



Myriophyllum siamense (Haloragaceae): A new record for India

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Abstract

Myriophyllum siamense (Craib) Tardieu (Haloragaceae) is reported for the first time from Odisha in India. A description, photograph and relevant notes on the species are provided.

Keywords: Haloragaceae, India, *Myriophyllum siamense*, New Record

Introduction

Myriophyllum L. (Haloragaceae), commonly known as 'water milfoil', a cosmopolitan genus consists of aquatic or semi-aquatic herbs. With c. 68 species, the genus has three main centres of distribution: Australia (42 species, 37 endemic), North America (14 species, 7 endemic) and India/Indochina with 10 species, 7 endemic (Meijden, 1969; Meijden & Caspers, 1971; Orchard, 1990; Mabberley, 2008; Moody & Les, 2010). In India, it is represented by 6 species (Hooker, 1878; Saxena & Brahmam, 1996; Sasidharan, 2004; Arshid & Wani, 2011; Arshid *et al.*, 2011). During a recent field survey along the eastern coastal belt of India, the authors came across an interesting population of *Myriophyllum* (initially thought to be a species of *Rotala*, also found growing along with them) from the wet, fine sandy area near Puri in Odisha. Since the specimens did not match with any of the known species of *Myriophyllum* from India, they were referred to Dr. Tony Orchard, an expert on *Myriophyllum* at the Tasmanian Herbarium. It was identified as *M. siamense* (Craib) Tardieu, previously known only from Malesia, Vietnam and Thailand. This collection represents the first ever record of the species for India. Hence, a detailed botanical description and photograph of the species are provided to facilitate its easy identification.

Myriophyllum siamense (Craib) Tardieu, *Adansonia* 5: 37, ff. 1 – 4, 1965 & in Lecomte *et al.*, *Fl. Cambodge, Laos & Vietnam* 4: 128, ff. 1 – 4, 1965; Meijden, *Blumea* 17: 307, f. 1e, 1969; in Smitinand & K. Larsen, *Fl. Thailand* 2: 2, 1970; Meijden &

Caspers, *Fl. Males. Ser. 1*, 7(1): 257, 1971. *M. meziannum* Schindl. var. *siamense* Craib, *Fl. Siam.* 1(4): 591, 1931. **Fig. 1, 2**

Herbs, semi-aquatic, to 11 cm high, rooting at base. Stems erect to ascending, sparsely to much branched, glabrous, green. Leaves sessile, alternate, subopposite towards apex, linear-spathulate, 3 – 7 × 0.5 – 1 mm, entire at margins, fleshy, glabrous. Flower solitary in the upper leaf axils; the upper male; the lower female; bracteoles 0. Male flowers sessile. Sepals 0. Petals 2, erect, oblong to lanceolate, 0.5 – 0.7 × 0.2 – 0.3 mm, entire but distally crenate at margins with a purplish tinge, strongly recurved after anthesis. Stamen 1; filament 0.02 – 0.03 mm long; anther elliptic, 0.6 – 0.7 × 0.2 – 0.3 mm, mucronate at apex, yellow; pollen grains yellow. Female flowers sessile, 0.4 – 0.6 mm long. Sepals 0. Petals 0. Carpels 2, echinate; style shortly conical, distally set with 0.2 – 0.5 mm long hyaline hairs. Fruits c. 1 mm long, purplish; mericarps 2, oblongoid, c. 1 × 0.5 mm, connate at base, tubercled in rows.

Habitat: Sandy soil near ponds and marshes near coast.

Distribution: Malesia, southern Thailand, Vietnam; presently reported from India (Puri district, Odisha), also grown in the Botanical Garden of St. Joseph's College, Kozhikode.

Specimens examined: INDIA, Odisha, Puri district, Malligav, Road to Konark, c. 10 m, 3.12.2011,

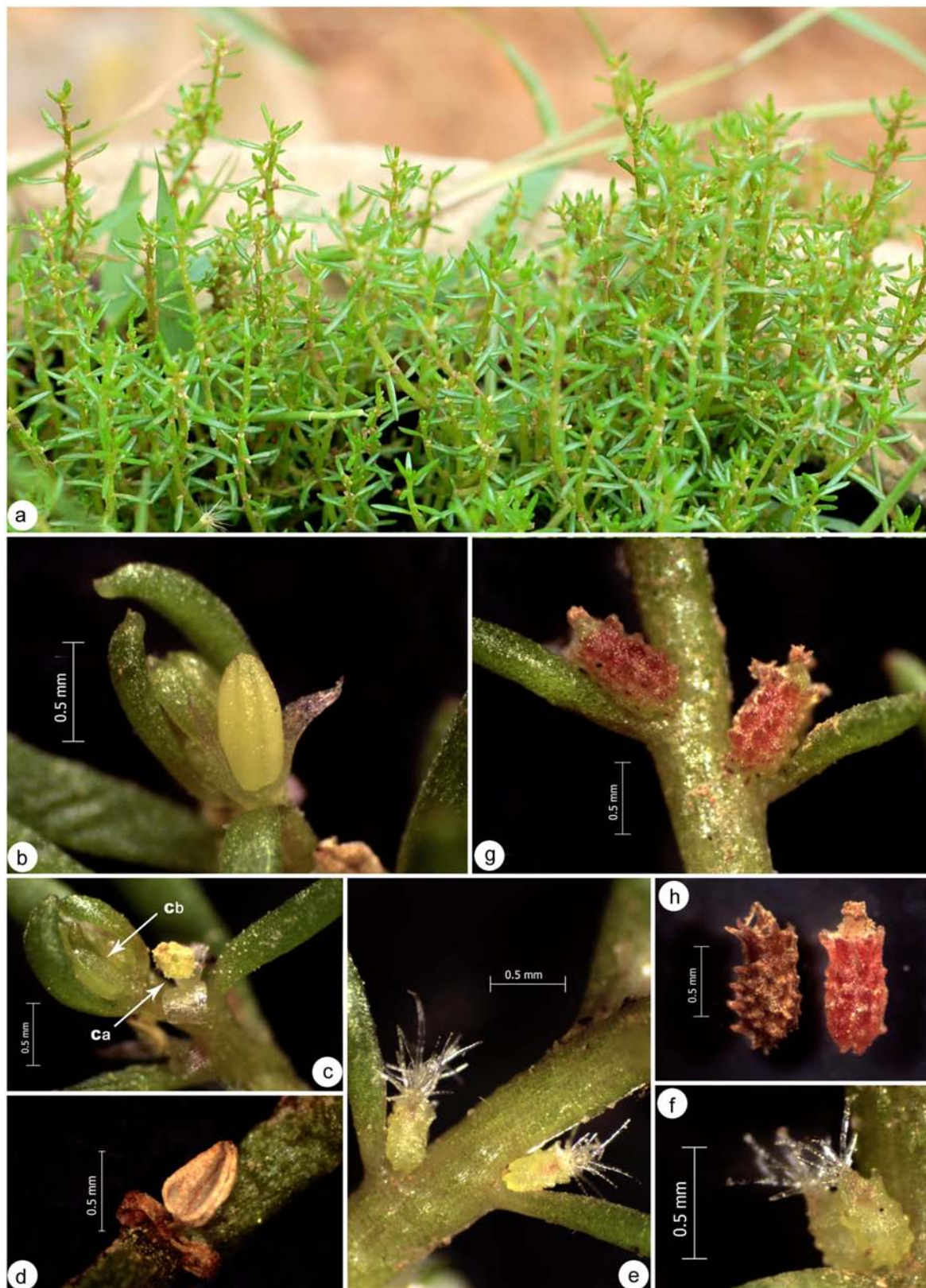


Fig. 1. *Myriophyllum siamense* (Craib) Tardieu. a. Habit; b. Male flower; ca. Male flower with dehiscent anther; cb. Terminal buds in the leaf axils; d. Male flower with dehiscent anther and strongly recurved petals; e. Female flowers showing hyaline stigmatic hairs; f. Female flower enlarged; g. Mature fruit; h. Mericarps (all from Santhosh Nampy & Manudev 3730).

Pramod 127628 (CALI); Malligav, Road to Konark, c. 10 m, 3.12.2011, *Santhosh Nampy* 3727 (DEV). **Kerala**, Kozhikode district, St. Joseph's College Botanical Garden (cultivated), 55 m, 26.3.2012, *Santhosh Nampy & Manudev* 3730 (DEV).

Notes: *Myriophyllum siamense* belongs to the subsection *Spirophyllum* Schindl. and is allied to *M. coronatum* Meijden, *M. mezianum* Schindl. and *M. bonii* Tardieu in having reduced staminate flowers, dicarpic pistillate flowers (tetracarpic in *M. bonii*) and a similar emergent, mat-like habit which lacks pinnate leaves (Moody & Les, 2010). However, *M. siamense* can easily be distinguished by its fruits having rows of tubercles.

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Literature Cited

- Arshid, S. & A.A. Wani 2011.** Phenological episodes of *Myriophyllum spicatum* (Haloragaceae): A highly invasive species in Kashmir Himalayan aquatic ecosystems. *Nat. & Sci.* **9(5)**: 42 – 45.
- Arshid, S., Wani, A.A., Ganie, A.H. & A.A. Khuroo 2011.** On correct identification, range expansion and management implications of *Myriophyllum aquaticum* in Kashmir Himalaya, India. *Checklist* **7**: 299 – 302.
- Hooker, J.D. 1878.** *The Flora of British India*. Vol. **2**. L. Reeve & Co. Ltd., London. pp. 432 – 434.
- Mabberly, D.J. 2008.** *The Plant-Book: A portable dictionary of vascular plants, their classification and uses*. Third Edition. Cambridge University Press, Cambridge.
- Meijden, R. van der 1969.** Annotated key to the South-East Asiatic, Malesian, Mascarene, and African species of *Myriophyllum* (Haloragaceae). *Blumea* **17**: 303 – 311.
- Meijden, R. van der & N. Caspers 1971.** Haloragaceae. *Flora Malesiana, Ser. 1*, **7(1)**: 239 – 263.
- Moody, M.L. & D.H. Les 2010.** Systematics of the aquatic angiosperm genus *Myriophyllum* (Haloragaceae). *Syst. Bot.* **35**: 121 – 139.
- Orchard, A.E. 1990.** Haloragaceae. In: George, A.S. (Ed.), *Flora of Australia*. Vol. **18**. Australian Govt. Publ. Service, Canberra. pp. 5 – 85.
- Sasidharan, N. 2004.** *Biodiversity Documentation for Kerala – Part 6: Flowering Plants*. Kerala Forest Research Institute, Peechi.
- Saxena, H.O. & M. Brahmam 1996.** *The Flora of Orissa*. Vol. **2**. CSIR (India) Regional Research Laboratory & Orissa Forest Development Corporation Ltd., Bhubaneswar. pp. 645 – 646.

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