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Does *Mimosa hamata* Willd. (Mimosoideae: Fabaceae) occur in Tamil Nadu?

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ABSTRACT

The occurrence of *Mimosa hamata* Willd. (Mimosoideae: Fabaceae) in Tamil Nadu was previously considered doubtful. Now, the existence of this armed straggler is confirmed based on the present fresh collections from Dindigul, Madurai and Tirunelveli districts. The confusion with regard to its distribution and taxonomy is discussed in this paper.

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Mimosa L. is the second largest genus of the subfamily Mimosoideae of Fabaceae (Savassi-Coutinho *et al.*, 2012) and is comprised of 540 species (Lewis *et al.*, 2005; Bessega *et al.*, 2008). The genus is principally Neotropics in distribution, with centers of diversity in central Brazil, subtropical South America and Mexico (Simon & Proenca, 2000; Simon *et al.*, 2011). In India, it is represented by 11 species (Sanjappa, 1992), of which three are distributed in Tamil Nadu (Vajravelu, 1983). The genus differs from other similar mimosoids by the absence of glands on the anthers and it is easily recognized in the field by its bipinnate and paripinnate leaves, 3–6-merous and iso- or diplostemonous flowers and articulated or non-articulated craspedium fruit (Barneby, 1991).

During the present systematic studies on legumes of Tamil Nadu, the authors have collected some interesting specimens of *Mimosa* from Dindigul, Madurai and Tirunelveli districts of Tamil Nadu. A critical examination of the specimens coupled with study of relevant literature confirmed

it as *Mimosa hamata*. Scrutiny of literature on distribution of this species in Tamil Nadu revealed that it is remain doubtful. Mayurnathan (1929) reported this species from Madras, whilst Livingstone & Henry (1994) omitted the species in flowering plants of Madras city and its immediate neighborhood owing to the lack of authentic specimens. Similarly, Vajravelu (1983) included it in the Flora of Tamil Nadu under the addenda based solely on the authority of Matthew (1981). However, this species was not reported either in Flora of Tamil Nadu Carnatic (1983) or Flora of Tiruchirapalli District (1998). Moreover, this species was not reported in any of the works pertaining to the flora of Tamil Nadu (Kottaimuthu, 2014; Manickam *et al.*, 2008; Matthew 1999; Nair & Nayar 1982; Natarajan *et al.*, 2002; Pallithanam, 2001; Sankar *et al.*, 2012; Senthilkumar & Krishnamurthy, 1993; Vajravelu *et al.*, 1987). Therefore, the present collections form the first authentic report of occurrence of this species from Tamil Nadu. A brief description along with relevant notes are provided here for easy identification.

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Mimosa hamata Willd. Sp. Pl. 4: 1033. 1806; Baker in Hook.f., Fl. Brit. India 2: 291. 1878; Gamble, Fl. Pres Madras 1: 421. 1919; Sanjappa, Leg. India: 68. 1992; Pull. & Ramamurthy, Fl. Eastern Ghats 2: 98. 2001. (Fig.1)

A medium sized much branched shrub up to 2 m. high, branches pubescent, armed with hooked prickles. Leaves stipulate; stipules setaceous c. 3 mm long, hairy; bi-pinnate, rachis 1.2-5.0 cm long, sometimes prickly. Pinnae 3-6 pairs, 7-25 mm long, leaflets 6-10 pairs, more or less sessile, 2-3 x 1-2 mm, linear or ovate-oblong, acute, mucronate, glabrous above, pilose below. Flowers in globose heads, solitary or paired in upper axils; peduncles longer than the leaves, 1.5-3.5 cm long, puberulous; heads c. 10-13 mm in diameter. Flowers pink, tetramerous, sessile; bracts linear, spatulate, pilose. Calyx ca. 1 mm. Corolla tube ca. 3 mm long, lobes c. 1.5 mm long. Stamens 8. Ovary stalked, hairy. Pod 5-7.5 cm long, c. 1.0 cm broad flat, falcate, velvety, sutures emarginated between the joints and armed with hooked prickles. Seed ovoid, flattened, reddish brown.

Flowering & Fruiting: April and August.

Distribution: INDIA (Andhra Pradesh, Karnataka, Madhya Pradesh, Punjab & Tamil Nadu) and PAKISTAN (Baluchistan, Punjab & Sind).

Specimens examined: Tamil Nadu: Dindigul District; Nilakottai-Dam site, 180 m, 10.8.2013, R. Kottaimuthu 151076; Madurai District, Ayalanallur grave yard, 160 m, 20.7.2013, R. Kottaimuthu 52393; Tirunelveli District, Kadayam-Courtallum, 180 m, 10.6.2009, R. Kottaimuthu 35279 (Saraswathi Narayanan College Herbarium).

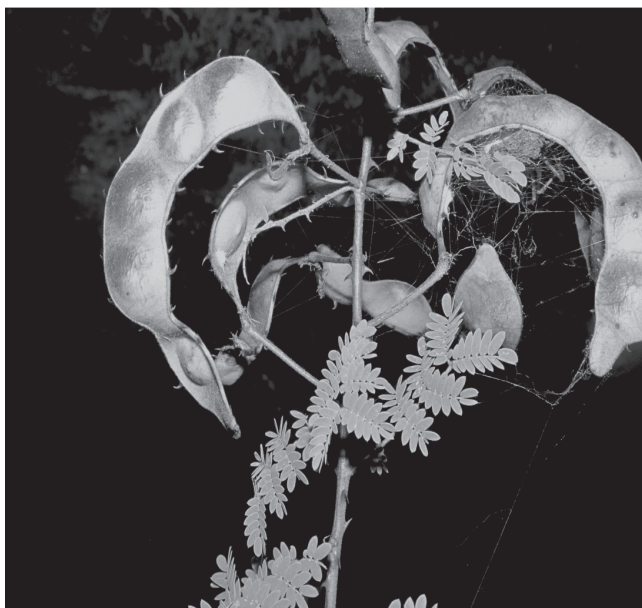


Fig. 1: Fruiting twig of *Mimosa hamata* Willd.

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References

- Barneby, R. C. (1991). *Sensitivae censitae: A description of the genus Mimosa Linnaeus (Mimosaceae) in the New World*. Mem. New York Bot. Gard. 65: 1–835.
- Besega, C., Hopp, H. E. and Fortunato, R. H. (2008). Toward a phylogeny of *Mimosa* (Leguminosae: Mimosoideae): a preliminary analysis of Southern South American species based on chloroplast DNA sequences. Ann. Missouri Bot. Gard. 95(4): 567–579.
- Kottaimuthu, R. (2014). Floristic studies on dicots of Karandamalai, Southern Eastern Ghats, Tamil Nadu, India. Lambert Academic Publishing, Saarbrücken, Germany.
- Livingstone, C. and Henry, A. N. (1994). The flowering plants of Madras city and its immediate neighbourhood. Bull. Madras Gov. Mus. N.S. Nat. Hist. Sect. 10: 1–341.
- Manickam, V. S., Murugan, C. and Jothi, G. J. (2008). Flora of Tirunelveli Hills (Southern Western Ghats), Vol. I. Polypetalae. Bishen Singh Mahendra Pal Singh, Dehra Dun.
- Matthew, K. M. (1981). Materials for the Flora of Tamilnadu Carnatic. Rapinat Herbarium, Tiruchirapalli.
- Matthew, K. M. (1983). Flora of Tamilnadu Carnatic. Vol. I: Polypetalae. Rapinat Herbarium, Tiruchirapalli.
- Matthew, K. M. (1998). An enumeration of the Flowering plants of the Tiruchirapalli district with brief notes for each (1279) species. In: Velmani, K. S. K. (ed.) Gazetteers of Tamil Nadu: Tiruchirapalli district. Volume 1. Chennai: Tamil Nadu Archives.
- Matthew, K. M. (1999). Flora of the Palni hills, South India. Vol. 1; Polypetale. The Rapinat Herbarium, Tiruchirapalli.
- Mayurnathan, P. V. (1929). The flowering plants of Madras city and its immediate neighborhood. Bull. Madras Gov. Mus. N.S. Nat. Hist. Sect. 2: 1–345.
- Nair, K. K. N. & Nayar, M. P. (1986). Flora of Courtallum. Vol. I. Botanical Survey of India, Howrah.
- Natarajan, K., Manickam, V. S. & Murugan, C. (2002). Flora of Vallanadu Blackbuck Sanctuary in Tamil Nadu, India. J. Econ. Taxon. Bot. 26: 347–369.

- Pallithanam, J. P. (2001). A pocket flora of the Sirumalai Hills, South India. The Rapinat Herbarium, Tiruchirapalli.
- Sanjappa, M. (1992). Legumes of India. Bishen Singh Mahendra Pal Singh, Dehra Dun.
- Sankar, R. V., Ravikumar, K. & Ravichandran, P. (2012). Plant resources of Tiruvannamalai District, Tamil Nadu, India. Bishen Singh Mahendra Pal Singh, Dehra Dun.
- Savassi-Coutinho, A. P., Lewis, G. P. & Souza, V. C. (2012). *Mimosa roseoalba* (Leguminosae: Mimosoideae), a new species from Mato Grosso do Sul, Brazil. Kew Bull. 67: 827–831.
- Senthilkumar, T. & Krishnamurthy, K. V. (1993). Flora of Shervaroy hills of Eastern Ghats. J. Econ. Taxon. Bot. 17(3): 729–749.
- Simon, M. F. & Proenca, C. (2000). Phytogeographic patterns of *Mimosa* (Mimosoideae, Leguminosae) in the Cerrado biome of Brazil: an indicator genus of high altitude centers of endemism? Biol. Cons. 96: 279–296.
- Simon, F. A., Grether, R., De Queiroz, L. P., Sarkinen, T. E., Dutra, V. F. & Hughes, C. E. (2011). The evolutionary history of *Mimosa* (Leguminosae): Toward a phylogeny of the sensitive plants. Amer. J. Bot. 98(7): 1201–1221.
- Vajravelu, E. (1983). Mimosaceae. In: Henry, A. N., Kumari, G. R. and Chithra, V. (Eds.), Flora of Tamil Nadu, India. Series-1: Analysis Vol. 1. Botanical Survey of India, Coimbatore.
- Vajravelu, E., Joseph, J. and Radhakrishnan, N. C. (1987). Flora of Kalakkadu hills, Tirunelveli District, Tamil Nadu. J. Econ. Taxon. Bot. 10: 249–305.