

Transcontinental migration of Brazilian *Adenostemma suffruticosum* Gardner (Asteraceae) to India in the Northern Hemisphere

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Abstract

Adenostemma suffruticosum Gardner (Asteraceae) is basically an endemic plant of Brazil. Recently, it has been collected from Terai and Duars region of West Bengal in India recording its transcontinental migration to the Northern hemisphere. The species is now presented in this article with description, illustration and distribution map. The probable mode of its migration also has been discussed.

Key words: *Adenostemma suffruticosum*, Distribution, New record, India

INTRODUCTION

During recent floristic exploration (2009 – 2013) in Terai and Duars region of West Bengal, two small populations of one unknown member of Asteraceae was collected from marshy vegetation of Teesta and Mahananda Barrage areas, which is now identified as *Adenostemma suffruticosum* Gardner (Asteraceae). So far our literature and e-herbaria survey, the species is known to grow only from Latin America, particularly in Brazil.

Gardner (1847) recorded the species from 'Near Nossa Senhora d'Abadia', Brazil and published it in London Journal of Botany and the type specimens are preserved in Kew Herbarium (Hind 2012). After a long period, Eric Koiti Okiyama Hattori and Jimi Naoki Nakajima recorded this plant in Hoehnea from Panga Ecological Reserve, Uberlandia, Minas Gerais, Brazil. *Adenostemma suffruticosum* is an endemic and was known to grow only in the Northeastern and West-Central parts of Brazil, occurring in the states of Mato Grosso do Sul, Goiás, Minas Gerais and Distrito Federal. This species grows in moist or dry grassland and in semi-deciduous dry forest (Hattori & Nakajima 2011; Forzza 2010). In recent studies the species is found growing in the marginal areas of two wetlands in Terai-Duars areas of West Bengal in India.

From literature survey it is established that there is no record of occurrence of this species in India even not from Asia. In fact, the occurrence of *Adenostemma suffruticosum* was known only from Brazil (Fig 1; www.discoverlife.org) situated in the southern hemisphere of the globe. The image of Gardner's specimen in K, protologue description by Gardner (1847) and the descriptions presented in Baker (1876) and Hattori & Nakajima (2011) are

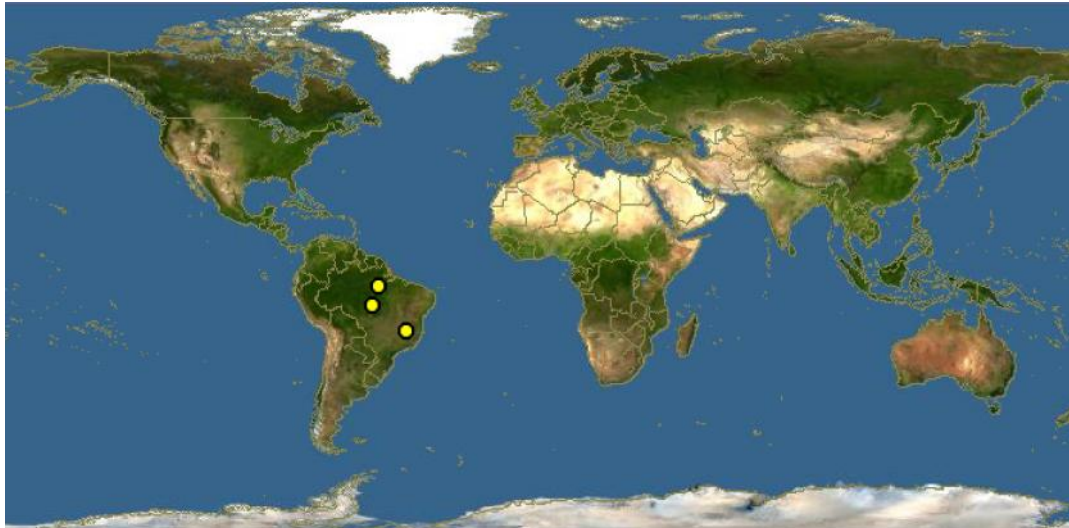


Fig. 1. Previously known distribution of *Adenostemma suffruticosum* (yellow dots on Brazil) [Map source: <http://www.discoverlife.org/mp/20m?kind=Adenostemma+suffruticosum>]

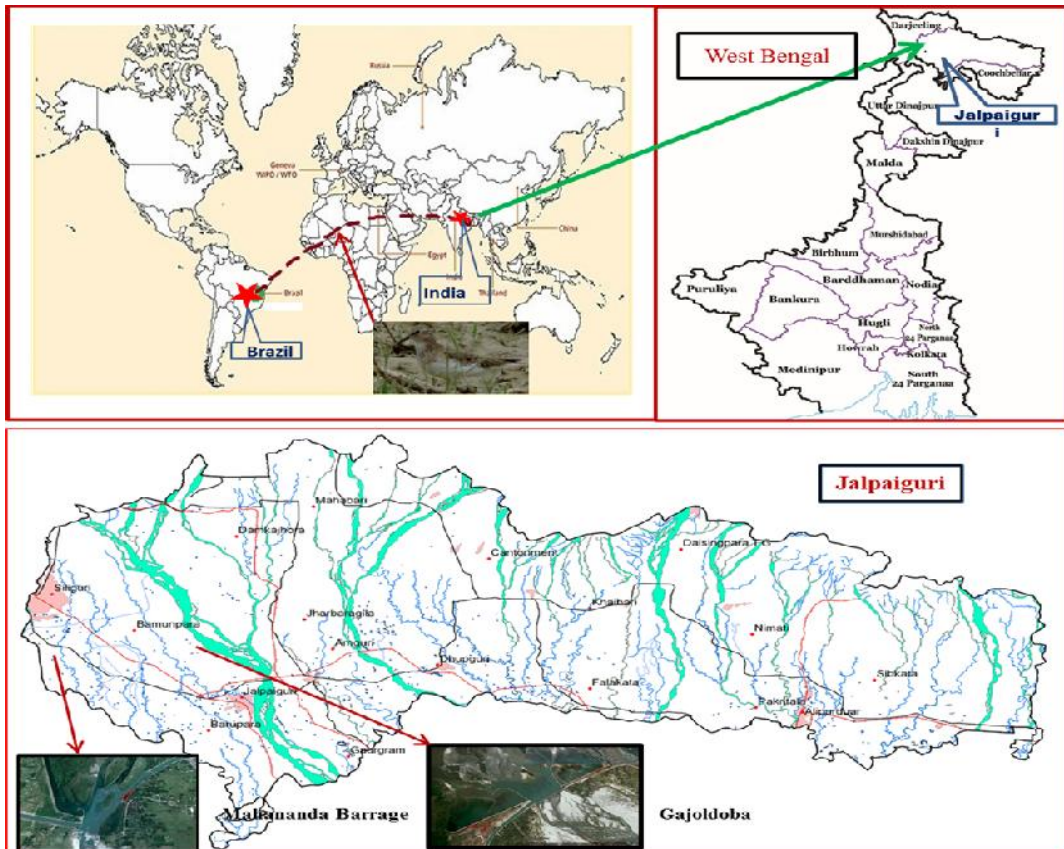


Fig. 2. Past and present distribution of *Adenostemma suffruticosum*, A. Locations in Brazil and in India (inset, *Pectoral sandpiper*); B. Location in West Bengal; C. Locations at Mahananda barrage (inset) and at Teesta barrage at Gajoldoba (inset).

matching nicely with the specimens collected from Teesta and Mahananda barrages. There is no specimen of *Adenostemma suffruticosum* in major Indian Herbaria including CAL.

Teesta and Mahananda barrages are favourite winter habitat in India for many long distant intercontinental migratory birds including Sandpiper, Brahmini duck, Bar-headed Goose, Poachard, Pintail, Shoveler, Mallard, Black Ibis, and many species of Stork, Cormorant and Duck etc. The Brazilian migratory birds, like *Calidris melanotos* (*Pectoral sandpiper*), also visit this area. The sticky cypsellas of *Adenostemma suffruticosum* can remain stick to the body of these birds and, subsequently, might have lodged in its presently discovered habitat leading to a successful trans-continental migration of the species. The geographical positions of the newly recognised habitats for this plant in India are 26°45'13.40" N latitude and 88°35'09.59" E longitude at Gajoldoba (Mahananda Barrage) and 26°39'20.46" N latitude and 88°24'34.65" E longitude at Teesta Barrage (Fig. 2).

For nomenclature www.theplantlist.org has been consulted and for description Gardner (1847) and Hattori & Nakajima (2011) were referred mostly. A brief description along with photographs (Plate I) is given below for easy recognition of the plant.

Adenostemma suffruticosum Gardner in London J. Bot. 6: 433. 1847; Hattori & Nakajima in Hoehnea, 38(2): 44. 2011. *Adenostemma scaevolifolium* Martius ex Baker, Fl. Bras. (Martius) 6(2): 186. 1876 [1 Feb 1876]

Undershrub, upto 1.5 m high. Stem angular, puberulous. Lower leaves opposite, alternate above, sessile or sometimes shortly (upto 2 cm in vegetative phase) petiolate; lamina 1.5 – 12 × 0.5 – 07 cm, ovate-elliptic to slightly oblanceolate, crenate, acute or acuminate to obtuse, base attenuate, both surfaces glabrous. Capitula discoid in spreading panicles; peduncle 4.5 – 8.5 cm; involucre campanulate, bracts connate at base, glutinous, 3 – 5 × 0.5 – 1 mm, lanceolate or narrowly oblong, entire, acute to obtuse. Bracteoles connate at base, 3 – 4 × 0.4 – 0.6 mm, linear lanceolate, entire, obtuse. Receptacle convex, naked, foveolated. Externally visible parts of all florets white; ray florets absent; disc florets 40 – 50, corolla tubular, glandular-tomentose outside, 5-lobed (0.5 mm); anther base obtuse, terminal appendage missing, approximately 1 mm; style branches 2, 3 mm long, clavate. Cypsela remain exposed, slightly spreading, obconical, glutinous, 2 mm long with glandular trichomes, black; pappus represented by 3 – 4 small caecum like oblong or slightly spatulate structures.

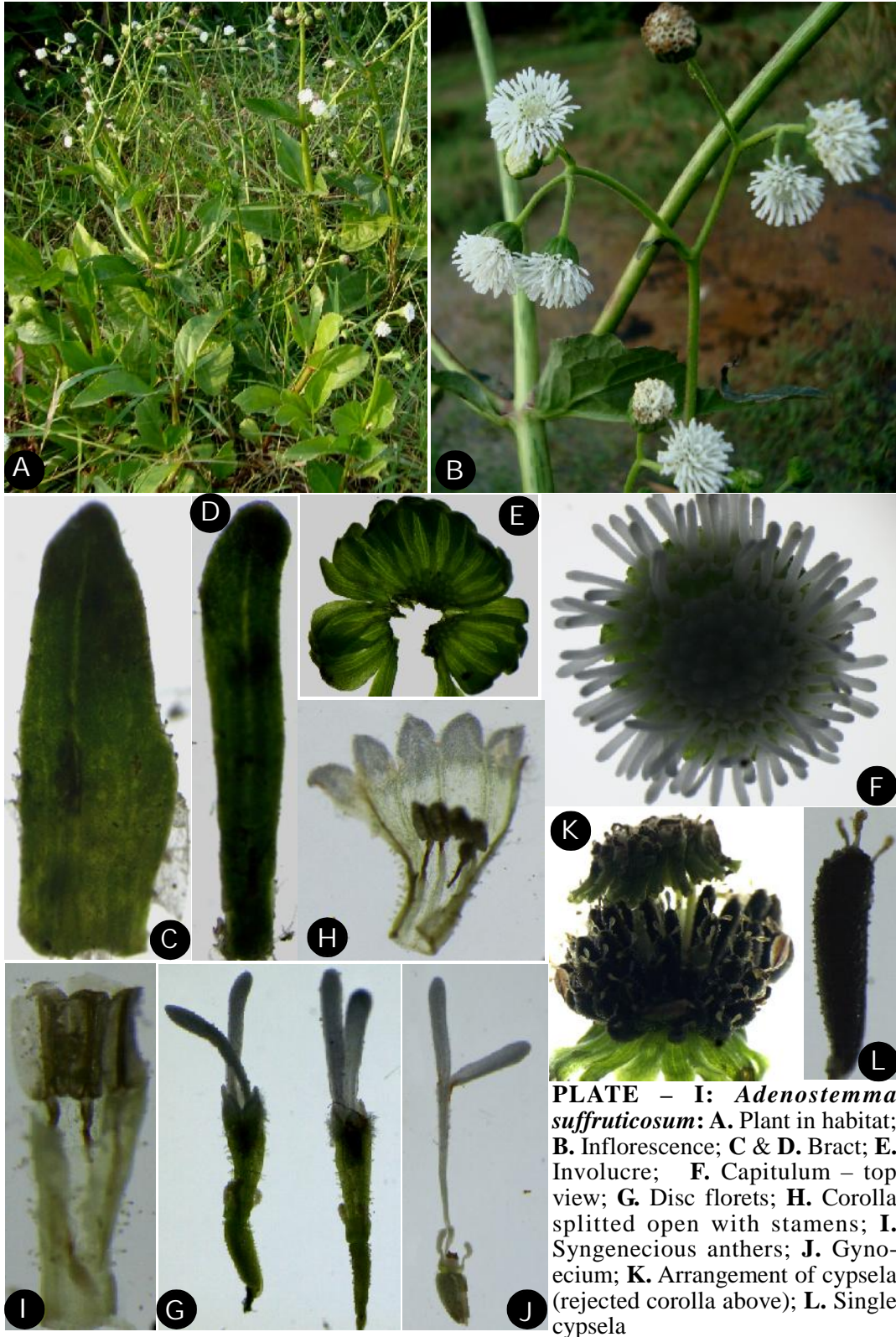
Material examined: Images of specimen of Harvard University Herbaria, Barcode-00000621; Type specimen at Kew Herbarium- K000677904 or Gardner-4204, Minas Gerais; Uberlandia, the Panga Ecological Reserve, 18-VI-1999, fl, fr., *Araújo Faria & sn* (HUFU20431), 11-VII-1997 and illustration of Eric Koiti Okiyama Hattori and Jimi Naoki Nakajima published in Hoehnea

Distribution: Southeast and West-Central BRAZIL and now from the Terai and Duars of West Bengal in INDIA.

Specimens cited: Teesta Barrage (Gajoldoba), *Anurag & AP Das 2105*, dated 22.10.2013; *Anurag & AP Das 2109*, dated 09.12.2013; and Mahananda Barrage, *Monoranjan & AP Das 3045*, dated 23.12.2013. [Specimens will be deposited at NBU and at CAL]

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