

Two new bladderworts from South India

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Abstract. Two new bladderworts *Utricularia cecilii* sp. nov. and *Utricularia lazulina* sp. nov. from South India are described.

Keywords. *Utricularia cecilii*; *Utricularia lazulina*; bladderworts; new species.

1. *Utricularia cecilii* P. Taylor sp. nov. affinis *U. uliginosae* Vahl sed corolla grandissima labello superiore multolatiore, calycis margine integro, seminis obovoideis testae cellulis elongatis differt.

Type: India, Karnataka, South Kanara, Kulshekar, Taylor 18020 (K holo, BLAT, BSI, CAL, JCB, L, US iso).

Pollen not examined by Huynh, K. L., Étude de la morphologie du pollen du genre *Utricularia* L. *Pollen et spores* 10:11–55 (1968) [4-colporate. $28 \times 31 \mu$ Taylor 18020 (K)].

Small annual terrestrial. Rhizoids moderately numerous, capillary, up to 1 cm long, tapering, from 0.25–0.05 mm thick, bearing several short, minutely papillose branches. Stolons few, capillary, sparsely branched, a few cm long, ca 0.2 mm thick; internodes 2–5 mm long. Leaves few, solitary at each stolon node, petiolate, lamina narrowly obovate, ca 1 mm wide, with apex rounded, 3-nerved; total length up to 1 cm. Traps rather few on the leaves and on the stolon internodes, globose, stalked, subdimorphic, those on the leaves with a shorter stalk of equal thickness throughout, those elsewhere with the stalk distally \pm thickened, 0.5–0.75 mm long, the mouth basal with 2 dorsal, subulate, glandular appendages of varying length. Inflorescence erect, solitary, 5–17 cm long; peduncle angular, narrowly winged, glabrous, 0.5–0.8 mm thick. Scales few, similar to the bracts. Bracts basifixed, broadly ovate-deltoid with apex acute, ca 1.5 mm long, 3-nerved; bracteoles subulate, shorter than the bract. Flowers 1–5, the inflorescence axis elongate; pedicels erect at anthesis, \pm spreading in fruit, filiform, narrowly winged, 2–5 mm long. Calyx lobes slightly unequal; upper lobe broadly ovate, 3–5 mm long with apex acute, lower lobe slightly shorter with apex minutely bidentate. Corolla 1–1.5 cm long, deep violet with a white, violet-nerved patch at the base of the lower lip; upper lip constricted below the middle, the superior part broadly obovate with apex rounded, the inferior part much narrower, quadrate; lower lip limb galeate, approximately circular with apex rounded and with a very prominent, obscurely 3-ridged swelling at the base; palate with a pronounced marginal rim, distally pubescent; spur subulate, straight, with apex very acute, about as long as and held at an obtuse angle to the lower lip. Filaments straight, ca 1.5 mm long; anther thecae distinct. Ovary ovoid, dorsiventrally compressed; style distinct and relatively broad; stigma lower lip semicircular, upper lip much smaller. Capsule ovoid, ca 3 mm long, the wall uniformly

membranous, dehiscing by a single longitudinal ventral slit. Seeds obovoid, *ca* 0.25 mm long with a terminal hilum, reticulate, the testa thin with cells elongate-polygonal and with \pm distinct intercellular spaces (figures 1 and 2).

Distribution. India: Karnataka, South Kanara, vicinity of Mangalore! Known only from the type and *Hohenacker* 71 (W).

Habitat: Shallow wet soil over laterite and “*ad rivulos*” (*Hohenacker*). Flowering in August and September.

U. cecilia P. Taylor is named after Father Cecil Saldanha, S. J. who showed the author this plant and many others in Karnataka in August 1981 and who has made a very large contribution to the knowledge of the flora of the region. It superficially resembles *U.*

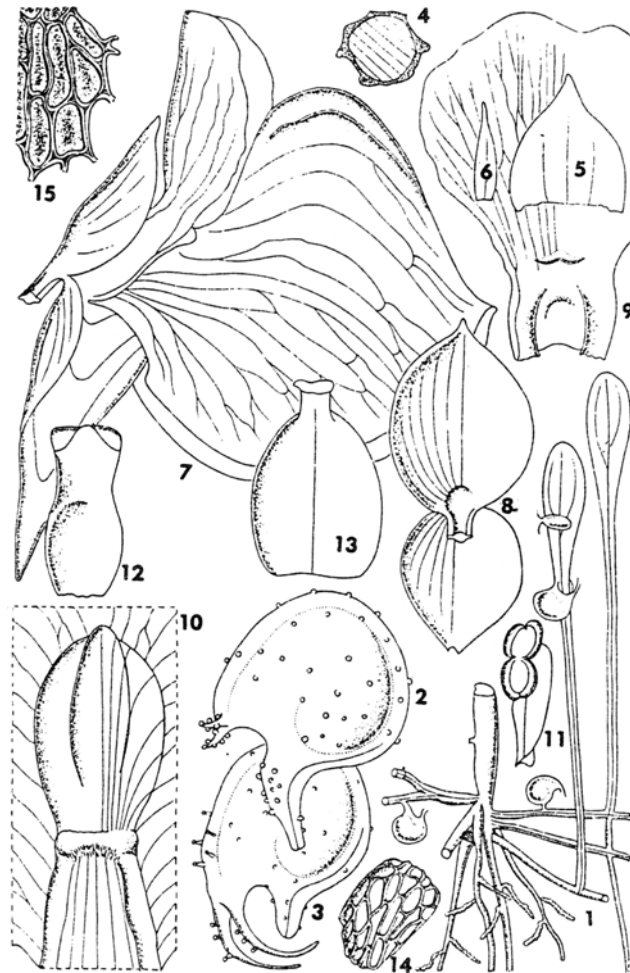


Figure 1. *Utricularia cecilia* P. Taylor 1. base of plant ($\times 7.5$), 2. trap from stolon ($\times 36$), 3. trap from leaf ($\times 36$), 4. TS of peduncle ($\times 18$), 5. bract ($\times 18$), 6. bracteole ($\times 18$), 7. flower, lateral view ($\times 7.5$), 8. calyx ($\times 7.5$), 9. corolla, upper lip ($\times 7.5$), 10. corolla palate ($\times 7.5$), 11. stamen ($\times 12$), 12. pistil ($\times 12$), 13. capsule ($\times 7.5$), 14. seed ($\times 67.5$), 15. testa ($\times 180$).

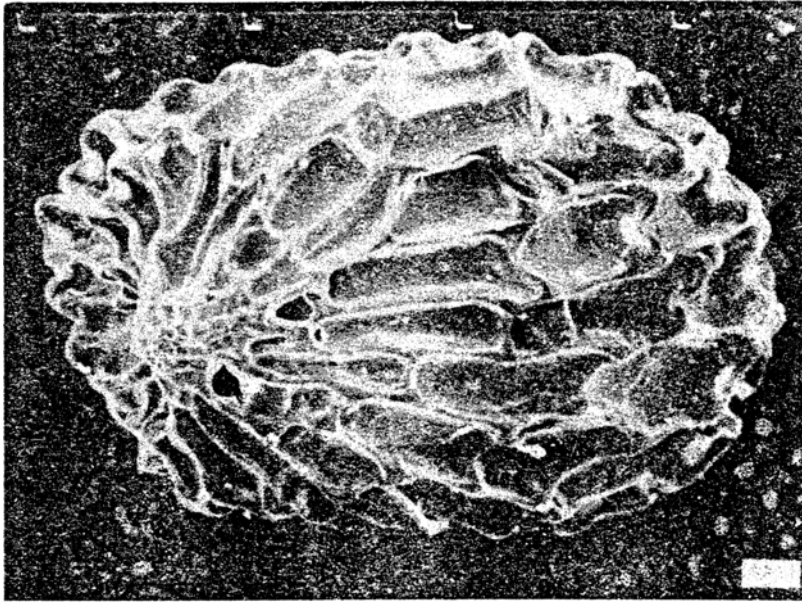


Figure 2. *Utricularia cecilii* P. Taylor. SEM image of seed

reticulata (the Hohenacker collection was so named) with which, in the type locality, it grows. However, the many differences in the vegetative parts, the calyx, capsule and especially the seeds make confusion with it inexcusable. It is possibly more nearly allied with *U. uliginosa*, which has a somewhat similar capsule, but has a very much smaller corolla and minutely denticulate margins to the fruiting calyx lobes and somewhat different seeds.

2. *Utricularia lazulina* P. Taylor *sp. nov.* affinis *U. albocaeruleae* Dalz. sed corolla minore labello superiore multo angustiore, testa minute verrucosa spatii intercellulis carens distinguenda.

Type: India, Karnataka, South Kanara, Kulshekar, *Taylor* 18021 (K holo, BLAT, BSI, CAL, JCB, L, US iso).

Pollen not examined by Huynh, K. L. *ibid* [3–4 colporate, $25 \times 30 \mu$, *Taylor* 18021 (K)].

Small annual terrestrial. Rhizoids few, capillary, a few mm long, tapering, from *ca* 0.2–0.05 mm thick, bearing several short, minutely papillose branches. Stolons few, capillary, sparsely branched, a few cm long, *ca* 0.2 mm thick; internodes 2–4 mm long. Leaves rather few, solitary at the peduncle base and at each stolon node, petiolate; lamina obovate, mostly *ca* 1 mm wide, with apex rounded, 3-nerved; total length 3–8 mm. Traps rather few on the leaves and on the stolon internodes and sometimes on the rhizoids, globose, stalked, subdimorphic, those on the leaves with a shorter stalk of equal thickness throughout, those elsewhere smaller and with the stalk distally \pm thickened, 0.5–0.75 mm long, the mouth basal with 2 dorsal, subulate, glandular appendages of varying length. Inflorescence erect, solitary, 5–10 cm long; peduncle

filiform, angular, narrowly winged, glabrous, 0.6–0.8 mm thick. Scales few, similar to the bracts. Bracts basifixed, ovate-deltoid, with apex acuminate, ca 1 mm long, nerveless; bracteoles subulate, about as long as the bract. Flowers 1–3, the inflorescence axis short; pedicels erect at anthesis, spreading or reflexed in fruit, filiform, narrowly winged, 2–5 mm long. Calyx lobes slightly unequal; upper lobe ovate, 2.5–4 mm long with apex acute; lower lobe slightly longer with apex minutely bidentate. Corolla 0.8–1 cm long, clear bright blue with a white, blue-nerved patch at the base of the lower lip and sometimes some white on the upper lip; upper lip very slightly constricted below the middle, the superior part narrowly oblong with apex rounded, the inferior part broadly ovate-deltoid; lower lip galeate, approximately circular with apex truncate and

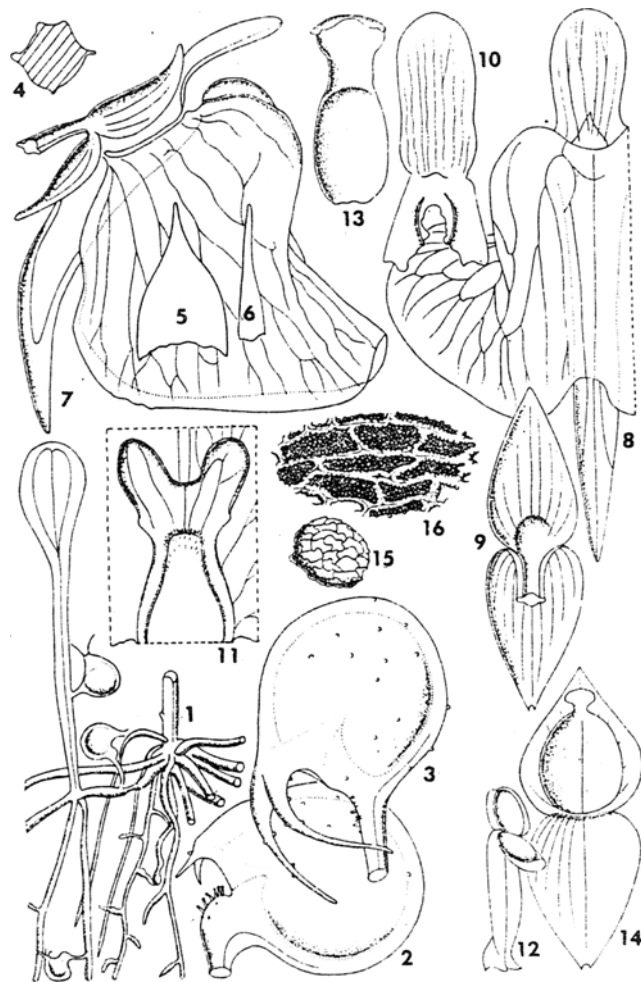


Figure 3. *Utricularia lazulina* P. Taylor 1. base of plant ($\times 7.5$), 2. trap from stolon ($\times 36$), 3. trap from leaf petiole ($\times 36$), 4. ts of peduncle ($\times 18$), 5. bract ($\times 18$), 6. bracteole ($\times 18$), 7. flower, lateral view ($\times 7.5$), 8. flower, front view ($\times 7.5$), 9. calyx ($\times 9$), 10. corolla, upper lip ($\times 7.5$), 11. corolla palate ($\times 7.5$), 12. stamen ($\times 18$), 13. pistil ($\times 18$), 14. fruit and calyx ($\times 7.5$), 15. seed ($\times 36$), 16. testa ($\times 180$).

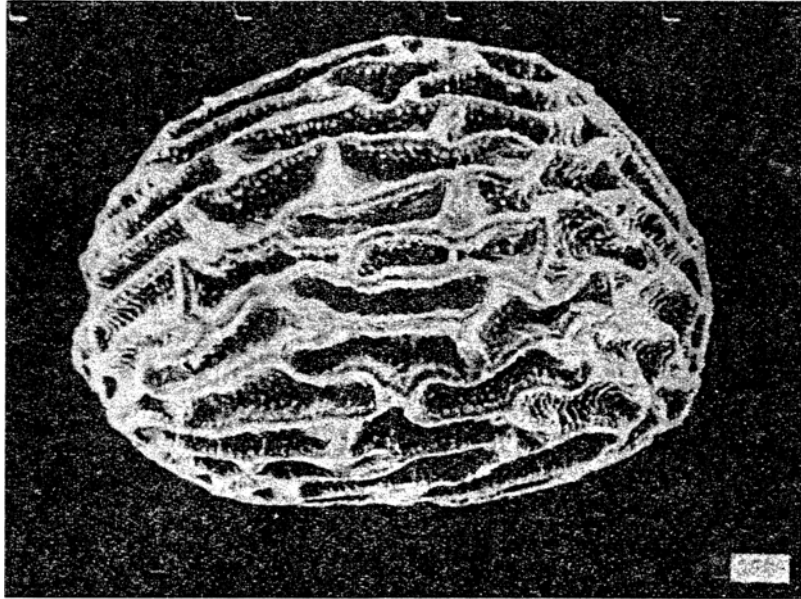


Figure 4. *Utricularia lazulina* P. Taylor. SEM image of seed.

with a very prominent bigibbous swelling at the base; palate pubescent; spur subulate, slightly curved with apex acute, somewhat longer than and held at an acute angle to the lower lip. Filaments straight, *ca* 1 mm long; anther thecae distinct. Ovary ovoid, dorso-ventrally compressed; style distinct and relatively broad; stigma lower lip semicircular, upper lip much shorter. Capsule ovoid, *ca* 2 mm long, the wall uniformly membranous, dehiscing by a single longitudinal ventral slit. Seeds obovoid, 0.2–0.3 mm, with a subterminal slightly prominent hilum, distinctly reticulate, the testa thin, microscopically verrucose, with cells irregular, slightly elongate (figures 3 and 4).

Distribution. India: Karnataka, South Kanara, in several places about Mangalore! and a little further north on the way to Kollur.

Habitat: Shallow wet soil over laterite and in wet grassland at low altitude. Flowering in July and August.

Utricularia lazulina P. Taylor, so named for the clear blue colour of the corolla, appears to be nearest to *U. albocaerulea* which also has a blue (rather the usual violet or mauve) corolla. However the latter species has larger flowers with a much broader upper corolla lip and the seeds are very different indeed. The seeds of *U. lazulina* are unique in the section, in having the periclinal wall conspicuously verrucose. Examination under SEM shows that the seeds are in fact covered by a smooth wax layer which conforms with the contours of the verrucae on the cuticle beneath.

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