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Utricularia minnutissima Vahl: A carnivorous plant of Odisha

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ABSTRACT

Utricularia commonly known as Golden Bladderwort, constitute the largest genus of carnivorous plants characterized by the absence of roots and the presence of small bladder-like traps that actively capture and digest small organisms. *U.minutissima* is an unexplored species of this genus. The present study highlights the morphology, its habitat and distribution.

Utricularia is a small herb belongs to the family Lentibulariaceae with the order Lamiales, is the largest genus of the carnivorous world (Hsu et al. 2017; Haron & Chew 2012). Encompasses about 275 species distributed throughout the world richness in Tropical region (Poppinga et al. 2012; Taylor 1989). About 38 species of *Utricularia* occur in the Indian Subcontient (Mishra & Kumar 2019; Dash 2016) and most of them are terrestrial and semi-aquatic, some are aquatic and few are epiphytic (Subramayam and Kamble 1968). These small perennial herbs bear rhizoids and stolon reaching a height up to 6-10 cm. The leaves are simple, entire and spathulate in shape, tapering towards the base in to a cylindrical portion which is continuous with the stolon. Flowers are attractive and different in colour (Fleischman 2012). This genus shows the fastest trapping system in all found carnivorous plants (Mishra & Kumar 2019; Kumar et al. 2018). All these species contain a highly complicated active suction trap or bladder which produces a negative hydrostatic pressure in the hollow bladder (Peroutka et al. 2008) and an energy demanding water pumping process. Due to

presence of this bladder it is known as Bladderworts . If a small animal triggers the bristles, projected from the surface of the door, the trap open suddenly and quick inflow of water sucks the prey inside (Rajmankova 2009). They are able to consume prey like mosquito larvae, tadpole, small fish, rotifers, water fleas etc (Mishra & Kumar 2019; Slack and Adrian 2000). Some associate species of this genus are *Drosera* sp., *Eriocaulon* sp., *Eichhornia crassipes*, *Rotala* sp. etc (Kumar et al. 2019). Odisha represents about 14 species of this genus (*U. aurea, U. bifida, U. caerulea, U. stellaris, U. minutissima, U. exoleta, U. polygaloides*) etc.

Utricularia minutissima Vahl.

(Figure 1)

Synonyms: Utricularia capillacea Wight; *Utricularia nipponica* Makino; *Utricularia pygmaea* R.Br.; *Utricularia siamensis* Ostenf.

Botany: A small, annual, terrestrial herb, Rhizoids are few to many, capillary, simple, 1 cm long, Stolons few up to 2 cm long, linear to narrowly oblong 3-6 x 0.3 mm., sparsely branched, Foliar organs up to 15 mm long, linear, 1- nerved, glandular and terete at base, rounded at apex. Leaves few, linear, up to 3 cm long and 0.8 mm wide, glandular or terete at base, rounded at apex. Traps on the vegetative organs, numerous ,stalked, broadly ovoid, 0.2- 0.3mm long, mouth lateral, upper lip with a solitary multicellular subulate appendage, lower lip with two, lateral, wing-like appendages of radiating rows of gland-tipped processes, Racemes 2-8 cm long, erect, glabrous, reddish-brown 1-4 flowered. Bracts basifixed, narrowly ovate, acute at apex; bracteoles linear-ovate, ovate, 1-nerved, up to 0.8mm long, Bracts and bracteoles not longer than the pedicel, pedicels up to 0.5 mm long, Flowers c. 4 mm long, Calyx lobes subequal, 2.0-3.5 mm long, ovate to obovate, glabrous or rarely papillose. Corolla 0.6-1.0 cm long, violet, pink or white; upper lip narrowly oblong-elliptic to obovate, lower lip narrowly 3-lobed, 1.3 x 2 mm, spur subulate, subacute, straight, usually much longer than and parallel rounded or emarginate at apex notched at apex, 2,5mm long, Stamens 1 mm long; filaments flattened, curved; anther thecae distinct. Ovary obliquely ovoid. Styles short; stigma 2-lipped, lower lip short or obsolete, upper lip long and recurved, Capsules up to 2 mm long, obliquely ovoid, uniformly membranous; placenta c 1 mm long, ovoid, seeds few, gloose, 0.2 mm, testa smooth, reticulate, reticulation relatively large, more or less isodiametric (Subramanyam & Kamble 1968; Saxena & Brahmam 1995; Rahman 2005) .

Flowering & Fruiting: August to March with a peak during October to January

Habitat: In wet sandy soil near water stagnant places; Marshy localities, from sea-level to 500 m

Distribution: India (Uttar Pradesh, West Bengal, Odisha, Tamil Nadu, Karnataka and Kerala), Australia, China, Hong Kong, Indo-China, Indonesia, Japan, Malay Peninsula, Myanmar, New Guinea, Philippines, Sri Lanka and Thailand Bangladesh.

Chromosome number: n = 8

Figure 1: *Utricularia minutissima*
(Photo Credit: Dr. Sanjeet Kumar)

FUTURE ASPECTS

Utricularia is an omnipresent carnivorous plant, found in nutrient-poor habitats which might be an effective indicator of different environmental characteristics including various biotic and abiotic factors. It indicates the past disturbance in a habit. This insectivorous plant possesses certain compounds or group of compounds which are responsible for their bioactivity and medicinal values. This carnivorous plant might have sound antibacterial, antifungal activity like other *Utricularia* sp. Some species of this genus are also edible. This species shows a great potential to study the soil and water quality of that area and there is a lack of studies in these aspect and this study might be helpful in the upcoming research on *U. minutissima*.

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