

## ***Thelymitra reflexa* (Orchidaceae) a new rare species from Victoria, Australia**

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### *Abstract*

*Thelymitra reflexa* Jeanes from Victoria, Australia, a rare new species of the *Thelymitra pauciflora* R.Br. complex, is described as new and illustrated. Its distribution, habitat, biology and conservation status are discussed. A partial key is provided to distinguish *T. reflexa* from other members of the *T. pauciflora* complex.

### **Introduction**

*Thelymitra* J.R.Forst. & G.Forst. is a complex genus of orchids consisting of about 95 described species, several described natural hybrids and at least 15 undescribed taxa. It is concentrated in higher rainfall areas of temperate Australia, but a few species occur in tropical northeastern Australia, about 20 species occur in New Zealand (15 endemic) and a few species occur in Indonesia, New Caledonia, New Guinea and the Philippines.

In my recent revision of the *Thelymitra pauciflora* R.Br. complex (Jeanes 2004), the group was discussed in some detail and 15 new species were described. Members of this complex are characterized by their small (tepals usually <15 mm long), unscented, facultatively autogamous, generally blue, mauve or purplish, unspotted flowers. The post-anther lobe of the column is tubular, variously inflated, smooth on the dorsal surface, variously open on the ventral side, and entire, emarginate or deeply bifid at the apex. The auxiliary lobes are at most rudimentary, consisting of a pair of tiny incurved spurs on the lower apical margin of the post-anther lobe, or more often completely absent. The two finger-like lateral lobes extend forward from the column wing, one on each side of the anther and just below the post-anther lobe. These may be more or less straight, curved gently or bent upwards at right angles near the middle. Each lateral lobe has a tuft of white trichomes (less often yellow or mauve) that may be elongate (resembling a tooth-brush) or short and more or less terminal (resembling a mop).

In my revision (Jeanes 2004) I stated “It is likely that other taxa worthy of recognition exist within this large and diverse complex, but adequate information and collections of these are lacking at present”. These portentous words were realized when I discovered *T. reflexa* within months of submission of the manuscript.

### **Taxonomy**

A key to the *T. pauciflora* complex in Australia was published recently (Jeanes 2004). To include *T. reflexa* in this key, modify couplet 22 and add couplet 22a as follows.

- 22. Tepals reflexing strongly back towards the ovary, particularly at air temperatures of 30 degrees Celsius or more; post-anther lobe uniformly dark blackish green throughout .....***T. reflexa***
- 22. Tepals spreading at about right angles to the ovary, but never reflexing strongly even on the hottest days; post-anther lobe usually bicolorous .....22a
- 22a. Flowers usually 1–3, most often pale blue; lateral lobes 0.5–1 mm long, bent sharply upwards at c. 90° near the middle; post-anther lobe entire or emarginate .....***T. pauciflora***
- 22a. Flowers usually 4–10, most often mauve or deep purplish blue; lateral lobes 1.2–1.5 mm long, curved gently upwards; post-anther lobe often deeply bilobed at the apex .....23



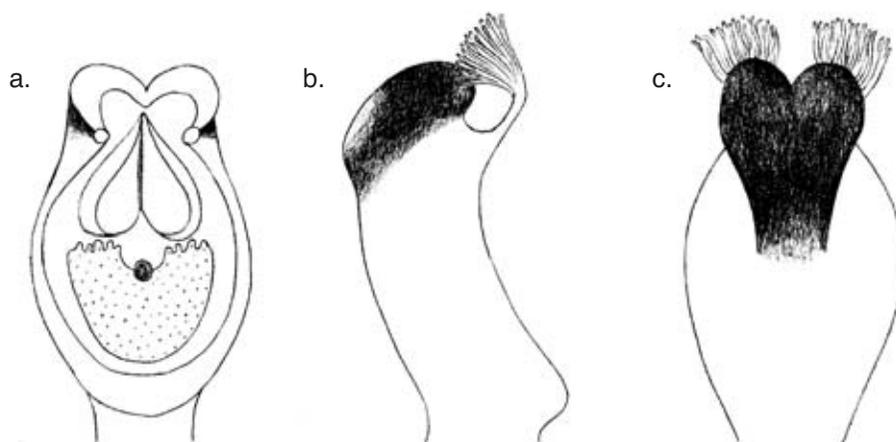
**Figure 1.** *Thelymitra reflexa*: Crib Point, Victoria (photograph by J.A.Jeanes)

***Thelymitra reflexa* Jeanes, sp. nov.**

*T. pauciflorae* R.Br. *affinis sed plantis robustioribus plerumque, floribus pluribus, periantho aperiendi late plus, tepalis reflexis appressis in ovario per caelum calidum, et lobo post-anthera columnae atrovirenti omnino differt.*

*Type:* Victoria. Crib Point, Mornington Peninsula, 15 xi. 2003, J.A. Jeanes 1271 (holotype MEL; isotypes CANB, AD).

Glabrous terrestrial herb. Tubers not seen. Leaf linear to linear-lanceolate, 10–25 cm long, 3–10 mm wide, erect, canaliculate, fleshy, ribbed abaxially, dark green with a purplish base, sheathing at base, apex acute to acuminate. Inflorescence 17–45 cm tall, 0.7–2 mm diam., slender, straight, purplish. Sterile bracts usually 2, occasionally 3, linear to linear-lanceolate, 1.5–6 cm long, 3–7 mm wide, closely sheathing, acute to acuminate, green to purplish. Fertile bracts ovate-acuminate to obovate-acuminate, 4–13 mm long, 3–6 mm wide, sheathing the pedicels, green to purplish. Pedicels 0.5–12 mm long, slender. Ovary narrow-obovoid, 5–15 mm long, 1.5–3.5 mm wide. Flowers 1–6, 14–20 mm across, usually bluish purple, opening only on very hot days with the perianth reflexing strongly. Perianth segments 5–10 mm long, 2.5–5 mm wide, concave, often shortly apiculate; dorsal sepal ovate, obtuse to subacute; lateral sepals lanceolate to ovate, often slightly asymmetric, acute; petals ovate to obovate, obtuse to subacute; labellum obovate to oblanceolate, acute, often slightly smaller than other segments. Column erect from the end of ovary, 4–5.5 mm long, 2–3 mm wide, pink or purplish; post-anther lobe hooding the anther, 1.8–2.5 mm long, 1.3–2 mm wide, tubular, often somewhat compressed dorsally, open or closed on the ventral side, curving through c. 90°, dark blackish green throughout, apex usually deeply bilobed, the lobes 0.5–1 mm long, margins thickened and recurved; post-anther lobe extension 0.4–0.7 mm; auxiliary lobes absent or present as 2 tiny triangular, incurved spurs on the lower apical margin of the post-anther lobe; lateral lobes converging or more or less parallel, 1–1.4 mm long, digitiform, porrect at base, curving upwards, each with a sub-terminal, mop-like, tuft of trichomes that embrace the apex of post-anther lobe, the individual trichomes 0.6–1 mm long, white, rarely pink. Anther inserted above centre of column, ovoid, 1.8–2.3 mm long, 1.3–1.6 mm wide, the connective produced into an apical beak 0.5–0.7 mm long; pollinarium 1.3–1.8 mm long; viscidium more or less circular, c. 0.5 mm diam.; pollinia mealy, friable, white. Stigma situated at base of column, ovate-quadrangle, 1.5–2.2 mm long, 1.2–2 mm wide, margins irregular. Capsules obovoid, 10–15 mm long, 4–6 mm wide, erect, ribbed. (Figs 1 & 2)



**Figure 2.** *Thelymitra reflexa*: **a** column from front (lateral lobes removed) x10; **b** column from side x10; **c** column from rear x10

*Specimens examined:* VICTORIA: Stony Point railway, 12 x. 2004, J.A. Jeanes 1434 (MEL 2209217 & MEL 2209218).

*Distribution and habitat:* Currently known with certainty only from the type locality at Crib Point, nearby Stony Point and on French Island (photographs only) in south-central Victoria. Grows in near-coastal heathy woodland on seasonally damp sandy loams. Probably more widespread than current records suggest and should be looked for in similar habitats in areas such as Anglesea, French Island and Wilsons Promontory. Altitude: 1–5 m.

*Conservation status:* Poorly known. Suggest 2K by criteria of Briggs & Leigh (1996), and Data Deficient (DD) by criteria of IUCN (1994).

*Flowering period:* Early October to late November.

*Pollination biology:* This species is facultatively autogamous.

*Notes:* *Thelymitra reflexa* is probably most closely related to *T. pauciflora* and *T. peniculata* Jeanes with which it shares a slender habit, long narrow leaf and terminal hair tufts on the lateral lobes of the column. It differs from *T. pauciflora* in often having more flowers (up to six) and from *T. peniculata* in being less robust and usually having fewer, slightly smaller more bluish flowers. It differs from both the above species in having flowers in which the perianth segments reflex strongly against the ovary on hot days (of 30 degrees Celsius or more) and its entirely blackish green post-anther lobe on the column.

*Thelymitra reflexa* grows sympatrically with many other *Thelymitra* species and has been observed flowering synchronously with at least 12 other taxa. On hot days it is the only species in the area to display the characteristic reflexed tepals, and this feature is consistent throughout the population. The only other *Thelymitra* species observed by the author to have comparably reflexed tepals is the unrelated and allopatric *Thelymitra luteocilium* Fitzg., but this feature is rare for that species and is not consistent throughout a population at any given time.

*Etymology:* Latin *reflexus*, bent back; although the flowers of this species are reluctant to open except on the hottest of days, when they do so the tepals reflex back against the ovary more than in any other species in the *T. pauciflora* complex.

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