *Parson's Bands* . . . . . **E. cucullatus** (Labill.) Rchb.f.

## 16 Rimacola Rupp

1 species endemic Aust.; NSW

### *Monotypic genus*

Semi-terrestrial plant with succulent terete rhizomes. Basal leaves several, elliptic-lanceolate, petiolate, 3–5 cm long; cauline leaves 1–3, ovate, loosely stem-clasping. Flowers 6–18, rather crowded in a weak terminal raceme, often drooping. Perianth green. Sepals acuminate; the dorsal one ± hooded but straight or slightly curved towards the tip; lateral sepals spreading, hardly divergent. Petals shorter, obtuse, slightly deflexed. Labellum on a slender claw, undivided, white, with dark red stripes; calli rather obscure, sometimes obsolete. Column slender, elongate, very narrowly winged above. Anther acute; pollinia 4 in 2 pairs, granular. Stigma conspicuous. Coast to Blue Mts Clay crevices or wet dripping ledges of sandstone cliffs. Fl. summer, occasionally at other times. *Green Beaks* . . . . . **R. elliptica** (R.Br.) Rupp

## 17 Lyperanthus R.Br.

3 species endemic Aust.; all states and territories except NT

### *One species in the area*

Terrestrial herbs 18–44 cm high, with ovoid or globular tubers. Basal leaf solitary, linear, erect, coriaceous, 12–26 cm long. Plant Cauline bracts 1–3. Flowers in a terminal raceme, 2–6, with large bracts. Perianth red-brown to yellow-green. Dorsal sepal 20 mm long, incurved and hooded, ± deflexed towards the tip. Lateral sepals c. as long as but narrower than the dorsal sepal, erect or spreading; petals similar. Labellum much shorter, sessile or almost so, 3-lobed near the base, ± papillose; the lamina with calli, sometimes ridged. Middle lobe of the labellum entire. Column incurved, c. as long as the labellum, sometimes obscurely winged. Anther erect with 2 sacs; pollinia 2 or 4, granular or mealy. Coast. Fl. Aug.–Oct. *Brown Beaks* . . . . . **L. suaveolens** R.Br.

## 18 Pyrorchis D.L.Jones and M.A.Clem.

1 species endemic Aust.; all states and territories except Qld, & NT

### *Monotypic genus*

Terrestrial herbs with ovoid or globular tubers. Basal leaf solitary; cauline bracts usually 2. Flowers in a terminal raceme, rarely solitary, usually 2–8. Dorsal sepal incurved and hooded, ± deflexed towards the tip; lateral sepals c. as long as but narrower than the dorsal sepal, erect or spreading; petals similar. Labellum much shorter, sessile or almost so, 3-lobed near the base, ± papillose; the lamina with calli, sometimes ridged. Column incurved, c. as long as the labellum, sometimes obscurely winged. Anther erect with 2 sacs; pollinia 2 or 4, granular or mealy.

### *One species in the area*

Leaf broad-ovate, prostrate, fleshy, up to 12 cm long, 6 cm wide. Middle lobe of the labellum fimbriate or dentate. Plant 10–30 cm high, jet black when dry. Cauline bracts 2, erect, loosely sheathing. Flowers 1–8. Perianth whitish with purplish red striae. Dorsal sepal 20 mm long. Coast. Fl. Sept.–Oct. *Red Beaks* or *Undertaker Orchid* . . . . . **P. nigricans** (R.Br.) D.L.Jones & M.A.Clem.

## 19 Burnettia Lindl.

1 species endemic Aust.; NSW, Vic., Tas.

### *Monotypic genus*

Dwarf, terrestrial herb with small globular tubers. Leaves 1–2, ovate-lanceolate, basal, usually absent at flowering time. Cauline bracts 1–2, loosely clasping. Plant 5–10 cm high. Flowers 2–5, large for the size of the plant. Perianth reddish or purplish-brown outside, white inside, sometimes with conspicuous dark veins. Dorsal sepal 12–15 mm long, broad-lanceolate, concave, hardly hooded; lateral sepals and petals as long as dorsal sepal, not very widely expanding; petals narrower. Labellum sessile, short, undivided, erect at the base, recurved towards the tip, with 2 longitudinal ridges or raised plates broken up into calli above the middle. Column c. 7 mm long, incurved, winged. Anther erect, with 2 pollen sacs; pollinia 2, granular. Usually sandy soils. Uncommon. Fl. autumn. *Lizard Orchid* . . . . . **B. cuneata** Lindl.

## 20 *Cyanicula* Hopper & A.P.Br.

9 species endemic Aust.; Qld, NSW, Vic., WA

### *One species in the area*

Terrestrial herb to 20 cm high, usually less. Leaf linear 7 cm long, sparsely hairy. Inflorescence 1-flowered. Perianth blue (rarely white) up to 17 mm long; outer surface with sparse blue hairs. Labellum cuneate 3-lobed. Calli in 2 rows, golden yellow. Widespread. Open forests. Fl. spring. . . . .  
. . . . . **C. caerulea** (R.Br.) Hopper & A.P.Br.

## 21 *Caladenia* R.Br.

c. 150–250 species in Aust.; all states and territories except NT

Terrestrial herbs usually ± hirsute on the stem ovary and leaf, with small globular tubers. Leaf solitary, basal, linear to lanceolate. Flowers sometimes large, solitary or in small terminal racemes of 2–6 flowers. Cauline bract 1, small. Dorsal sepal erect, usually ± incurved behind the column sometimes deeply so, usually rather narrow; lateral sepals similar, sometimes smaller, spreading or reflexed. Petals narrower and often shorter than the sepals, erect spreading or reflexed. Labellum usually on a moveable claw, entire or 3-lobed, erect at the base; anterior portion recurved; margins often fringed or variously toothed; lateral lobes erect; middle lobe with stalked or sessile calli of various forms in longitudinal rows or more rarely distributed irregularly. Column ± incurved, rather long, winged above. Anther terminal, oblique, pointed, with 2 pollen sacs, valvate; pollinia 4, without a caudicle. Stigma discoid.

### *Key to the species*

- 1 Sepals finely acuminate, often produced into long tails, sometimes club-shaped at the tip. Petals similar but usually narrower and shorter, not club-shaped at the tip. Sepals and petals more than twice as long as the labellum. *Spider Orchids*. . . . . 2
- 1 Sepals and petals acute, c. as long as or less than twice as long as the labellum . . . . . 8
- 2 Sepal tails filiform to the end . . . . . 3
- 2 Sepals clubbed at the end . . . . . 6
- 3 Base of column without yellowish glands. Perianth crimson or reddish-purple. Labellum entire. Sepals 4–7 cm long. Plants up to 20 cm high. Widespread. Fl. spring. *Daddy Long-legs*. . . **C. filamentosa** R.Br.
- 3 Base of column with yellowish glands. Perianth in shades of red, brown, green, yellow-green, or white. . 4
- 4 Sepals up to 25 mm long. Calli crowded and overlapping towards base of labellum. Sepals neither caudate nor clavate. Plant 10–26 cm high. Widespread. Endangered. Fl. Sept.–Oct. . . **C. tessellata** Fitzg.
- 4 Sepals 4–8 cm long. Calli not crowded . . . . . 5
- 5 Labellum margins entire or minutely denticulate on the red-brown middle lobe. Plant up to 30 cm high, very hairy. Perianth red and green, tails with sparse short hairs. Sepals up to 5 cm long, tipped with a gland. Blue Mts Fl. Sept.–Nov. . . . . **C. clavigera** A.Cunn. ex Lindl.
- 5 Mid lobe of labellum toothed. Tail of perianth segments covered with long, dark hairs. Calli stout but not conspicuously overlapping. Perianth up to 8 cm long, creamy to yellowish. Plants up to 30 cm high. Blue Mts Endangered. Fl. Sept.–Oct . . . . . **C. arenaria** Fitzg.
- 6 Labellum lateral lobes deeply fringed, teeth c. 8 mm long; middle lobe denticulate or crenate, maroon in the front. Sepals up to 70 mm long, deflexed. Plants up to 30 cm high. Perianth yellow-green. Sepals up to 5 cm long. Widespread. Fl. July–Oct. . . . . **C. tentaculata** Schldl.
- 6 Labellum lateral lobes not deeply fringed . . . . . 7
- 7 Labellum almost as long as wide, greenish, reddish at the tip; lateral margins entire, or minutely denticulate towards labellum tip. Sepals up to c. 50 mm long, shortly club-shaped . . . . .  
. . . . . **C. clavigera** (see above)
- 7 Labellum ovate to triangular, yellowish, maroon at tip, margins ± fringed Sepals c. 45 mm long ending in a club c. 15 mm long, spreading. Labellum ovate. Plants to 30 cm high. Montane areas. Fl. Aug.–Nov. *Spider Orchid* . . . . . **C. fitzgeraldii** Rupp

- 8 Perianth white to pink or greenish outside . . . . . 9
- 8 Perianth brownish to purplish or reddish outside . . . . . 17
- 9 Labellum with a pair of flat, irregular, yellowish teeth either side of the middle lobe . . . . . 10
- 9 Labellum without large flat teeth at the base of the middle lobe or, if teeth are present, then  $\pm$  the same size as others on the margin . . . . . 11
- 10 Leaves up to 6 cm long. Flowers less than 15 mm diam.. Perianth segments white with green stripes on the back, up to 7 mm long. Plants up to c. 10 cm high. Coast and adjacent plateaus. DSF and heath. Moist places. Fl. spring. *Fairy Orchid*. . . . . **C. alata** R.Br.
- 10 Leaves 6–12 cm long. Flowers more than 20 mm diam. Perianth segments pink with red blotches, with a dark strip on the back, 12–18 mm long. Plants to 25 cm high. DSF. Coastal. Fl. Aug.–Oct. . . . . **C. hillmannii** D.L.Jones
- 11 Labellum with red transverse bars . . . . . 12
- 11 Labellum without red transverse bars . . . . . 14
- 12 Labellum with 4–6 rows of club-shaped yellowish calli down the centre; margin of the middle lobe with stalked teeth. Flowers 1–2. Perianth segments up to 20 mm long, greenish pink outside with glandular hairs, pink inside. Plants up to 20 cm high. Coast in north of the region. DSF. Fl. spring. . . . . **C. quadrifaria** D.L.Jones
- 12 Labellum with 2 rows of calli down the centre . . . . . 13
- 13 Calli at base of labellum orange, the rest white, becoming larger towards tip of labellum. Marginal calli flat. Labellum white, pink or purplish, tip orange. Perianth bright pink to dark pink inside, greenish white or purplish-brown outside. Dorsal and lateral sepals 14–20 mm long, bright to dark pink inside, greenish white to purplish-brown outside without a central dark band. Flowers solitary. Plants to 35 cm tall. Restricted to coastal areas. Heath and woodland. Endangered. Fl. Sept.–Oct. . . . . **C. porphyrea** D.L.Jones
- 13 Labellum with 2 rows of club-shaped yellowish calli down the centre; margin of the middle lobe with unstalked teeth. Dorsal and lateral sepals  $\pm$  equal, 8–15 mm long, greenish pink outside with glandular hairs, greenish pink to greenish white inside. Flowers 1–3, usually musk scented. Plants up to 22 cm high. Widespread. Open forest and heath. Fl. Aug.–Oct. *Pink Fairy* or *Pink Fingers* . . . . . **C. carnea** R.Br. var. **carnea**
- 14 Labellum with a long narrow tip. Calli on middle lobe crowded, shiny and black; lateral lobes falcate, pink. Perianth segments c. 20 mm long, bright pink, dark hairs on outside. Flowers 1–3. Dorsal sepal forming a cap over the column. Plants up to 60 cm high. Montane areas. Fl. Oct.–Dec. *Black Tongue Caladenia* . . . . . **C. congesta** R.Br.
- 14 Labellum not as above . . . . . 15
- 15 Calli in 4 rows. Perianth white inside, outside greenish with scattered hairs. Dorsal sepal forming a cap over the column. Labellum white, sometimes with a dark spot on the tip; upper section margins with slender teeth. Plants to 30 cm high. DSF. Blue Mts. . . . . **C. dimorpha** Fitzg.
- 15 Calli in 2 rows . . . . . 16
- 16 Middle lobe of the labellum with long, acute, undulating teeth giving it the appearance of a comb, with a yellow-orange tip. Perianth segments up to 20 mm long, shining white. Column greenish. Flowers usually 1–2. Plant up to 30 cm high. Coast and adjacent plateaus. DSF and heath. Fl. winter–spring. *White Fingers* . . . . . **C. catenata** (Sm.) Druce
- 16 Middle lobe of the labellum with short blunt teeth and a yellowish tip. Perianth segments up to 20 mm long, white with pale pink tips. Column with a red spot. Flowers 1–2. Plant up to 15 cm high. Coast. Open forest mostly on clay soils. Fl. winter . . . . . **C. picta** (Nicholls) M.A.Clem. & D.L.Jones
- 17 Inner surface of perianth greenish yellow. . . . . 18
- 17 Inner surface or perianth white or pinkish . . . . . 19

- 18 Lateral lobes of labellum entire. Plant up to 20 cm high. Widespread. DSF. Fl. Oct.–Nov. . . . . . **C. transitoria** D.L.Jones
- 18 Lateral lobes of the labellum toothed. Plants up to 20 cm high. Widespread. DSF and heath. Fl. spring–summer . . . . . **C. testacea** R.Br.
- 19 Dorsal sepal hooded over the column . . . . . 20
- 19 Dorsal sepal not hooded over the column . . . . . 21
- 20 Labellum with coarse teeth, white, purplish towards the base and tip; teeth ± club-shaped, with rough stalks. Flowers up to 6. Perianth segments up to 15 mm long, greenish to brownish outside, white inside. Plant up to 25 cm high. Blue Mts DSF. Fl. spring–summer . . . . . **C. cucullata** Fitzg.
- 20 Labellum with slender teeth, white, purplish towards the tip; teeth with slender heads and smooth stalks. Flowers up to 6, with musky scent. Plant up to 40 cm high. Blue Mts DSF. Fl. spring–summer . . . . . **C. gracilis** R.Br.
- 21 Calli at base of labellum orange, the rest white . . . . . **C. porphyrea** (see above)
- 21 All central calli yellow . . . . . 22
- 22 Lateral sepals up to 7 mm long, covered with reddish glandular hairs outside, white to pink inside. Flower usually solitary. Labellum toothed on the middle lobe, white to pink. Plant up to 15 cm high. Widespread. Open forest. Fl. spring . . . . . **C. fuscata** (Richb.f.) M.A.Clem. & D.L.Jones
- 22 Lateral sepals more than 7–16 mm long, with lines of green glandular hairs down the centre outside, white or cream to pink inside. Flower usually solitary. Labellum with broad flat teeth on the middle lobe. Plant up to 15 cm high. Coast and adjacent plateaus. DSF and heath. Ss. Fl. spring . . . . . **C. curtisepala** D.L.Jones

## 22 *Adenochilus* Hook.f.

1 species endemic Aust.; NSW

### *One species in the area*

Small, glabrous, terrestrial herb 10–20 cm high, with fleshy rhizomes. Leaf solitary, ovate to cordate, either sessile on the flowering stem or on a long petiole arising from the rhizome. Flower solitary, with a subtending sheathing bract well below the ovary; the bract with a conspicuous filament between its margins at the base, spatulate at the tip. Perianth white, 1–2 cm diam. Dorsal sepal broad, acute, ± hooded. Lateral sepals narrower and a little longer than the dorsal sepal, acuminate. Petals narrower and shorter than the sepals. Labellum on a claw, 3-lobed; the surface covered with yellow calli except at the tip. Column erect, widely winged; the wings higher than the anther. Labellum and column spotted with red. Blue Mts Rock crevices or in *Sphagnum* at elevations above 900 m. Fl. spring–summer. . . . . **A. nortonii** Fitzg.

## 23 *Glossodia* R.Br.

*Waxlip Orchids*

2 species endemic Aust.; Qld, NSW, Vic., Tas., S.A.

Terrestrial herbs with small tubers. Leaf solitary, basal, oblong to lanceolate, prostrate or nearly so. Flowers 1–2, rarely more. Sepals and petals C. equal, all spreading. Labellum very much shorter, sessile, undivided, with entire margins, without calli on the lamina; two tall linear clavate calli (sometimes fused) at the base of the lamina standing erect against the column. Column hardly as long as the labellum, widely winged above. Anther erect, with 2 pollen sacs; the outer valves broad; the inner valves much smaller; the connective produced into a small point; pollinia 4, granular.

### *Key to the species*

- 1 Calli at the base of the labellum fused, with a bilobed head. Flowers usually 3–4 cm diam. (up to 6 cm), 1–2 (rarely 3) together. Perianth purplish or white. Plants up to 30 cm high. Leaf oblong to lanceolate, 4–15 cm long, hairy. Widespread. Fl. spring . . . . . **G. major** R.Br.

1 Calli at the base of the labellum not fused, clavate. Flowers usually c. 2 cm diam., 1–2 together. Perianth violet-blue rarely white. Plants up to 16 cm high. Leaf broad-lanceolate, 2–4 cm long. Widespread. Fl. spring . . . . . **G. minor** R.Br.

## 24 *Corybas* Salisb.

*Helmet Orchids*

20 species in Aust. (19 endemic, 1 native); all states and territories except NT

Dwarf, terrestrial herbs with small globular tubers. Leaf solitary, cordate, ovate or nearly orbicular, usually flat on the ground. Flower solitary, almost sessile or very shortly stalked from the base of the leaf, occasionally rather large relative to the size of the plant. Dorsal sepal and labellum greatly developed; the other segments very small and inconspicuous. Dorsal sepal narrow at the base, becoming broad and hooded towards the apex. Lateral sepals linear, small. Labellum ± tubular towards the base, expanding into a broad concave lamina with variously fringed or entire margins. Column short and stout, occasionally winged; pollinia 4, granular or mealy. Stem often extensively elongating after fertilization of the ovary.

### *Key to the species*

- 1 Margins of the labellum fringed or serrulate . . . . . 2
- 1 Margins of the labellum entire . . . . . 5
- 2 Margins of the labellum minutely and irregularly serrulate. Labellum tube 2-spurred. Leaf cordate, reddish-grey below, 7–20 mm long. Perianth dark purplish red, 10–15 mm long. Frenchs Forest. Fl. May–July . . . . . **C. undulatus** (A.Cunn.) Rupp
- 2 Margins of the labellum fringed. Leaf green on both surfaces . . . . . 3
- 3 Labellum with conspicuous white protuberance which is notched at apex. Flowers 3–35 mm long. Perianth reddish-purple. Petals auriculate at base. Leaf 20–35 mm wide. Sheltered slopes in Blue Mts Fl. summer–autumn. . . . . **C. hispidus** D.L.Jones
- 3 Labellum protuberance inconspicuous and not notched at apex; reddish-purple or whitish . . . . . 4
- 4 Flowers 2–3 cm long. Perianth reddish-purple. Petals auriculate at base. Leaf orbicular-cordate, 20–40 mm wide. Widespread. Fl. May–June . . . . . **C. fimbriatus** (R.Br.) Rchb.f.
- 4 Flowers less than 2 cm long. Perianth purple. Petals often 2-fid at apex. Leaf 10–20 mm wide. Widespread. Fl. May–June . . . . . **C. pruinosis** (R.Br.) Rchb.f.
- 5 Labellum longer than the dorsal sepal. Leaf cordate. Perianth reddish-purple. Coast. Fl. June–July . . . . . **C. unguiculatus** (R.Br.) Rchb.f.
- 5 Labellum shorter than the dorsal sepal . . . . . 6
- 6 Perianth white to pink. Leaf cordate, dull green on the upper surface, purplish underneath. Hornsby Plateau. Open forest. Fl. winter. . . . . **C. barbarae** D.L.Jones
- 6 Perianth reddish-purple . . . . . 7
- 7 Leaf green on both surfaces, ovate-cordate. Flower less than 15 mm long. Perianth reddish-purple. Wentworth Falls. Fl. July–Aug . . . . . **C. fordhamii** Rupp
- 7 Leaf usually reddish below, orbicular-cordate . . . . . 8
- 8 Flowers 26–32 mm long. Dorsal sepal 6–10 mm wide. Perianth dark reddish-purple. Coastal area south of Newcastle. Fl. June–Aug. . . . . **C. dowlingii** D.L.Jones
- 8 Flower 15–24 mm long. Dorsal sepal 10–12 mm wide. Perianth reddish-purple rarely white. Widespread. Fl. April–June. . . . . **C. aconitiflorus** Salisb.



## 25 *Cryptostylis* R.Br.

*Tongue Orchids*

5 species in Aust. (4 endemic, 1 native); all states and territories except NT

Terrestrial, glabrous herbs with fleshy rhizomes. Leafless or with a few erect lanceolate to ovate, basal leaves on long petioles. Flowers not resupinate, several in a terminal raceme. Perianth green or yellowish except for the red-brown labellum. Sepals and petals linear; the sepals almost equal in length; the petals smaller. Labellum undivided, sessile; the base enclosing the column; the lamina sometimes very broad, concave on the upper surface or convex through reflexion of the margins, longitudinally ridged or with sessile calli. Column very short and broad, winged; the wings forming auricles or produced posteriorly into a glandular or membranous process with fringed margins behind the anther.

### *Key to the species*

- 1 Plant leafless, 15–45 cm high, saprophytic. Cauline bracts 6–8. Flowers 3–10, sessile, reversed. Sepals 2 cm long. Petals 1 cm long, subulate, yellow. Labellum pubescent, narrow-oblong, convex, 3 cm long, yellowish-green below, with red markings; upper portion light green merging into black. Kuring-gai area. Sandy soils. Vulnerable. Fl. Aug.–Feb. . . . . **C. hunteriana** Nicholls
- 1 Leaves 1–3, broad- to narrow-lanceolate, 5–10 cm long . . . . . 2
- 2 Labellum very concave, forming a hood over the rest of the flower, broad, erect, striate, reticulate, with a broad median vertical ridge. Flowers 2–10. Coast to Blue Mts Sandy soils. Fl. Nov.–April . **C. erecta** R.Br.
- 2 Labellum not forming a concave hood, horizontal, straight . . . . . 3
- 3 Labellum broad but the margins much reflexed and thus appearing narrow; lamina smooth, glossy, with a bilobed glandular process near the apex. Sepals and petals linear. Flowers 2–14. Plant 15–80 cm high. Coast to Blue Mts Sandy soils. Fl. Oct.–March. . . . . **C. subulata** (Labill.) Rchb.f.
- 3 Labellum narrow, very dark, pubescent, recurved at the apex; the margins inturred forming a thick linear channelled lamina. Sepals and petals filiform, Flowers 4–15. Plant rarely more than 40 cm high. Chiefly Blue Mts, also coast. Sandy soils. Fl. Nov.–March. . . . . **C. leptochila** F.Muell. ex Benth.

## 26 *Pterostylis* R.Br.

*Greenhoods*

Terrestrial herbs with small globular tubers and succulent slender roots. Leaves often in a rosette and ± ovate, or cauline and lanceolate to linear; the rosette in many species dissociated from the flowering stem, and often absent at flowering time. Flowers solitary, or from few to many in a terminal raceme. Perianth usually green but often red with red-brown tints. Dorsal sepal very concave, usually much incurved; lateral margins dove-tailed into or connate with those of the petals to form a hood over the column (Fig. 44). Lateral sepals ± connate in their lower portions to form a lip in front of the column, or deflexed against the ovary, or rarely spreading; lower portions divergent and often tapering into fine points. Labellum usually small, ovate to linear or rarely filiform, attached to the projecting foot of the column by a moveable claw which is usually ± irritable and occasionally furnished with long translucent hairs, usually undivided, frequently with a curved brush-like appendage below its junction with the column foot. Column elongate inside the hood and ± attached to the median line of its wall; the upper part with translucent wings on either side of the rostellum; the base prolonged into a nearly horizontal foot. Anther very blunt, with 2 pollen sacs; pollinia 4, powdery. Stigma often prominent, near the middle of the column; rostellum higher up, just below the pollinia; caudicle absent.

### *Key to the species*

- 1 Basal leaves in a cluster or rosette encircling the base of the stem, always present at flowering time. Cauline leaves reduced to sheathing bracts or well developed and scattered . . . . . **GROUP 1**
- 1 Basal leaves in a cluster or rosette usually separated from the flowering stem, sometimes attached to its base by a short scape, but very rarely encircling it and often present at flowering time. Cauline leaves alternate, reduced to scales near the base, usually well developed above but occasionally bract-like . . . . . **GROUP 2**



## Group 1

### Basal leaves in a cluster or rosette encircling the base of the stem

- 1 Stem leaves reduced to sheathing bracts. . . . . 2
- 1 Stem leaves well developed . . . . . 22
  
- 2 Flower solitary . . . . . 3
- 2 Flowers in racemes . . . . . 14
  
- 3 Labellum 2-fid. Stem bracts 1–2 . . . . . 4
- 3 Labellum entire. Stem bracts 2–3. . . . . 5
  
- 4 Labellum deeply divided, 12–16 mm wide. Plants 6–25 cm high. Leaves ovate. Perianth green, often with pinkish tints. Coast. Fl. April–July. *Snake’s Tongue Orchid* . . . . . **P. ophioglossa** R.Br.
- 4 Labellum very broadly bi-dentate, up to 10 mm long. Plant 6 to more than 30 cm high. Leaves ovate. Perianth green with brown. Widespread. Fl. May–Aug . . . . . **P. concinna** R.Br.
  
- 5 Labellum linear-lanceolate, curved downwards . . . . . 6
- 5 Labellum oblong or ovate, not curved downwards. . . . . 11
  
- 6 Flower much bent over. . . . . 7
- 6 Flower erect . . . . . 8
  
- 7 Perianth green, c. 16 mm long. Labellum 9–13 mm long. Leaves ovate to oblong 1–4.5 cm long. Plant to 20 cm high. DSF and WSF. Coastal. Fl. March–July . . . . . **P. hispidula** Fitzg.
- 7 Perianth green, 2–3 cm long. Labellum 12–16 mm long. Leaves ovate to oblong, 2–9 cm long. Plant to 40 cm high. Widespread. Fl. April–Oct. *Parrot’s Beak Orchid* . . . . . **P. nutans** R.Br.
  
- 8 Free points of lateral sepals reflexed. Flower up to 6 cm long. Plant 20–40 cm high. Leaves oblong to broad-lanceolate. Perianth light green with fawn. Coast. Fl. Aug.–Oct. *King of the Greenhoods*. . . . . **P. baptistii** Fitzg.
- 8 Free points of lateral sepals erect. Flower up to 3 cm long. . . . . 9
  
- 9 Sepals acuminate, long. Plant 12–20 cm high. Leaves ovate to broad-lanceolate. Perianth green. Widespread. Fl. March–June . . . . . **P. acuminata** R.Br.
- 9 Sepals acute, short. Plant 10–26 cm high. Leaves ovate. Perianth green, often with brown . . . . . 10
  
- 10 Labellum slightly twisted above the middle, 12–14 mm long. Widespread . . . . . **P. curta** R.Br.
- 10 Labellum not twisted, 9–11 mm long. Mt Kembla; Terrigal. Fl. Aug.–Oct. . . . . **P. hildae** Nicholls
  
- 11 Lateral sepals linear-subulate; the tails c. 15 mm long. Perianth green with red-brown or chiefly red-brown. . . . . 12
- 11 Lateral sepals attenuated into filiform tails; the tails 3–10 cm long. . . . . 13
  
- 12 Flowers c. 15 mm long, white and green with reddish-brown to black on the hood. Plant 10–27 cm high. Leaves ovate to oblong up to 6.5 cm long. Widespread. WSF. Fl. Aug.–Oct. *Little Red Riding Hood* . . . . . **P. pedunculata** R.Br.
- 12 Flowers c. 20 mm long, white with brownish markings. Plant up to 35 cm long. Leaves ovate to oblong, up to 5 cm long. Coast and adjacent plateaus. WSF. Fl. winter–spring. . . . . **P. erecta** T.E.Hunt
  
- 13 Tails of the lateral sepals 3–4 cm long, upright or drawn backwards across the dorsal sepal. Perianth green, 15 mm long. Plant 8–14 cm high. Leaves ovate. Coast. Fl. April–July. *Prawn Greenhood* . . . . . **P. pedoglossa** Fitzg.
- 13 Tails of the lateral sepals 8–10 cm long, hanging vertically below the flower. Flowers 1–4. Perianth green with reddish markings. Plant 12–20 cm high. Leaves broad-ovate, often withered at flowering time. Coast. Fl. Oct.–Dec. . . . . **P. woollsii** Fitzg.
  
- 14 Lateral sepals with filiform tails 8–10 cm long . . . . . **P. woollsii** (see above)
- 14 Lateral sepals without long tails. . . . . 15

- 15 Labellum red-brown brownish or black . . . . . 16
- 15 Labellum green . . . . . 20
- 16 Lateral sepals reflexed against the ovary, joined section flat, margins strongly reflexed, free points reflexed. Perianth green, with a dark brown to black labellum. Plants 15–40 cm high. Leaves ovate to orbicular. Coast in the south of the area. Endangered. Fl. Aug.–Nov. . . . . **P. gibbosa** R.Br.
- 16 Lateral sepals deflexed but not against the ovary. Perianth dark reddish-brown or green with dark markings . . . . . 17
- 17 Labellum obovate 4.5–5 mm long. Leaves obovate. Lateral sepals with joined section shallowly concave, margins strongly incurved, free points curved forward. Plants to 25 cm high. Western Sydney. Endangered. Fl. Sept.–Nov. . . . . **P. saxicola** D.L.Jones & M.A.Clem.
- 17 Labellum oblong, c. 4 mm long . . . . . 18
- 18 Flowers nodding on slender pedicels, with brown, grey or red-brown marks. Lateral sepals subulate, free points curved backwards. Labellum with 8–10 pairs of marginal hairs c. 1.6 mm long. Widespread. Fl. Sept.–Dec. . . . . **P. rufa** R.Br.
- 18 Flowers ± erect . . . . . 19
- 19 Lateral sepals folded inwards at the margin only. Flowers c. 1.5 cm long, green, with pale rusty brown marks. Apices of sepals produced into needle-like points. Labellum with 5–10 pairs of marginal hairs 0.3–2.5 mm long. Blue Mts Fl. Sept.–Dec. . . . . **P. aciculiformis** (Nicholls) M.A.Clem. & D.L.Jones
- 19 Outside third of lateral sepals folded inwards, edges nearly touching beneath labellum. Flowers c. 1 cm long, with green and red markings. Labellum with 2–4 pairs of marginal hairs c. 0.6 mm long. Blue Mts Fl. Sept.–Nov. . . . . **P. pusilla** R.S.Rogers
- 20 Appendage at the base of the labellum pointing inwards. Perianth 6–9 mm long. Plant up to 30 cm high. Leaves narrow-ovate to lanceolate. Widespread. Fl. Sept.–Dec. . . . . **P. mutica** R.Br.
- 20 Appendage at the base of the labellum pointing outwards . . . . . 21
- 21 Labellum appendage dark green; middle lobe long, pointed. Flower c. 8 mm long. Plant up to 20 cm high. Widespread. Open forest and grassland. Fl. spring–summer. . . . . **P. cycnocephala** Fitzg.
- 21 Labellum appendage blackish; middle lobe short, blunt. Flower c. 10 mm long. Plant up to 40 cm high. Widespread. Open forest and grassland. Fl. spring–summer . . . . . **P. bicolor** M.A.Clem. & D.L.Jones
- 22 Labellum narrow ovate, brown. Lower sepals erect but inclined forward. Lower leaves petiolate, lanceolate-ovate, 4–8 cm long, passing into stem bracts. Flower solitary. Perianth 4–6 cm long, green with tinges of brownish-red at the tips of the segments. Plant up to c. 20 cm high. Southern parts of the Blue Mts Fl. Nov.–Jan. *Sickle Orchid* . . . . . **P. falcata** R.S.Rogers
- 22 Labellum filiform, beset with long yellow hairs almost to the apex. Plant 12–20 cm high. Leaves numerous, lanceolate, 2–3 cm long, crowded near the base of the stem, tipped with red-brown. Perianth c. 4 cm long, pale green, with fine darker green veins . . . . . 23
- 23 Flowers leaning forward. Coast. Endangered. Fl. Aug.–Nov. . . . **P. sp. 'Botany Bay'**(Bishop J221/1-13)
- 23 Flowers held ± erect. Blue Mts Fl. Aug.–Oct. . . . . **P. plumosa** Cady

## Group 2

**Basal leaves in a cluster or rosette usually separated from the flowering stem**

- 1 Flowers solitary or rarely 2 . . . . . 2
- 1 Flowers several in racemes . . . . . 13
- 2 Labellum usually notched at the tip, occasionally obtuse. Plant 10–15 cm high. Leaves linear to broad-lanceolate. Perianth green with red-brown, 2–3 cm long. Blue Mts and Illawarra Escarp. Vulnerable. Fl. April–May. . . . . **P. pulchella** Messmer
- 2 Labellum always entire . . . . . 3

- 3 Labellum narrow-oblong for half its length then becoming filiform and terminating in a gland at its apex. Plant 14–24 cm high. Leaves ovate. Perianth green with red-brown, up to 4 cm long. Petal margins widely flared, red-brown. Widespread. Fl. April–Aug. . . . . **P. grandiflora** R.Br.
- 3 Labellum acuminate or obtuse . . . . . 4
- 4 Labellum acuminate . . . . . 5
- 4 Labellum always very obtuse . . . . . 11
- 5 Dorsal sepal apex acuminate, tip to 3 mm long, Petals bluntly truncate, margins decurved. Leaves 2–5, lanceolate to ovate. Perianth 35–50 mm long, translucent green, longitudinally striped with darker green or red. Labellum sometimes blunt at the apex. Plant 5–16 cm high. Coast. Fl. April–July. . . . . **P. truncata** Fitzg.
- 5 Dorsal sepal apex filiform tip longer than 3 mm . . . . . 6
- 6 Perianth mainly white with green or brown bands. Labellum brown to red-brown, 10–13 mm long. Plants 15–45 cm high. Basal leaves ovate to hastate. Blue Mts . . . . . **P. laxa** Blackmore
- 6 Perianth green and red or red-brown . . . . . 7
- 7 Sinus between the lower sepals broad, flat or raised when viewed from front, may have small central notch. Petal margins flared or decurved. . . . . 8
- 7 Sinus between the lower sepals narrow, V-shaped when viewed from front. Petal margins decurved. . . . . 9
- 8 Flowers less than 20 mm long, green and white, shining. Petal margins decurved. Plant up to c. 15 cm high. Coast and adjacent plateaus. Moist places. Fl. autumn–winter . . . . . **P. alveata** Garnet
- 8 Flowers more than 20 mm long. Petals acute, margins flared. Plant 12–22 cm high. Basal leaves usually absent at flowering time. Perianth c. 4 cm long, mainly bright red with some green. Blue Mts Fl. Jan.–March . . . . . **P. coccinea** Fitzg.
- 9 Flower erect. Lower part of the hood not as long as the upper curved part. Plant 7–24 cm high. Basal leaves ovate; cauline leaves linear to narrow-lanceolate. Perianth green with darker bands, 2–3 cm long. Widespread. Fl. March–May. *Dainty Greenhood* . . . . . **P. reflexa** R.Br.
- 9 Flower nodding. Lower part of the hood longer than the upper curved part . . . . . 10
- 10 Perianth green and white. Flower up to 30 mm long. Plant 15 cm high. Widespread. Fl. Feb.–June . . . . . **P. revoluta** R.Br.
- 10 Perianth green with brownish markings. Flower up to 25 mm long. Plant up to 25 cm high. Coast and adjacent plateaus; lower Blue Mts DSF and heath in moist places. Fl. winter . . . . . **P. longipetala** Rupp
- 11 Cauline leaves c. 15 mm long. Basal leaves usually 3, c. 15 mm long. Plant 15–20 cm high. Perianth green streaked with red, 25 cm long excluding the filiform ends (3 cm) of the sepals. Widespread in colder parts. Fl. winter . . . . . **P. fischii** Nicholls
- 11 Cauline leaves 3–4 cm long . . . . . 12
- 12 Cauline and basal leaves similar in shape and size; the margins often crenate. Plant 12–25 cm high. Perianth green with red near the tips of the segments, c. 25 mm long excluding the filiform ends (2 cm) of the sepals. Widespread. Fl. Feb.–June . . . . . **P. obtusa** R.Br.
- 12 Cauline leaves c. half as wide as the basal leaves. Plant 10–30 cm high. Perianth green streaked with red, c. 3 cm long excluding the filiform ends (2–3 cm) of the sepals. Colder parts of the area. Uncommon. Fl. summer. *Summer Greenhood* . . . . . **P. decurva** R.S.Rogers
- 13 Lower sepals erect. . . . . 14
- 13 Lower sepals spreading or deflexed . . . . . 15
- 14 Perianth shine, green and white, apex darker green, 6–7.5 mm long. Scape and ovary fleshy. Labellum not visible. Plant to 15 cm high. Damp places. Uncommon. Fl. summer . . . . . **P. uliginosa** D.L.Jones
- 14 Perianth green and white, apex often red-brown, 7–10 mm long. Labellum just visible. Plant 5–35 cm high. Widespread. Fl. chiefly autumn. *Baby Greenhood* . . . . . **P. parviflora** R.Br.

- 15 Labellum with 2 conspicuous lateral lobes. Leaves less than 3 cm long, arising laterally from the base of the stem. Perianth green and white, 6–8 mm long. Plant 12–30 cm high. Widespread. Fl. April–July . . . . . **P. daintreana** Benth.
- 15 Labellum without 2 conspicuous lateral lobes. Leaves arising only on non-flowering plants . . . . . 16
- 16 Labellum green with a blackish stripe down the centre, more than 2 mm wide. Flowers c. 15 mm long. Leaves 3–6 cm long (rarely longer). Plants 12–90 cm high. Widespread. Open forest and heath. Moist places. Fl. April–Oct. . . . . **P. longifolia** R.Br.
- 16 Labellum dark brown, less than 2 mm wide. Flowers c. 10 mm long. Plants 15–50 cm high. Woronora Plateau; Illawarra ranges. Open forest. Moist places. Fl. winter. . . **P. tunstallii** D.L.Jones & M.A.Clem.

## 27 *Erythrorchis* Blume

1 species endemic Aust.; Qld, NSW

### *One species in the area*

Terrestrial, leafless saprophytes with thick fleshy rhizomes. Stems usually numerous, branching, up to 6m long, climbing on tree trunks by means of short sucker-like aerial roots. Flowers very numerous in terminal panicles; pedicels 8–10 mm long. Perianth brown and yellow. Bracts at the base of the branches and panicles ± stem clasping. Sepals and petals almost equal but the petals narrower. Labellum sessile, undivided, 12–14 mm long, whitish with brown or red streaks, anteriorly undulate-crisped. Column long, erect, not winged or very obscurely so, shorter than the labellum. Anther with 2 pollen sacs, operculate, with a broad flat or convex dorsal appendage; pollinia 2, deeply bilobed, without a caudicle; pollen granular-farinaceous or waxy. Seeds winged, in large irregularly terete capsules. Coast to Blue Mts Shady places. Fl. spring–summer. *Climbing Orchid*. . . . . **E. cassythoides** (A.Cunn. ex Lindl.) Garay

## 28 *Gastrodia* R.Br.

7 species in Aust. (6 endemic, 1 native); all states and territories except NT

Leafless, terrestrial saprophyte with tuberous rhizomes. Flowers in a terminal raceme. Perianth segments connate into a 5-lobed tube very gibbous at the base under the labellum. Labellum shorter than the perianth and connate with it at the base; margins crisped or undulate; lamina with two longitudinal ridges converging and uniting towards the front or occasionally with only one ridge. Column erect, elongate, slightly winged. Anther almost hemispherical; pollinia 2, bilobed, granular; caudicle absent.

### *Key to the species*

- 1 Racemes with up to 20 flowers. Perianth whitish; tube 10–12 mm long. Sepals 2–3 mm long. Labellum yellow obscurely 3-lobed. Stems up to 70 cm long, with 3–6 short scaly bracts. Capsule 10–15 mm long. Coast to Blue Mts Fl. late winter–summer. *Potato Orchid*. . . . . **G. sesamoides** R.Br.
- 1 Racemes with up to 75 flowers. Perianth brown with white tips on outside, white on inside; tube 15–20 mm long. Sepals c. 5 mm long. Labellum orange prominently 3-lobed. Stems up to 90 cm high with 6–8 short scaly bracts. Capsule 25–30 mm long. Blue Mts Fl. spring–summer . . . . . **G. procera** G.W.Carr

## 29 *Rhizanthella* R.S.Rogers

2 species endemic Aust.; Qld, NSW, WA

### *Monotypic endemic genus*

Subterranean saprophyte with fleshy rhizomes up to 15 cm long, clothed with imbricate scaly bracts. Flowers 15–30 in terminal heads. Perianth segments free. Dorsal sepal 5–8 mm long, concave. Lateral sepals 8–12 mm long, acuminate. Petals acute, 4–6 mm long. Labellum ovate, papillose, dark reddish-purple. Column 4–6 mm long, with 3-fid appendages level with the rostellum. Flowers pollinated and fertilized below the ground. The fruits are pushed to the surface where the seeds are dispersed. Coast; Blue Mts Vulnerable. Fl. Oct.–Nov. *Underground Orchid* . . . . **R. slateri** (Rupp) M.A.Clem. & P.J.Cribb

### 30 *Spiranthes* Rich.

1 species native Aust.; Qld, NSW, Vic., Tas.

#### *One species in the area*

Terrestrial herb 16–50 cm high, with oblong tubers or thick fibrous roots. Leaves 3–10, chiefly basal, linear, 4–10 cm long. A few bracts present on the stem. Flowers small, spirally arranged in a terminal spike. Perianth bright pink; segments almost equal, 4–5 mm long. Dorsal sepal ovate, concave. Lateral sepals free, erect or spreading. Petals truncate, forming with the dorsal sepal a hood sheltering the column. Labellum undivided, mostly white, on a short claw; the margins at least partially fringed or denticulate; the tip recurved; lamina with 2 ovoid glands at the base. Column shorter than the labellum, erect, contracted basally. Anther usually blunt with 2 pollen sacs. Column wings membranous. Stigma large, U-shaped, rostellum higher than the anther. Pollinia in 2 pairs, granular; caudicles present. Wet places throughout the area. Fl. summer. *Ladies Tresses* . . . . . **S. australis** (R.Br.) Lindl.

### 31 *Cestichis* Thouars & Pfitzer

8 species endemic Aust.; Qld, NSW

Terrestrial or epiphytic herbs. Stems sometimes thickened into pseudobulbs. Leaves at or near the apex of the stem, basal or nearly so. Flowers in terminal pedunculate racemes. Sepals and petals all free spreading or reflexed, c. equal in length but the dorsal sepal and petals often narrower than the lateral sepals. Labellum shortly embracing or united with the column at the base, erect or ascending, entire. Column elongated, incurved, winged at the top. Anther terminal, operculate; pollinia 4, obovoid.

#### *Key to the species*

- 1 Peduncle winged. Leaves 4–8 cm long. Flowers pale translucent green with orange tints; odour unpleasant or absent. Labellum cuneate, 5–6 mm long, 5 mm wide; the front margin irregularly denticulate, not reflexed; the shorter narrower base embracing the column. Column slender, erect, slightly to moderately incurved, c. 4 mm long. Epiphyte on tree trunks. Fl. Aug.–Feb. . . . . . **C. coelogynoides** (F.Muell.) M.A.Clem. & D.L.Jones
- 1 Peduncle not winged. Leaves up to 30 cm long. Flowers yellowish-green, rarely reddish-purple, odour unpleasant, sickly. Labellum sessile, entire, reflexed about the middle. Column incurved, 5–6 mm long. Widespread. Rock ledges and crevices. Fl. March–May. *Yellow Rock Orchid*. . . . . **C. reflexa** (R.Br.) M.A.Clem. & D.L.Jones

### 32 *Calanthe* R.Br.

1 species native Aust.; Qld, NSW

#### *One species in the area*

Tall, terrestrial herb with fleshy rhizomes. Stems reduced to short pseudobulbs. Leaves up to 90 cm long, pale green. Scapes up to 1.5 m long with sheathing bracts. Flowers numerous in a terminal raceme, up to 3 cm diam. Perianth white; segments nearly equal, free, spreading. Labellum spurred, adnate to the base of the column; lamina 3-lobed, with several calli. Column short. Anther operculate; pollinia 8, tapering below, fixed to a divisible gland. Coast. Deep shaded gullies. Fl. summer. *Scrub Lily* . . . . . **C. triplicata** (Will.) Ames

### 33 *Dendrobium* Sw.

71 species in Aust. (52 endemic, 19 native); all states and territories except S.A.

Epiphytes or lithophytes; rhizomes tufted or creeping. Stems erect, creeping or pendulous, stout and rigid or slender and lax, often reduced to short pseudobulbs about the base. Leaves variously shaped. Flowers usually in racemes rarely solitary. Sepals nearly equal; the lateral pair obliquely dilated at the base, adnate to the column foot to form a spur under the labellum. Petals often as long as or longer than the dorsal sepal. Labellum articulate at the end of the column foot, erect, concave near the base; the lamina with longitudinal ridges; the margins expanding into 2 lateral lobes which usually embrace the column; the middle lobe recurved or spreading, acute or less commonly obtuse, occasionally the 3 lobes confluent

into an undivided lamina. Column usually shorter than the labellum, winged or toothed above. Anther operculate; pollinia 4, in pairs, waxy.

### Key to the species

- 1 Leaves long, terete succulent circular in cross section or  $\pm$  flattened. Flowers not resupinate (i.e. labellum uppermost in flower) . . . . . 2
- 1 Leaves not terete thin to leathery, conduplicate, Stems swollen for at least part of their length. Flowers usually resupinate ie labellum lower most in flower . . . . . 4
- 2 Leaves obscurely corrugated, usually curved, 6–11 cm long. Rhizomes creeping on rocks. Stems branching, pendulous, 25–50 cm long. Flowers solitary or 2 together, 25–30 mm diam. Coast to Blue Mts On rocks. Fl. Sept.–Nov. . . . . **D. striolatum** Rchb.f.
- 2 Leaves smooth, pendulous, 10–70 cm long. Stems up to 2 m long. Racemes lateral or from the bases of the leaves, many-flowered. *Pencil Orchids*. . . . . 3
- 3 Perianth white cream or yellowish, 5–6 cm diam; the labellum sometimes dotted or striped with red. Leaves mostly c. 5 mm diam., 10–50 cm long. On trees (usually Casuarinaceae). Fl. July–Oct. *Rats-tail Orchid* . . . . . **D. teretifolium** R.Br.
- 3 Perianth greenish or the base striated with red or purple-brown, 6–10 cm diam. Leaves mostly 4 mm diam., 10–70 cm long. Blue Mts; lower Hunter River Valley. RF. Fl. Aug.–Oct. . . . . **D. fairfaxii** F.Muell. & Fitzg.
- 4 Stems swollen, not branched. Leaves clustered . . . . . 5
- 4 Stems not swollen, usually branched. Leaves not clustered . . . . . 10
- 5 Stems swollen from close to the base and thickest near the base. Plants 12–80 cm high. Leaves 2–5 on each stem, thick, leathery, 8–24 cm long. Racemes almost terminal, up to 45 cm long, many-flowered. Perianth cream white or yellow, c. 4 cm diam. Coast to Blue Mts On trees and rocks. Fl. Aug.–Oct. *Rock Lily* . . . . . **D. speciosum** Sm.
- 5 Stems thickest above the base . . . . . 6
- 6 Upper part of stems swollen, square in cross-section; lower part thin and wiry. Perianth green to deep yellow . . . . . 7
- 6 Upper part of stem circular in cross-section; lower part not thin and wiry. . . . . 8
- 7 Dorsal sepal up to 30 mm long. Leaves 2–5, broad-lanceolate, 3–7 cm long. Plants 6–45 cm long. Coast. Humid places; on rocks and trees. Fl. chiefly spring. *Spider Orchid* . . . . . **D. tetragonum** A.Cunn.
- 7 Dorsal sepal more than 35 mm long. Leaves 2–4, elliptic 4–9 cm long. Plants up to 50 cm long. Coast. On rocks and trees, particularly *Melaleuca styphelioides*. Endangered. Fl. winter–spring . . . . . **D. melaleucaphilum** M.A.Clem. & D.L.Jones
- 8 Racemes 20 cm long or longer. Perianth white to cream. Dorsal sepal 15–30 mm long. Labellum with purplish spots and stripes. Some roots erect. Leaves elliptic to oblong, up to 25 cm long. Plant up to 100 cm high. Coast and adjacent plateau north of the Hawkesbury River. RF and open forest. Growing on trees or rocks. Fl. winter–spring (hybridizes with *D. gracilicaule*) . . . **D. tarberi** M.A.Clem. & D.L.Jones
- 8 Racemes up to 20 cm long. . . . . 9
- 9 Perianth white to pale yellow or pale pink. Leaves 2–4, at the apex of each stem, ovate, 3–7 cm long. Racemes 5–10 cm long. Plants 10–30 cm long. Coast. Open forests or RF; on trees. Fl. Aug.–Oct. *White Feather Orchid* or *Ironbark Orchid* . . . . . **D. aemulum** R.Br.
- 9 Perianth deep yellow with dense red markings on the outside. Leaves 3–6 at the apex of each stem, elliptic, up to 13 cm long. Racemes 5–12 cm long. Plants up to 90 cm long. Coast. Epiphyte in RF and in open forest; sometimes on rocks. Fl. winter–spring . . . . . **D. gracilicaule** F.Muell.
- 10 Leaves tapering to a dagger-like point, 2–5 cm long, 1–2 cm wide. Stems chiefly aerial, draped from the branches of trees, up to 1 m long. Flowers solitary or 2–3 together. Perianth light green with purple or red. Coast to Blue Mts On trees. Fl. Oct.–Nov. *Dagger Orchid*. (hybridizes with *D. linguiforme* and *D. striolatum*) . . . . . **D. pugioniforme** A.Cunn.



- 10 Leaves with obtuse tips. Stems creeping . . . . . 11
- 11 Leaves corrugated above, ovate, 2–3 cm long. Perianth white with faint purple. Flowers numerous in racemes 6–12 cm long. Coast to Blue Mts On rocks. Fl. Aug.–Nov. *Tongue Orchid* or *Button Orchid* . . . . . **D. linguiforme** Sw.
- 11 Leaves tuberculate, resembling small gherkins. Perianth yellowish white or greenish white with red, 3 cm diam. Burratorang Valley. Usually on trees. Fl. chiefly late summer. *Cucumber Orchid* . . . . . **D. cucumerinum** Macleay & Lindl.

### 34 *Bulbophyllum* Thouars

32 species in Aust. (28 endemic, 4 native); Qld, NSW

Small, epiphytic herbs with ± extensively creeping stems usually covered with thin scarious sheathing bracts. Pseudobulbs from the creeping stems usually minute, bearing solitary or paired leaves at the top (Fig. 44). Flowers usually small, solitary or in racemes; pedicels arising in the axils of the sheathing bracts of the creeping stems. Sepals erect, free, nearly equal; the lateral pair dilated at the base, adnate to the column foot to form a short blunt spur. Petals usually much shorter than the sepals. Labellum articulate at the end of the column foot, usually clawed and undivided. Column very short; the apex bidentate. Anther operculate, terminal; pollinia 4, waxy, without a caudicle.

#### *Key to the species*

- 1 Flowers solitary, often numerous . . . . . 2
- 1 Flowers in racemes, few, scattered . . . . . 3
- 2 Flowers crowded, on pedicels 5–9 mm long. Perianth whitish. Leaf thick, succulent, solitary, 2–4 cm long. Creeping stems extensive, rather intricate. Bracts conspicuous. Pseudobulbs minute. Widespread. RF and humid areas. Fl. chiefly spring. *Wheat-leaved Orchid* . . . . . **B. shepherdii** (F.Muell.) F.Muell.
- 2 Flowers scattered. Perianth red. Leaf thin, coriaceous, minute, often withering early. Stems creeping. Pseudobulbs orbicular, 1–2 mm diam. Humid areas north and south of Sydney. On tree trunks and branches. Fl. Oct.–Nov. . . . . **B. minutissimum** F.Muell.
- 3 Pseudobulbs 4–10 mm diam., ovoid-globular. Leaf solitary, 1–5 cm long. Perianth whitish or pale green. On trees and rocks in humid areas. Fl. chiefly autumn . . . . . **B. exiguum** F.Muell.
- 3 Pseudobulbs 11–13 mm diam., ovoid, tubercular. Leaves 1–2, 5–10 cm long. Perianth usually green or yellow with dark red or purplish labellum. Coast; Hunter River Valley; Blue Mts Fl. May–Nov. *Pineapple Orchid* . . . . . **B. elisae** (F.Muell.) Benth.

### 35 *Dipodium* R.Br.

*Hyacinth Orchids*

11 species in Aust. (10 endemic, 1 native); all states and territories

Terrestrial, saprophytic herb leafless, but the stems with loosely imbricate sheathing bracts at the base. Flowers in a terminal raceme on a long scape, often numerous and showy, usually spotted. Sepals and petals nearly equal, free, spreading. Labellum sessile, semi-terete, adnate to the column at its base and then ± gibbous, 3-lobed; the lateral lobes rather small; the middle lobe longer, usually oblong-ovate, pubescent near the apex. Column erect, semi-cylindrical, with sinuate or dentate membranous margins. Anther operculate; pollinia 2; deeply bilobed or in 4 pairs; caudicle present.

#### *Key to the species*

- 1 Pedicel and ovary with reddish spots, together 12–25 mm long. Perianth segments up to 20 mm long, cream to pale pink with red spots. Labellum mauve to deep pink. Widespread. DSF; WSF; heath. Fl. spring–summer. . . . . **D. variegatum** M.A.Clem. & D.L.Jones
- 1 Pedicel and ovary without reddish spots . . . . . 2



- 2 Perianth segments dull to bright greenish yellow with deep pink spots, up to c. 25 cm long. Labellum white with pink and yellowish markings. Stems green, spotted, up to 60 cm high. Flowers 6–15 per raceme. Coast. Uncommon. Fl. summer . . . . . **D. hamiltonianum** F.M.Bailey
- 2 Perianth segments white to pink with reddish markings. Stems usually reddish . . . . . 3
- 3 Perianth segments dark pink with heavy darker markings; the tips straight or slightly recurved, up to 18 mm long. Plant up to c. 50 cm high. Widespread. DSF and WSF. Fl. summer–autumn . . . . . **D. punctatum** (Sm.) R.Br.
- 3 Perianth segments pale pink with light darker markings; the tips distinctly recurved, up to 20 mm long. Plant up to c. 50 cm high. Widespread. DSF and WSF. Fl. summer–autumn. . . . . **D. roseum** D.L.Jones & M.A.Clem.

### 36 *Cymbidium* Sw.

3 species endemic Aust.; Qld, NSW, WA, NT

Epiphytes on trees. Stems usually short and reduced to pseudobulbs covered with sheathing leaf bases, but occasionally longer and not pseudobulbous. Leaves long, narrow, channelled or at least slightly concave above. Flowers numerous, in often long racemes pedunculate in the lower leaf axils; peduncles usually with rigid sheathing bracts at the base. Sepals and petals nearly equal, free, spreading. Labellum sessile at the base of the column, slightly concave above, 3-lobed or sometimes undivided. Column erect or slightly incurved, semi-terete. Anther operculate, concave; pollinia 2, or 4 united in pairs.

#### *Key to the species*

- 1 Stems not pseudobulbous, up to 30 cm long. Racemes c. 20 cm long. Leaves flaccid, shining green, 18–35 cm long, less than 2 cm wide. Flowers numerous. Perianth golden green to light green, sometimes with indistinct red blotches, c. 3 cm diam. Coast to Blue Mts Epiphytic on hollow logs and branches. Fl. spring–early summer. *Snake Orchid* . . . . . **C. suave** R.Br.
- 1 Stems pseudobulbous. Racemes 14–40 cm long. Leaves rigid, dull green, 12–40 cm long, 2–4 cm wide, deeply channelled above. Flowers numerous. Perianth variable in colour combining green brown and purple, spotted with purplish-brown or red, 3–4 cm diam. Gosford District. Fl. spring–early summer. *Tiger Orchid*. . . . . **C. canaliculatum** R.Br.

### 37 *Sarcochilus* R.Br.

16 species endemic Aust.; Qld, NSW, Vic., Tas.

Epiphytic herbs usually with rather short stems covered by the persistent bases of the older leaves. Leaves broad-lanceolate to linear, sometimes channelled, often ± falcate, Racemes axillary, with few or many flowers. Sepals and petals nearly equal, free, spreading; the lateral sepals ± dilated at the base, adnate to the column foot, Labellum articulate at the end of the column foot, without a basal spur, 3-lobed; lateral lobes erect; middle lobe small, with a large fleshy dorsal protuberance or spur at its base; lamina between the lateral lobes with various forms of calli. Column short, erect, with a prominent foot. Anther operculate; pollinia 4, in pairs; caudicle present.

#### *Key to the species*

- 1 Leaves linear, often spotted. Perianth white or pink. Labellum with lateral lobes shorter than the middle lobe. Leaves 3–6 cm long. Racemes with 2–6 flowers. Mainly coast. On trees in humid places. Fl. summer . . . . . **S. hillii** (F.Muell.) F.Muell.
- 1 Leaves narrow-oblong to lanceolate. Perianth greenish or white. . . . . 2
- 2 Sepals and petals narrow-oblong or sometimes almost falcate. Stem 1–6 cm long. Leaves dark green, 5–14 cm long, thick, falcate. Racemes with 2–11 flowers. Perianth 20–35 mm diam., olive-green or golden. Coast. On trees, usually RF. Fl. Oct.–Nov. . . . . **S. parviflorus** Lindl.
- 2 Sepals and petals broad-ovate to broad-lanceolate. . . . . 3

- 3 Perianth white except for coloured markings on the labellum, 20–35 mm diam. Leaves pale green. Widespread. On trees, usually RF. Fl. chiefly Oct. *Orange-blossom Orchid* . . . . . **S. falcatus** R.Br.
- 3 Perianth greenish brown, 15–30 mm diam. Labellum white with coloured markings. Leaves nearly straight, lanceolate, 3–7 cm long, slightly twisted. Flowers 5–14 per raceme. Widespread. On trees in humid places. *Butterfly Orchid* . . . . . **S. australis** (Lindl.) Rchb.f.

### 38 Plectorrhiza Dockrill

3 species endemic Aust.; Qld, NSW, Lord Howe Isd.

#### *One species in the area*

Epiphytic herbs with stems up to 30 cm long. Roots aerial, often tangled. Leaves 4–10 cm long, linear to lanceolate. Flowers in racemes, either in alternating rows or facing all ways, usually facing upwards, 3–10 per raceme. Perianth 10–12 mm diam.; segments similar, free, short or rather long and narrow, brown and green or light and dark green; labellum immovable, joined to the column foot, saccate with a callus within the front of the sac, 3-lobed; lateral lobes ± erect; middle lobe short or long, usually fleshy, sometimes whitish. Column short, with a distinct broad foot not sharply defined from the base of the labellum; pollinia 4, unequal, united in pairs. Coast to Blue Mts Fl. Sept.–Jan. *Tangle Orchid*. . . . . **P. tridentata** (Lindl.) Dockrill

### 39 Papillilabium Dockrill

1 species endemic Aust.; Qld, NSW

#### *One species in the area*

Epiphytic herbs with stems less than 5 cm long. Roots creeping on branches. Leaves 2–4, linear, 2–5 cm long. Racemes with 3–7 flowers. Perianth c. 10 mm diam.; segments similar, free, dull green. Labellum 3-lobed, spurred, shortly adnate by the posterior margins of the lateral lobes to the column foot; spur with a ± conspicuous fleshy callus on the posterior wall at its entrance, sometimes septate but the septum often reduced to a midrib; lateral lobes often triangular; middle lobe curved forwards and downwards or sometimes incurved. Column short; the foot also usually short. Anther hooded, rostrate, obtuse; pollinia 4, united in pairs; caudicle present. Gosford district. Fl. Sept.–Dec. . . . . **P. beckleri** (F.Muell. ex Benth.) Dockrill

### 40 Epidendrum L.

1 species naturalized Aust.; Qld, NSW

#### *One species in the area*

Erect terrestrial or lithophytic herb. Stems terete to 1 m long. Leaves cauline, leathery, spreading, 1.5–12 cm long. Flowers red, orange or yellow in a terminal inflorescence. Sepals spreading 10–22 mm long. Petal with undulate margin, 12–20 mm long. Labellum deeply 3-lobed, mid-lobed retuse to deeply lobed. Callus 3-horned. Fruit 2.5–4 cm long. Occasionally naturalized in coastal areas. Introd. from C. & S. America. Fl. all year . . . . . \***E. radicans** Lindl. x **secundum** Jacq. hybrid complex

## 177 LOMANDRACEAE

c. 4 gen., Australia, New Guinea and New Caledonia

### 1 Lomandra Labill.

52 species in Aust. (49 endemic, 3 native); all states and territories

Erect and tufted or decumbent perennials with rhizomes or stolons. Leaves narrow-linear to narrow-oblong, basal or cauline. Flowers unisexual, often clustered, in spikes or panicles or semi-globular heads. Perianth segments 6, arranged in 2 whorls. Male flowers with 6 stamens, 3 attached to the inner perianth segments, the other 3 free; anthers versatile, deeply lobed; ovary rudimentary or absent. Female flowers similar, with a persistent perianth; staminodes present or absent; ovary 3-locular with 1 erect ovule per loculus, superior. Capsule subglobular, glossy.