# A new species of *Utricularia* (Lentibulariaceae) from the south-west of Western Australia

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## Abstract

Lowrie, A. A new species of *Utricularia* (Lentibulariaceae) from the south-west of Western Australia. Nuytsia 12 (1): 37-41 (1998). A new *Utricularia* species, *Utricularia paulineae* Lowrie, is described and illustrated. A key is provided to all the known *Utricularia* species occurring in the south-west of Western Australia.

## Introduction

*Utricularia paulineae* (Lentibulariaceae) has been treated by previous authors either as *U. inaequalis* A. DC., under the synonymous name *U. hookeri* Lehm. (Erickson 1968) or as a variant of *U. dichotoma* Labill. (Taylor 1989). Extensive study in the field as well as in cultivation has established that the new species here described is morphologically distinct. *Utricularia paulineae* is endemic to the south-west of Western Australia.

## Taxonomy

### Key to the *Utricularia* species of south-west Western Australia

1 Calyx lobes 4 (subgenus *Polypompholyx*) ..... 2
1: Calyx lobes 2 (subgenus *Utricularia*) ..... 4
2 Corolla pale pink to white; trap dorsal appendages deeply tridentate ..... **U. westonii**
2: Corolla pale pink to bright pink; trap dorsal appendages shortly bifid ..... 3
3 Corolla *c.* 4 mm wide, spur glandular ..... **U. tenella**
3: Corolla *c.* 12 mm wide; spur glabrous ..... **U. multifida**
4 Plants with tubers; corolla red ..... **U. menziesii**
4: Plants without tubers; corolla yellow, violet or pale lilac ..... 5
5 Plants free-floating; corolla yellow ..... 6
5: Plants affixed aquatics; corolla violet or pale lilac ..... 7

6 Ultimate segments of the leaves many; pedicels pendulous in fruit ..... **U. australis**
6: Ultimate segments of the leaves very few; pedicels semi-erect in fruit ..... **U. gibba**
7 Inflorescence peduncle twining around nearby herbs for support ..... 8
7: Inflorescence peduncle erect ..... 9
8 Corolla *c.* 20 mm wide; palate bearing 2 raised yellow ridges ..... **U. volubilis**
8: Corolla *c.* 5 mm wide; palate bearing 3 raised yellow ridges ..... **U. helix**
9 Inflorescence peduncle bearing 2-4 scales; corolla pale lilac ..... **U. simplex**
9: Inflorescence peduncle without scales; corolla lower lip violet ..... 10
10 Corolla upper lip pale lemon ..... 11
10: Corolla upper lip violet ..... 12
11 Corolla lower lip reniform; spur longer than the lower corolla lip ..... **U. paulineae**
11: Corolla lower lip semi-circular in outline with the apex 3-lobed; spur shorter than the lower corolla lip ..... **U. benthamii**
12 Leaf lamina linear-cuneate, apex rounded; bracts and bracteoles 2 ..... **U. violacea**
12: Leaves narrowly linear, apex acute; bracts and bracteoles 3 or more ..... 13
13 Corolla upper lip divided V-shaped into 2 oblong lobes, apex rounded; palate bearing *c.* 8 prominent yellow slightly raised ridges and streaks ..... **U. inaequalis**
13: Corolla upper lip obovate, apex truncate and slightly emarginate; palate bearing 2 prominent yellow ridges mostly with a smaller ridge between ..... **U. dichotoma** (Western Australian form)

**Utricularia paulineae** A. Lowrie, *sp. nov.*

*Utricularia dichotomae* Labill. affine sed corolla labio inferiore violaceo, reniformi, labio superiore pallide citrino, flabellato, calcare labiam inferius superenti; utricularae appendice dorsali supra orem brevissimis, truncato-dentata, capsula calycis lobis breviore.

*Typus:* 22.1 km north of Augusta, Western Australia, 34° 08' 11" S, 115° 06' 53" E, 7 December 1996, *A. Lowrie* 1655 (*holo:* PERTH 04680510; *iso:* MEL).

Perennial *herb*, terrestrial, up to 60 cm in diam., leaves in groups of 4 with rhizoids and traps at the base along numerous branching stolons many cm long and situated just below the soil surface to *c.* 1 cm in depth. *Leaves* spathulate (including the petiole), 7-10 mm long; lamina obovate, 2-3 mm long, 1.2-1.8 mm wide; petiole 0.5-0.7 mm wide. *Traps* on a long slender stalk, bilaterally compressed, *c.* 1.3 mm long, *c.* 1 mm wide in side view, to *c.* 0.7 mm wide in dorsal view; dorsal appendage above the mouth very short, truncate and apically dentate; lateral appendages winged with the leading edges dentate; ventral wings marginally dentate. *Inflorescence* erect, arising from a cluster of 4 leaves, 7-20 cm long (including peduncle); peduncle terete, 0.4-0.5 mm diam., glabrous, without scales. *Bracts and bracteoles* basisolute; bracts single, narrowly ovate, 1.5-2 mm long, 0.7-0.9 mm wide, apex rounded, base truncate ± 3-lobed; bracteoles paired, opposite, lanceolate, 1.5-2 mm long, 0.25-0.3 mm wide, apex rounded, base narrower, oblong. *Flowers* 1 or 2, pedicels 8-10 mm long. *Calyx lobes* 2, unequal; upper lobe obovate, 3-4.5 mm long, 2-3.5 mm wide; lower lobe broadly obovate, 2-4 mm long, 1.6-4 mm wide, apex emarginate. *Corolla* 7-11 mm long (not including the nectary spur), 10-14 mm wide, both lips slightly crenulate, lower lip violet or rarely white, reniform, 5.5-7 mm long, 10-14 mm wide; upper lip pale lemon, flabellate, 2.5-3 mm long, 4-5 mm wide at the apex, 1.3-1.8 mm wide at the base. *Palate* bearing 5 raised

ridges, the central ridge yellow, *c.* 0.4 mm long, slightly raised and situated between a pair of yellow raised ridges *c.* 0.8 mm long, bordered by a violet raised ridge *c.* 1.2 mm long and *c.* 0.4 mm wide on each side of the palate, additionally with a pale lemon zone between the outer ridges and a short distance below the central ridges. *Spur* longer than and positioned at 90° to the lower corolla lip, adaxial surface whitish, abaxial surface violet, yellowish at the apex, pyriform, 6-8 mm long, 1.5-2 mm wide at the apex, 2.5-3 mm wide in the middle, 2.7-3 mm wide at the base. *Capsule* obovoid, *c.* 3.5 mm long, dehiscing by a longitudinal slit. *Seeds* brown, *c.* 0.4 mm long, testa reticulate. (Figure 1)

*Selected specimens examined.* WESTERN AUSTRALIA: 3.5 km ENE of Walpole, 14 Dec. 1987, *A.R. Annels* 140 (PERTH); 8 km W of Walpole, 8 Mar. 1989, *A.R. Annels* 740 (PERTH); 34° 08' 31" S 115° 09' 08" E (*c.* 10 km NE of Karridale), 18 Nov. 1992, *A.R. Annels* 3052 (PERTH); *c.* 7 km N of Karridale, 2 Jan. 1985, *A. Lowrie & P. Lowrie s.n.* (PERTH); edge of Walpole-Nornalup National Park, *c.* 2 km W of Walpole, 27 Jan. 1993, *J.R. Wheeler & S.J. Patrick* 3774 (PERTH); Walpole-Nornalup National Park, 27 Jan. 1993, *J.R. Wheeler & S.J. Patrick* 3802 (PERTH).

*Distribution.* Recorded from the southern coastal region of south-west Western Australia between Karridale and Walpole.

*Habitat. Utricularia paulineae* grows in peaty sand on swampland flats and creek margins with *U. simplex* R. Br., *Drosera hamiltonii* C.R.P. Andrews, *D. pulchella* Lehm., *Cephalotus follicularis* Labill. and *Reedia spathulata* F. Muell. Commonly found in the bare densely shaded areas under swampland *Melaleuca* scrub.

*Phenology.* The frequency of *Utricularia paulineae* specimens in flower is generally low. Increased numbers of flowering plants were observed at three locations where a natural or man-made disturbance of the habitat had occurred; on the margins of the Shannon River after a fire; at Karridale where swampland vegetation had been cleared for agriculture alongside a creek margin; and nearby in the same area in swampland that had been cleared for power lines. This species, like many other swampland species, may need the occasional services of naturally occurring fire, such as caused by lightning strike, to clear the habitat of dense vegetation so mass flowering can occur.

*Conservation status. Utricularia paulineae* is currently not under threat. It is an inconspicuous species but is locally abundant at known localities.

*Etymology. Utricularia paulineae* is named in honour of my wife and research assistant Pauline Lowrie who discovered *U. paulineae* in the field while we were botanising at the type location area north of Karridale.

*Affinities.* The closest relatives to *Utricularia paulineae* in south-west Western Australia are *U. benthamii* P. Taylor and *U. dichotoma* Labill. *U. paulineae* is distinguished from *U. benthamii* (whose characters are given in parentheses) by having a corolla lower lip reniform, apex entire (semi-circular in outline, apex 3-lobed) and spur longer than the corolla lower lip (shorter than the corolla lower lip). *U. paulineae* is distinguished from *U. dichotoma* (whose characters are given in parentheses) by having a violet, reniform corolla lower lip and a pale lemon, flabellate upper lip (lower lip depressed-obovate, upper lip obovate, apex emarginate, both corolla lips violet); spur longer than the lower lip of the corolla (spur shorter than the lower lip); trap dorsal appendage above the mouth very short, truncate-dentate (trap dorsal appendage subulate, simple); and capsule shorter than the calyx lobes (as long as or slightly longer).

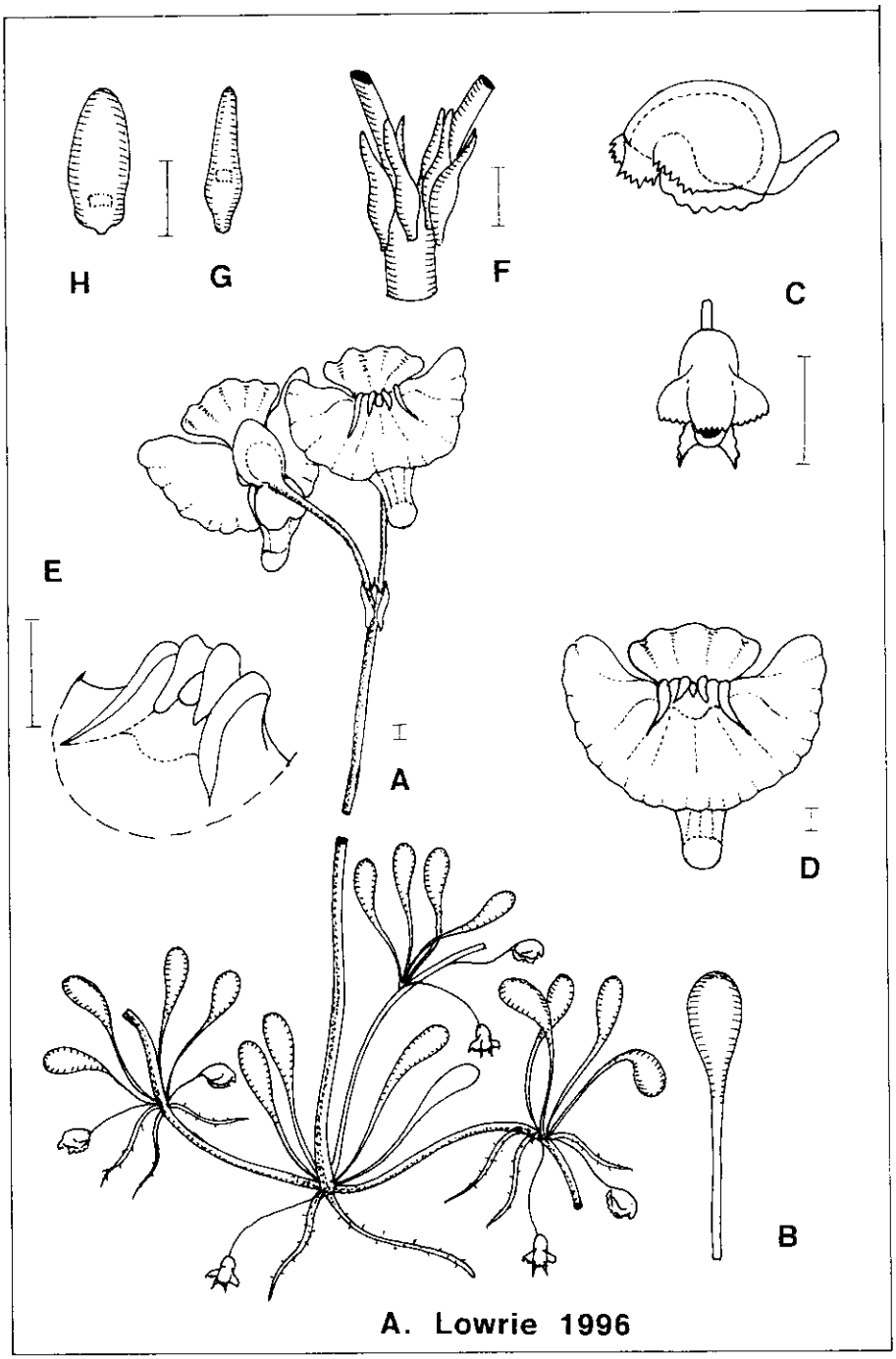


Figure 1. *Utricularia paulineae* A - habit of flowering plant; B - leaf; C - side view of trap above, front view of trap below; D - corolla; E - corolla palate, enlarged; F - bracts and bracteoles positioned about the pedicels above, and the peduncle below; G - bracteole; H - bract. Scale bar for all = 1 mm. Drawn from *A. Lowrie* 1655.

*Notes.* I first became aware of *Utricularia paulineae* in 1985 and located further populations at the Shannon River and Walpole in 1987.

In 1989 Rica Erickson granted me access to all her original botanical illustrations and field notes. Amongst Rica's drawings I found two separate pencil sketches with measurements and notes comparable to *U. paulineae*. Both illustrations are labelled *Utricularia hookeri* (*U. inaequalis* A. DC.). Only one sheet has location notes "Swamp ± 12 m (19.2 km) east of Alexandra Bridge, 7 Jan 1962 with pitcher plants (*Cephalotus follicularis* Labill.) + Drosera".

## Acknowledgements

I would like to thank Rica Erickson, author of "Plants of Prey", "Triggerplants" and "Orchids of the West" for providing the initial inspiration for my continuing passion for carnivorous plants, triggerplants and orchids; for allowing me to study, as well as make copies of all her original botanical drawings, working pencil drawings, field notes etc. of all her botanical research from 1932 onwards.

I would like to also thank Paul Wilson for his assistance with the Latin diagnosis; the referee Peter Taylor for his suggestions and comments; Barbara Rye for her comments, and the staff of the Western Australian Herbarium.

## References

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