

Extended Distribution of *Utricularia bifida* Linn. (Lentibulariaceae) From India

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Abstract: *Utricularia bifida* Linn (Lentibulariaceae) is reported here for the first time from the State of Tripura in India. The species is an addition to the flora for the state for the first time. The report of *Utricularia bifida* (Lentibulariaceae) also indicates its extended distribution for India. A brief description of the species, its ecology along with line drawing and field data are provided for easy identification.

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Introduction

The family Lentibulariaceae accounts for 3 genera and 280 species (Fischer *et al.*, 2004) is distributed throughout the world with the greatest species richness in the tropical regions (Taylor, 1989). However, genera *Utricularia* L., and *Pinguicula* L., popularly termed as, 'bladderworts' and 'butterworts' respectively are the representatives of the Family Lentibulariaceae in India. *Utricularia* inhabits a wide range of habitats including wet grounds, ponds, lakes and other marshy areas, epiphytic conditions and seasonal deserts. *Utricularia* was first described in the "Species Plantarum" where Linnaeus (1753) listed only seven species. Since Taylor's monograph (1989) was published, a few new taxa have been discovered and described (Barry *et al.*, 2004 ; Gamble, 1924 ; Guang-Wan *et al.*, 2007 ; Janarthanam and Henry, 1992 ; Komiya , 1972 ; Lowrie *et al.*, 2008; Oliver, 1859 ; Parnell, 2005 ; Rahman , 2005 ; Subramanyam, 1979 ; Yadav *et al.*, 2000 , 2005; Zamudio, S and Olvera, M. 2009). In India, the genus is represented by about 35 species (Janarthanam and Henry, 1992). Later on three novelties were added by Yadav *et al.* (2000, 2005) increasing the count to 38 species. The genus has received considerable attention from many taxonomists. Many important accounts were produced mainly based on the morphology and floristics (Kamienski, 1895; Barnhart, 1916; Taylor, 1964; Crow, 1992; Janarthanam and Henry, 199 2; Govekar1, R.S and Sardesai, M.M., 2011). Earlier Deb (1981, 1983) reported two species of *Utricularia* from Tripura, India, viz. *Utricularia aurea* Lour and *Utricularia gibba* subsp. *exoleta* Roxburgh. Recently few specimens belonging to the genus *Utricularia* were collected from West district, Tripura, India. After critical examination the specimens were identified as *Utricularia bifida* Linn. *Utricularia bifida* are a small, annual carnivorous plant native to Asia and Oceania. Among the North Eastern states the genus was earlier reported only from Assam and

Meghalaya. Thus the present paper reports on the additions of *Utricularia bifida* for the State of Tripura. The present paper also reports range extension of this species provides short descriptions, distribution, ecological notes .The herbarium specimens collected and the voucher specimens are deposited in Herbarium of Tripura University Herbarium (TUH), Tripura, India.

Taxonomic Treatment:

Utricularia bifida Linn., Clarke in Hook. f., Fl. Brit. Ind. 4: 332 (1884); Prain, Beng. Pl. 2: 582 (1903); Cook, C.D.K. Aquatic and Wetland Plants of India.236(1996); Rahman, M. O., in Bangladesh J. Plant Taxon 12(2):63-70 (2005).

A small, annual, terrestrial herb. **Rhizoids** numerous, capillary. Stolons few, capillary, branched. **Leaves** arising from the stolon nodes, single nerved, narrowly linear, rounded or sub acute at apex, 10-20 x 0.5-1.0 mm. **Traps** ovoid, stalked, the mouth with 2 simple subulate, reflexed, adaxial appendages. **Racemes** 3-10 cm long, erect, glabrous. **Scale** few, like bracts. **Bracts** basifixed, ovate, obtuse to acute at apex. **Bracteoles** subulate, much shorter than the bract. **Flowers** 1 -6, 5-12 mm long; **Pedicels** 2.5-4.0 x 1.0-1.5 mm, broadly winged, spreading at anthesis, recurved in fruit. **Calyx** lobes subequal, ovate 2.5 -7 mm long; adaxial sepal with obtuse apex; abaxial sepal slightly smaller than , apex rounded or very shortly 2 lobed. **Corolla** yellow; upper lip slightly constricted below the middle, apex rounded ; lower lip orbicular to ovate. **Stamens** 1.5 mm long; filaments straight, 1 mm long; anther thecae distinct. **Ovary** ovoid, dorsiventrally compressed. Style distinct; stigma 2-lipped, lower lip semicircular, the upper one very short or obsolete. Capsule broadly ellipsoid, dorsiventrally compressed. Seeds ovoid, ellipsoid to obovoid, numerous.

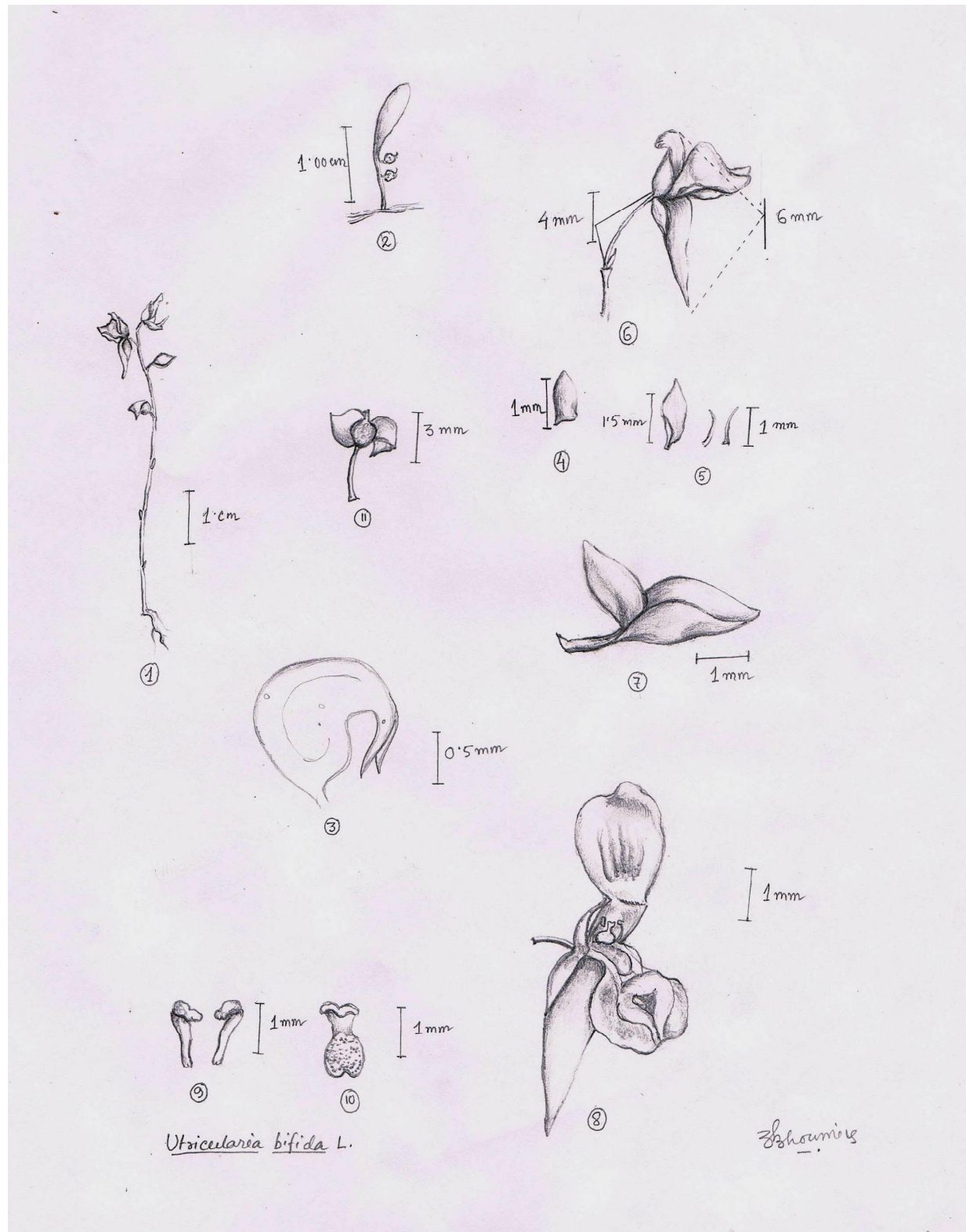


Plate1(Line drawing of *Utricularia bifida* Linn) : 1. Flowering plant; 2. Leaf with traps ; 3. Trap ; 4. Scale; 5. Bract and bracteoles; 6. Flowering pedicel ; 7. Sepal ; 8. Dissected flower showing the floral parts; 9. Stamens; 10. Pistil; 11. Fruit.



Plate 2 (*Utricularia bifida* Linn):1. Flowering plant; 2.Leaf with trap; 3.Trap showing appendages; 4. Scale; 5. Sepal; 6. Pistil; 7. Stamen ; 8. Germinating pollen grain; 9.Fruit showing recurved pedicel.

Flowering and Fruiting period: December to February.

Ecology: found to occur intermixed with *Drosera burmannii* Vahl. and *Eriocaulon cinereum* Roxburgh.

Habitat: In wet and marshy areas near perennial water bodies, falls, streams, lakes and in rice fields.

Occurrence: Very Common throughout the state.

Exsiccate: Suryamaninagar, Bhowmik & Datta, 571, dated 03.01.2012

Global Distribution : Australia, China, Hong Kong, India, Indo-China, Indonesia, Japan, Korea, Malaysia, Myanmar, Nepal, New Guinea, Philippines, Sri Lanka and Thailand.

Distribution within India: Andhra Pradesh, Assam, Bihar, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Tamil Nadu, West Bengal.

Distribution within North Eastern Regions of India: Assam and Meghalaya.

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