

## *Polygonum hastatosagittatum* Makino (Polygonaceae): a new distributional record for India

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### Abstract

Few specimens of *Polygonum hastatosagittatum* Makino, Polygonaceae, were recognized from the bulk collection of wetland plants from the natural water bodies in Duars of Himalayan biodiversity hotspot regions of West Bengal, India. This species is first time recorded from the territory of India. The taxonomic features, pollination, ecological notes and photographs of the species are provided.

Key words : *Polygonum hastatosagittatum* Makino, New record, Himalayan biodiversity hotspot, India.

### INTRODUCTION

The Polygonaceae is comprising of approximately 46 genera and 1200 species and is mostly distributed in northern temperate regions of the world<sup>[1]</sup>. In India, the family is represented by around 16 genera with 110 species of which majority are distributed in the Himalayan ranges from East to West including the Nepal<sup>[2]</sup>. *Polygonum* L. is a genus of annual or perennial herbs or shrubs, cosmopolitan in distribution and is adopted to grow in very wide range of environmental conditions. However, species of *Polygonum* are having some preferences for the wet or marshy habitat conditions. It was estimated that around 150 species of *Polygonum* (*sensu lato*) are available worldwide<sup>[3]</sup>, while, in flora of China it was estimated to be around 230 species distributed mostly in Northern temperate region of the world<sup>[4]</sup>, of which around 80 species are common with India<sup>[5]</sup>. Presently, 227 species of *Polygonum* (*sensu lato*) and 16 sub-species are recognized globally<sup>[6]</sup>. Quite a high number of species of *Polygonum* (*sensu lato*) were accounted from undivided India<sup>[7,8]</sup> and around 12 genera and 47 species were recorded from the state of West Bengal<sup>[9,10,11,2,12]</sup>.

During the floristic and ecological exploration (since 2007) in different water bodies in Terai and Duars region of West Bengal, some specimens were collected from a small and shallow stream in Sursuti Reserve Forest (near Gorumara National Park), that originates from the Neora River and passing through the entire forest and ultimately re-united with the Neora River, at 26°44'45.40" N latitude & 88°46'00.24" E longitude. The slow flowing nature of this channel creates several swamps covered with dense mat of aquatic vegetation within the forests. The specimen was critically investigated using various literature including *Flora of China*<sup>[4]</sup>, and *Flora of Taiwan*<sup>[13]</sup> and matched with digital herbarium specimens of Taiwan National University Herbarium<sup>[14]</sup> TAI (TAIID 042024, 041996, 173781), and was finally identified as *Polygonum hastatosagittatum* Makino. The specimens pertaining to this species will be deposited in the CAL and NBU herbaria. Characteristic morphology of leaves, glandular hairs, ocrea, and floral parts were examined and photographed. Detailed morphological description, photographs and ecological annotations for the plant are provided in the article.

*Polygonum hastatosagittatum* Makino, Bot. Mag. Tokyo. 17:

119. 1903. Liu, Ying & Lai, Fl. Taiwan 2: 270. 1976. [PLATE 1]

Marshland annual ascending herbs, 50 - 90 cm long. Stem much branched, armed with recurved and retrorse prickles. Petiole 2 mm or missing, retrorsely prickly; lamina lanceolate or elliptic, 80 - 84 mm long, 11 - 13 mm wide, acuminate, base sagittate or subhastate, pubescent, abaxially with retrorse prickles along the mid-vein, adaxially sometimes stellate pubescent; ocrea tubular, 18 - 22 x 7 - 8 mm, membranous, truncate, recurved retrorse at base. Inflorescence 2 - 3 flowered fascicles in repeatedly branched monochasium, terminal or axillary; peduncles glandular pubescent, bracts elliptic or ovate, 3 x 1.5 mm, margin ciliate; perianth light pink, 5 parted, 3 x 4 mm; tepals elliptic; stamens 8; styles 3, stigmas 1.4 mm, capitate. Achenes, trigonous, ovoid, dark brown, shiny.

#### Flowers & Fruits:

June - September.

#### Distribution:

Siberia, China, Nepal<sup>[15]</sup>, Taiwan, Japan, and now in India (Sursuti forest, Lataguri, West Bengal).

#### Specimen examined:

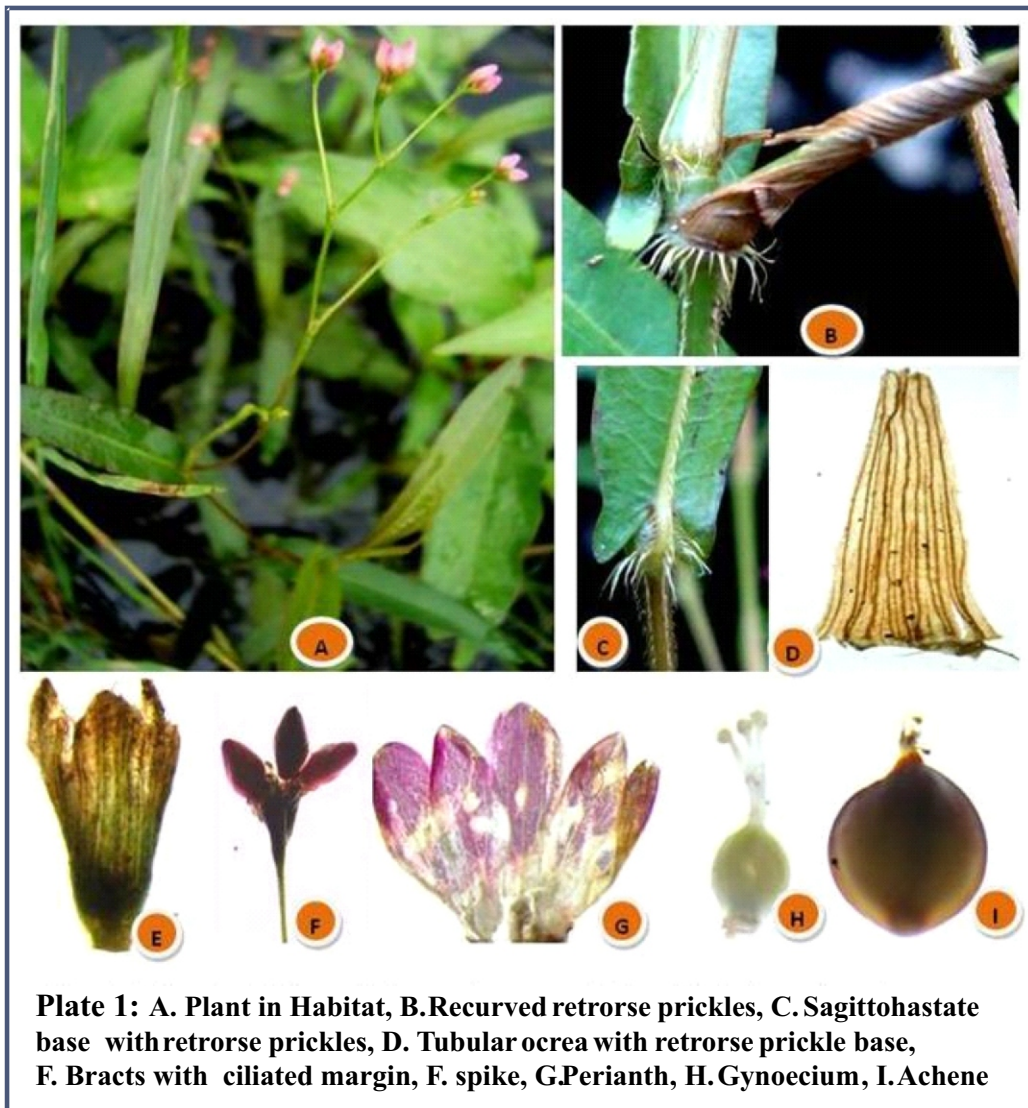
Sursuti forest (Lataguri, West Bengal), Anurag Chowdhury & A.P. Das 03456, dated 29.07.2014 (CAL) and Anurag Chowdhury & A.P. Das 03445, dated 30.05.2014 (NBU).

#### Ecological notes:

The species is growing in forest swamps in association with *Polygonum perfoliatum* Linnaeus, *Persicaria hydropiper* (Linnaeus) Spach, *Persicaria chinensis* (Linnaeus) H. Gross, *Sacciolepis interrupta* (Willdenow) Stapf, *Lasia spinosa* (Linnaeus) Thwaites, *Spirodela polyrrhiza* (Linnaeus) Schleiden, etc. It is now known only from one locality in India apart from China and Nepal parts of the Himalayas.

#### CONCLUSION

*Polygonum hastatosagittatum* Makino, Polygonaceae is recorded first time from the fresh water swamp within the territory of Gorumara National Park of Terai regions of Himalayan hotspots of India. Seeds of this species are light and



minute and probably it may come in this region through the rivers or streams way or with feather or feces of migratory birds coming from nearby countries, where it is available. The species is now growing and reproducing nicely in the study area. It is not recorded from any other adjoining areas of this regions and its distribution is still restricted. This piece of work is adding one more species in the flora of India.

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