New distributional record for two exotic invasive species: *Aeschynomene americana* L. and *Calopogonium mucunoides* Desv. in Tripura, North East India

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Abstract

Weeds are the undesirable plants that are grow in the vicinity of native plants. Generally they are highly competitive as well as adaptive in nature. The present paper deals with the new distributional record of two leguminous plants entitled *Aeschynomene americana* and *Calopogonium mucunoides* for the Tripura state.

Key words: Leguminosae, *Aeschynomene americana*, *Calopogonium mucunoides*, New records, Tripura

INTRODUCTION

Invasive alien species are those exotic species that becomes part of natural or semi-natural ecosystems or habitat, are mediators of transform, and menace to local biological diversity. These plants are tolerant to a wide range of soil as well as weather conditions, bearing seeds in abundant quantity with high dispersal rate, produce hostile root systems, prolonged flowering and fruiting time which help them to propagate and occupy over a large area quickly. The invasion of alien species into natural environs provides negative impact on worldwide moulds of native biodiversity. The taxonomists and ecologists are also conscious about this situation. Some alien species after establishment in a new locality, may relocate or substitute native plant and modify the prototype of plant succession. The exotic or alien plant species also may have much economic benefits beside the negative impacts. Exotic plants are now a days used as forage, cover crop as well as used for beautification (Inderjit *et al.* 2005).

Leguminosae is one of the largest flowering plant families having around 751 genera and 19,500 species (Lewis *et al.* 2005; LPWG 2013). In terms of economical view Leguminosae is the most important Dicotyledonous family (Harborne 1994) which provide food crops for world agriculture. Legumes are not only used as crops, forages and green manures. It is a tremendously important family which members yield multidimensional products like nutritious food, shelter, fibre woods, valuable medicines and also virulent poisons (Datta & Mukherji 1952).

Leguminosae was the most dominant family in the home gardens of Reang and Tripuri community in Tripura (Das & Datta 2018). Interestingly, other than economically important

legumes, some other weedy legumes were also collected from their home gardens. Three of those weedy plants are now reported here as new record of distribution for the state of Tripura in North-eastern Indian.

During survey of Reang and Tripuri Home Gardens in Tripura during September 2015 to December 2018, some interesting specimens were collected from S K Para (N 23°58'25.723 N & 91°58'10.793 E, elevation 76 m) and Umanjoy para (23°55'12.2" N & 91°51'14.5" E, elevation 93 m) and from the surrounding areas. All the specimens were collected in their flowering condition. Subsequently after flowering plant species have been identified using different literature, e-flora of India and images of Type specimens in different international herbaria. Collected specimens were processed (Jain & Rao 1977) and deposited in Tripura University Herbarium (TUH).

Taxonomic treatment:

Aeschynomene americana L., Sp. Pl. 713. 1753; Maheswari & Paul, J. Bombay Nat. Hist. Soc. 72: 165. 1975; Chandrab. *et al.*, Bull. Bot. Surv. India 18: 236. 1976; Mohanan, Fl. Quilon Dist. 136. 1984; Sanjappa, Legumes Ind. 75. 1992; Sasidh., Fl. Shendurany WLS 87. 1997; Anil Kumar *et al.*, Fl. Pathanamthitta 155. 2005.

The plant looks somewhat similar to *Aeschynomene indica* L.

Annual to short-lived perennial, procumbent to erect herb. Stem terete, branched, reddish brown, hairy. Leaves petiolate, unipinnate, peripinnate; stipules unequal, subulate, spurred, larger one with blunt spur and smaller one with pointed spur rachis hairy; petiole with a short pulvinus; leaflets sub-opposite, 10 – 38 pairs, narrowly oblong, 11 – 12 mm long, slightly curved, concave side entire, convex side serrated, acute. Flowers in axillary and terminal mixed panicle, many; bracts broadly subulate, slightly curved, 4 – 5 mm long, acuminate, green, hairy throughout; bracteoles 2, ovate-lanceolate, acuminate, green, hairy; pedicel 5 – 6 mm, slender, terete, green, hairy. Flowers 7 – 8 mm long, bisexual; Calyx bilabiate, hairy, pale green, 4 – 5 mm, anterior lobe slightly shorter and curved upward, slightly pinkish, posterior lobe almost straight, light green; Corolla papilionaceous, vexillum expanded, 6-7 mm long, claw yellow, limb pink with violet striations, wings 5 – 6 mm, keels 5-6 mm, claw in both deep purple, limb yellow; stamens 5+5, diadelphous, filaments 5 mm long, white, slightly unequal, anther 2 celled, yellow basifixed, yellow; carpel 1, 5 – 6 mm, ovary 0.8 – 1.0 mm, compressed, stalked, hairy, ovules 5 - 8, style curved, filiform, stigma continuous, smooth; lomentum schizocarpic, 30 – 33 mm long at maturity, 5 – 8 lobed,.

Exsiccatae: Tripura, Umanjoy para, Dhalai, *Das et al. TUH-1721*, Dated 06.12.2015

Global Distribution: Native of Tropical America; naturalised in India

Indian Distribution: Kerala, Tripura.

Distribution in Tripura- The species is found in some locations of Tripura *viz*, Umanjoy para (Dhalai), Reang Home garden; Moloy Nagar, NIT Road (West Tripura).

Calopogonium mucunoides Desv., Ann. Sci. Nat. (Paris) 9:423.1826; Saldanha in Fl. Karnataka 1:424.1984; Nair and Henry, Fl. Tamil Nadu 1: 93.1989. Misra & Pani, Proc. Natl. Acad. Sci. India, Sect. B Biol. Sci. 2014. *Calopogonium brachycarpum* (Benth.) Benth. ex Hemsl., Biol. Centr. Amer. Bot. 1:300.1880. *Stenolobium brachycarpum* Benth., Bot. Voy. Herald [Seemann] 3: 109. 1853. *Calopogonium orthocarpum* Urb., Symb. Antill. 1:327.1899.

Mainly procumbent herb, branches twining, densely hirsute with spreading fulvous hairs. Leaves alternate, trifoliate; stipules triangular-lanceolate, 4-5 mm; petiole 50 – 125mm long, terete, much hairy, pulvinus oblong; stipels subulate, terminal leaflet ovate-rhombic, entire, acute, pilose; lateral ones obliquely ovate, 40 – 105 × 20 – 50mm, entire, acute, acute, broadly cuneate to rounded at base, pilose. Racemes axillary, 11 – 100mm, often in 2 clusters; flowers 9–11 × 7 mm, 5 – 6 clustered at nodes of rachis; bracts broadly ovate, 3×2 mm, acute, densely pilose; bracteoles linear-lanceolate, 4 – 5×1 mm, acuminate, densely pilose; calyx campanulate, tube glabrescent; lobes 4, longer than tube, unequal, linear-lanceolate, acuminate, densely appressed hirsute; corolla purplish, vexillum emarginated, ca. 10 mm long; wings obovate-oblong; keel straight, with short auricles; stamens (9)+1; ovary oblong, densely hirsute in upper part, style terete, stigma curved-capitate. Pods linear-oblong, 30 – 40mm × 4 - 6 mm, straight or slightly curved, appressed with long brown pilose hairs, 5 or 6-seeded; seeds 2 – 2.5 × 1.5 – 2mm, rectangular, corners rounded, yellowish.

Exsiccatae: Tripura, S. K. para, *Das et al. TUH-2736*; Dated 07.10.2015

Global Distribution: Mexico, South and Central America and West Indies (Misra & Pani 2014). Introduced from Tropical Asia; now wild in Southern India

Indian distribution: Tamil Nadu, Kerala, Karnataka, Odisha, Rajasthan, Mizoram, Tripura

Distribution in Tripura-The species is found in S. K. Para, Tripuri home garden (Dhalai), by pass Roadside, (West Tripura), NH 8 road side, Agartala – Udaipur, (Sepahijala and Gomati).

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