

## Occurrence of *Soliva anthemifolia* (A. Jussieu) R. Brown (Asteraceae) in Eastern India

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### Abstract

*Soliva anthemifolia* (A. Jussieu) R. Brown (Asteraceae) is first time collected from Maldah district of Paschimbanga and in turn for the entire Eastern India. This is also the addition at the generic level for the flora of this region. The description and the distribution of the species with illustrations have been provided in the article.

**Key words:** *Saliva anthemifolia*, Konar wetland, New record, Paschimbanga, Eastern India

### INTRODUCTION

The genus *Soliva* Ruiz & Pavon (Asteraceae: Anthemideae) is represented by eight species distributed mostly in North & South America, Australia and Asia (Mabberley 2005). Only one species of *Soliva* is so far reported from India.

*Soliva anthemifolia* (A. Jussieu) R. Brown is a prostrate annual herb with homogenous and sessile capitula is native to Galápagos Islands of San Cristobel and Santiago (Ecuador) of South America (Jirgensen & Len-Yrnez 1999) and distributed to warmer parts of the world. Webb *et al* (1988) assess and reported the countries like Argentina, Brazil, Paraguay and Uruguay are the native range of this species. The extended distribution of *Soliva anthemifolia* is reported from offshore islands and Ogasawara islands of Japan (Kato 2007), New Caledonia Island and Ile Grande Terre of New Caledonia (Swarbrick 1997; Tassin 2005) of Pacific Ocean. It is also introduced to New Zealand (Webb *et al* 1988), Japan (Mito & Uesugi 2004), Australia (Holms *et al* 1979) and Taiwan (Boufford & Peng 1993), in Pacific Rim and Mauritius (Holms *et al* 1979) of Indian Ocean.

The occurrence of *Soliva anthemifolia* is first time reported from India in 1963 from the plains of Uttar Pradesh (Bhattacharyya 1963). It is reported from Dehradun by Babu in 1966 at an altitude 640 m and for the Flora of Delhi by Dakshini *et al* in 1973 and again by Murty & Nautiyal in 1976. Later on it is reported from Jammu where it grows at the altitude of 400 – 700 m (Sharma & Kachroo 1981). It is also reported from Ranser Island, Patti, Palampur between the altitudinal rang of 500 – 1300 m of Himachal Pradesh (Sinha 1992; Guar 1999; Uniyal *et al* 2010). Further, the extended distribution of this species is restricted to the plains and north Himalayan states of India. Warm and wetland areas are the favorable and ideal habitat of this species.

The authors observed that *Soliva anthemifolia* is growing in dense mat of naturalized population on the Konar wetland after the retreat of water and on associated crop field at an altitude of 93 – 95 m in the Maldah district of Paschimbanga (formerly West Bengal) in February 2004. The exact global position of Konar wetland and adjoining cultivated field (Paddy, Jute, Makhana) from where the

specimens were collected is 25° 25' 49.78" N latitude & 87° 57' 25.14" E longitude with an elevation of 95 meter. The wetland is large seasonally waterlogged palustrine with total geographical area of 280 hectares and is located near Battala of Chanchal II block in Chanchal subdivision of Maldah district. The profusely grown mat of *Soliva anthemifolia* is found in association with *Panicum repens* Linnaeus, *Eragrostis unioloides* (Retzius) Nees *ex* Steudel, *Eragrostis tenella* (Linnaeus) Beauverd *ex* Roemer *et* Schultes, *Cynodon dactylon* (Linnaeus) Persoon, *Fimbristylis dichotoma* (Linnaeus) Vahl, *Cyperus rotundus* Linnaeus, *Alternanthera paronychioides* St. Hill, *Alternanthera sessilis* (Linnaeus) R. Brown *ex* DC., *Glinus lotoides* Linnaeus, *Glinus oppositifolius* (Linnaeus) A. DC., *Euphorbia heyneana* Sprengel, *Dentella repens* (Linnaeus) J. & G. Froster, *Grangea maderaspatana* (Linnaeus) Poiret, *Centella asiatica* (Linnaeus) Urban. The identity of the collected plant has also been confirmed on request by Dr. Harold Robinson, USA, an authority on Asteraceae.

This year, 2011, the species was collected from the Raiganj region of Dakshin Dinajpur district of Paschimbanga where it was growing in the periphery of crop fields in which paddy and wheat are cultivated in different seasons. Probably its seeds arrived this part of the state mixed with wheat seeds brought from Punjab and its nearby states. Also, at the same time, *S. anthemifolia* was also collected from the Jalpaiguri district of the same state, which is a northern district and is located in the Duars.

The present record of *Soliva anthemifolia* from the Maldah, Dakshin Dinajpur and Jalpaiguri districts of Paschimbanga is a new generic addition for the Eastern India. The wide range of distribution and uphill shifting from wet areas of gangetic plains with warmer region to the cooler hilly areas of an altitude 1300 m is the clear indication of positive response towards global climate change (Uniyal *et al* 2010). The voucher specimens are deposited in NBU-herbarium, in the herbarium of Malda College, Malda and at CAL. The distribution, diagnostic features and required illustrations (Figure 1) are provided.

***Soliva anthemifolia*** (A. Jussieu) R. Brown in Trans. Linn. Soc. London 12: 102. 1817; U.C. Bhattacharyya in Bull. Bot. Surv. India 5: 375 – 376. 1963; B.D. Naithani in Hajra *et al* (eds.) in Fl. India 12: 57 – 58. 1995; S. Uniyal *et al* in Curr. Sci. 99(7): 898 – 899. 2010. *Gymnostyles anthemifolia* A. Jussieu in Ann. Mus. Paris 4: 262, t.61, f.1. 1804.

**Vernacular name:** *Matikamra* (Bengali)

**Habitat:** Waste land nearby wetlands and on the crop fields.

Prostrate annual stoloniferous herb, fleshy, weak, 2 – 20 cm high; rooting from nodes. Stem solid, green, sometimes reddish at base, pubescent (hairy throughout). Leaves radical, opposite throughout, highly 2 – 3 pinnatisect, 20 – 90 mm x ± 5 mm, acute, curved, hairy throughout, base sheathing, wide. Capitula clustered in leaf axils, sometimes scattered at base of stem, mature one remain half-embedded in soil, spherical, 7 – 12 mm in diameter; homogamous with numerous disc florets; involucre bracts many in two rows, ovoid, curved, fimbriate, ± 3.2 mm x ± 2 mm; several rows of outer florets female and without corolla; disc florets 1.4 – 3 mm long; corolla long, pale yellow, lobes 3; sterile florets with pistillode admixed with fertile males. Stamens 3, syngeneis, ± 0.8 mm long, oblong with acute tip and obtuse base; ovary ± 1 mm long, brown, articulated; style curve, ± 2.8 mm long, unequally bifid. Cypsela light brown with deep brown centre, oblanceolate to cuneate-oblong, ± 3 mm long, wings transversely wrinkled, hairy on rounded angles; pappus absent but with numerous white hairs from collar, ± 1 mm long, unbranched; persistent style spinescent.

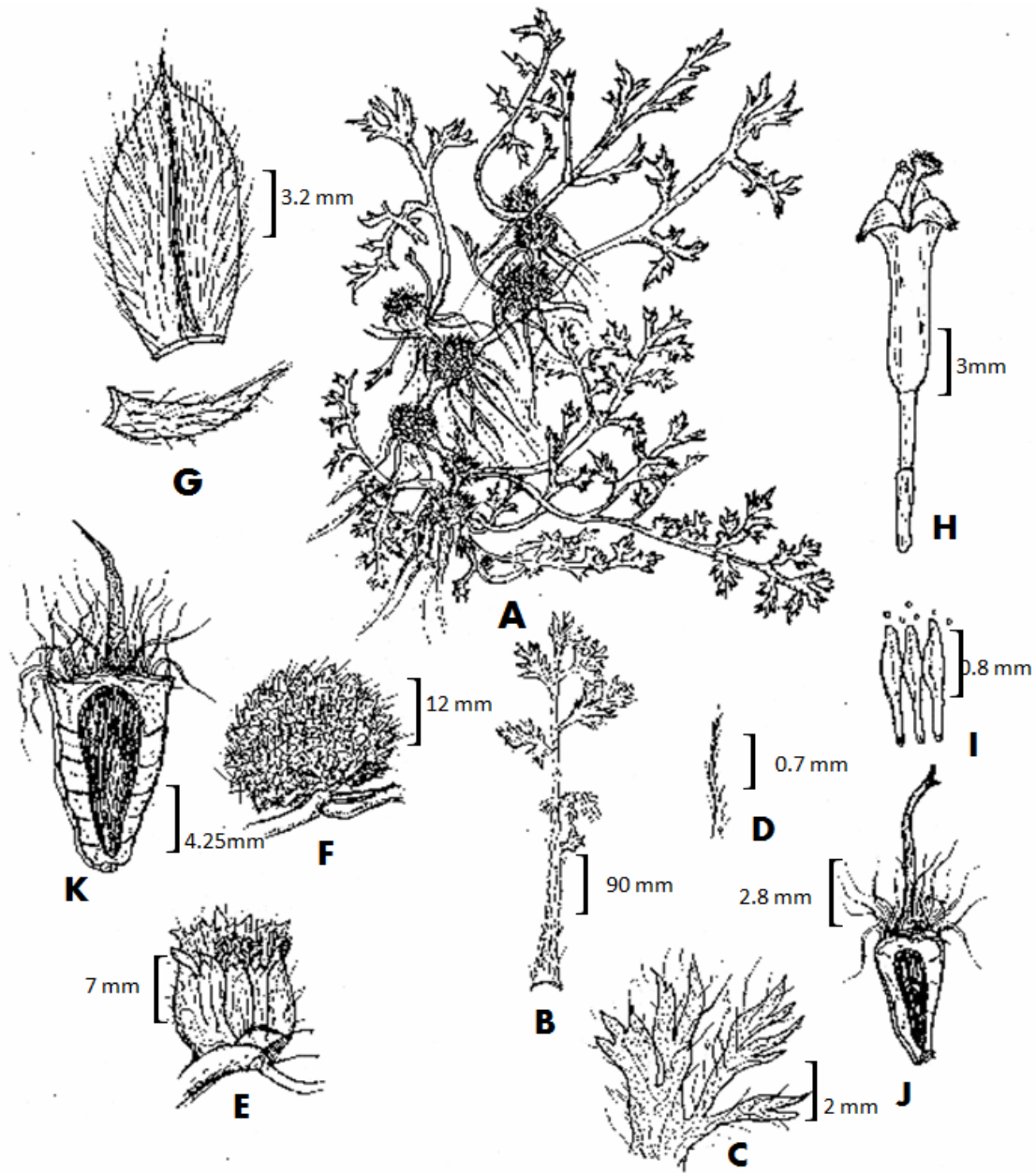
**Flowering & Fruiting:** March – August

**Propagation:** Seeds

**Excicatae:** INDIA, Paschimbanga: Konar Wetland of Maldah district, *AP. Das et Monoranjan Chowdhury* 0643, (CAL) dated 11.02.2004 & 1487 (CAL), dated 21.05.211;



**PLATE - I: *Soliva anthemifolia*:** **A.** A matured plant in the habitat; **B.** Part of the cluster splitted to show the formation of capitula at the base



**Figure 1.** *Soliva anthemifolia* (A. Jussieu) R. Brown: **A.** Habit; **B.** Leaf ; **C.** Leaf segment ; **D.** Hair; **E.** Flower head; **F.** Fruiting head; **G.** Involucral bracts; **H.** Disc floret; **I.** Stamens; **J.** Gynoeceium; **K.** Cypsela

Konar Wetland of Maldah district, *AP Das et Monoranjan Chowdhury* 1492, 1494, 1499, 1508 (NBU) dated 21.05.2011 and 1498, 1502, 1503, 1507, 1510 (Malda College); Raiganj, Dakshin Dinajpur, *Apu Sikder et AP. Das* 37, dated 12.03.2011 & *Apu Sikder et AP. Das* 45 dated 13.03.2011 (NBU); Near Teesta Bridge, Jalpaiguri, 12.03.2011, *Anurag et A.P. Das* 103 (NBU)

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