

**PRAXELIS CLEMATIDEA (GRISEB.) R.M. KING & H. ROB. (ASTERACEAE):  
A NEW ALLIEN INVASIVE ANGIOSPERMIC RECORD FOR BANGLADESH**

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The genus *Praxelis*, comprising 19 species, is moderately predominant in the Eupatorieae tribe. This genus originates from South America, particularly in Colombia, the Guianas, and Venezuela, southernmost Brazil, and central Argentina (Dillon and Hensold, 1993; Freire and Espinar, 2014; Abreu and Esteves, 2017; Christ and Ritter, 2019). Moreover, the genus *Praxelis* was introduced to Southeast China, Guinea, Hainan, Malaya, Taiwan, and Thailand (POWO, 2024). Despite the fact that species belonging to this genus are commonly viewed as ubiquitous weeds, none of its species have been reported in Bangladesh till date (Prain, 1903; Hossain, 1967, 2008; Khan, 1992; Rahman *et al.*, 2008; Rahman, 2013; Uddin and Hassan, 2018). Currently, the authors, while investigating the flora in the regions of the Birulia and Keraniganj Upajilas of the Dhaka district, collected certain specimens that resemble *Ageratum* species but have a pungent aroma when crushed. After a crucial taxonomic inquiry, these specimens have been identified as *Praxelis clematidea* R.M. King & H. Rob. Since no previous records of this species have been documented within the current geographical region of Bangladesh (Hooker, 1879; Prain, 1903; Heinig, 1925; Khan, 1992; Hossain, 1967, 2008; Rahman and Hassan, 2017; Uddin, 2018; Rahman, 2013; Rahman and Uddin, 2018; Uddin and Hassan, 2018), it has been stated here as a new angiosperm record for Bangladesh. The specimens are deposited at the Jahangirnagar University Herbarium (JUH) and the Bangladesh National Herbarium (DACB). A comprehensive description of the species, accompanied by a photograph and illustration, is given below.

***Praxelis clematidea*** (Griseb.) R.M. King & H. Rob., *Phytologia* 20: 194 (1970). *Chrysocoma pauciflora* Vell. in *Fl. Flumin.*: 325 (1829); *Eupatorium catarium* Veldkamp in *Gard. Bull. Singapore* 51: 121 (1999); *E. clematideum* (Wall. ex DC.) Sch. Bip., *Jahresber. Pollichia* 22: 258 (1866). —TYPE: Argentina: Dec.1872-Jan.73, *Hieronymus & Lorentz s.n.* (C), *E. clematideum* Griseb. in *Abh. Königl. Ges. Wiss. Göttingen* 24: 172 (1879), *nom. illeg.* —TYPE: Paraguay, 1875, *Balansa, B. 936* (GOET, GOET001495, photo!), *E. urticifolium* var. *clematideum* Hieron. ex Kuntze in *Revis. Gen. Pl.* 3(3): 148 (1898). **(Fig. 1).**

Bangla name: Biral Sunghi

English names: Pussy Foot, Giant Bluetop, *Praxelis*

Annual or short-lived perennial herb, 0.6–1.0 m tall. Stem erect to decumbent, usually with several branches from the base or lower part, cylindrical, eglandular, striated hirsute, rarely glabrescent, with very strong smell. Leaves opposite, petiole 0.3–2.0 cm long, hirsute; leaf blade ovate to elliptic rhomboid or filiform, 2–6 × 1–4 cm, apex acute, base attenuate or cuneate, adaxial

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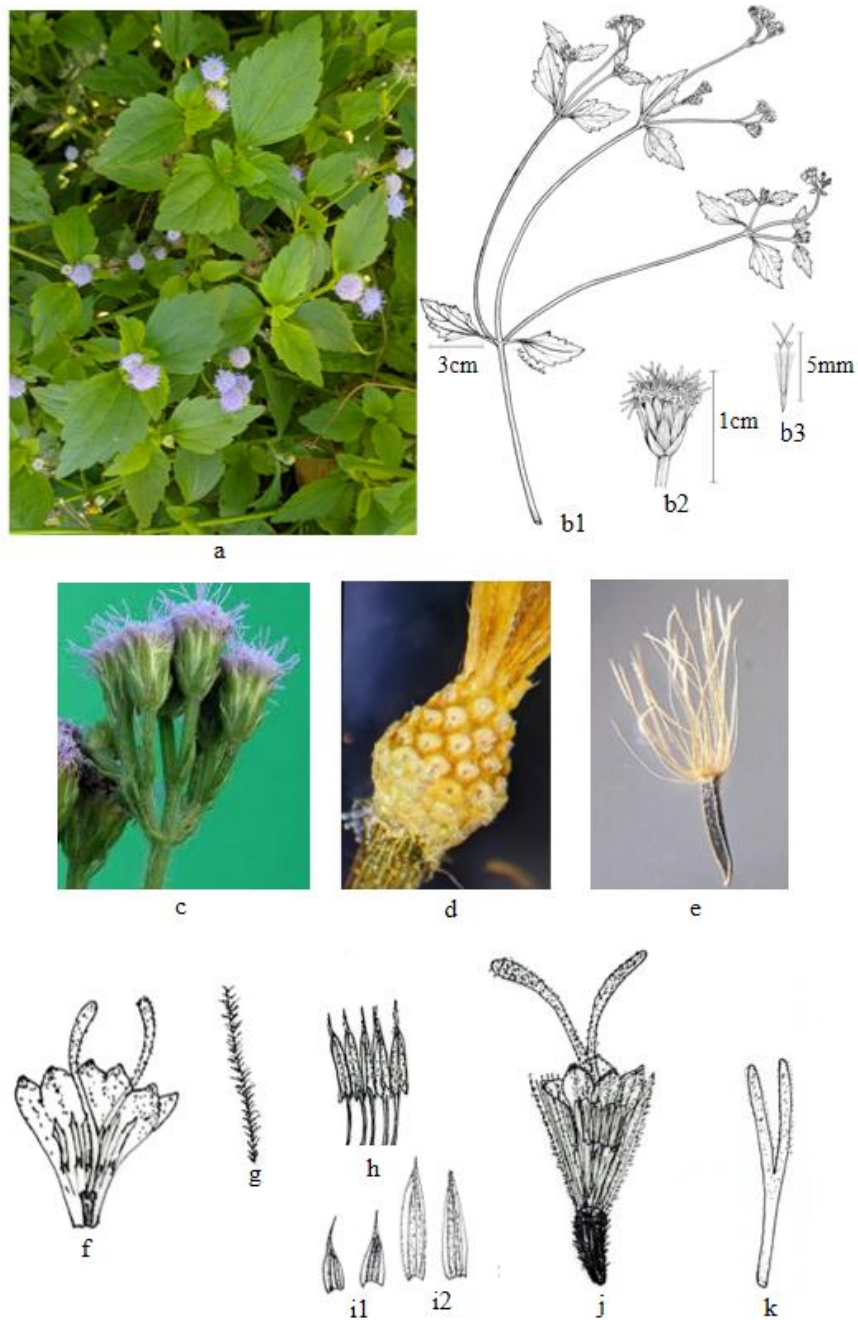


Fig. 1. *Praxelis clematidea* (Griseb.) R.M. King & H. Rob. (a) Habit ( $\times 0.4$  cm), (b1) Flowering branch ( $\times 0.6$  cm), (b2) Capitulum, (b3) Inner floret, (c) Inflorescence ( $\times 2.3$  mm), (d) Open receptacle ( $\times 7$  mm), (e) Achene with pappus ( $\times 3.75$  mm), (f) L.S. of corolla of bisexual floret ( $\times 2.5$  mm), (g) Pappus ( $\times 5$  mm), (h) Stamens ( $\times 9$  mm), (i1) Inner bracts ( $\times 2.5$  mm), (i2) Outer bracts ( $\times 2.5$  mm), (j) Bisexual floret ( $\times 4$  mm), (k) Bifurcate style ( $\times 3.4$  mm).

surface hirsute with uniseriate simple hairs, abaxial surface densely hirsute with uniseriate simple and glandular hairs, marginally conspicuously 5–8 toothed on each side. Capitula 2–6 or more, terminal, corymbiform, discoid, 1–3 cm long, peduncles 2–10 mm, with long primary and secondary branches, pubescent; involucre usually narrowly campanulate, 4–6 mm in diameter; phyllaries up to 15–25, unequal, 3–4-seriate, imbricate, lanceolate or linear, (1.0–) 4.0–6.0 mm long, apices acuminate or acute, margins entire, ciliate, adaxially usually appressed strigose or pubescent mainly at the upper parts or apices with scattered short simple eglandular hairs at base, deciduous. Receptacles conical, epaleate, disc florets 25–57 per capitulum, carpodium distinct, broad, highly asymmetrical, laterally inserted in the receptacle. Disc florets (4.5–) 6.0–8.0 mm long; pappus of 15–40 bristles, 2–5 mm long, scabrid, white, persistent; corolla narrowly tubular-funneliform, purplish, lilac or bluish in upper part, whitish in lower part, shortly 5-lobed, or with cylindrical throat and slightly narrower basal tube, corolla tubes 2–4 mm long, papillose on inner surface, usually glabrous outside. Stamens 2.5–5.0 mm long, attached inside the petals; anthers about 1.5 mm long, apex acute, appendages longer than wide, filaments c. 2 mm long. Ovary c. 2 mm long; style glabrous, c. 7 mm long, bifurcated, style base not swollen, branches bright lilac-blue, 2.0–2.5 mm long, coarsely papillose, narrowly linear, more broadened in distal half, densely long papillose. Fruits achene, black, c. 2.0–4.5 mm long, 3–4-ribbed, obcompressed, sparsely setuliferous, mainly on the ribs, glabrous in between the ribs. *Flowering and fruiting*: All around the year, but mostly in winter.

*Chromosome number*:  $2n = 30$  (Watanabe *et al.*, 1995),  $n = 31$  (Veldkamp, 1999).

*Reproduction*: This species reproduces by seed and stem cuttings.

*Ecology*: Grows in waste areas, grasslands, pastures, fallow land, roadsides, walkways, and stream banks. It also encroaches upon cultivated lands and crops.

*Uses*: *Praxelis clematidea* possesses anti-inflammatory, anti-oxidant, anti-ulcer, anti-bacterial, anti-diarrhoeal, and antifungal activities (Xiao *et al.*, 2020).

*Distribution*: This species is native to Brazil, Bolivia, Peru, Paraguay, and Northern and Central Argentina and has been introduced into Caroline Islands., Southeast China, Chinese Taipei, Guinea, Hainan, Malaya, Queensland, the South China Sea, Taiwan, Thailand, and Florida (POWO, 2024; GBIF Secretariat, 2023). It seems to be an alien species in Bangladesh, as it is reported to have been introduced in Asia and Africa (POWO, 2024).

*Representative specimens examined*: Dhaka: Dhaka Metropolitan Area, Raerbazar, Boddho Vumi, 30 xi 2019, *M Sultana DMS-3179* (DACB 99086); Keraniganj, Kalatoli, 20 xi 2023, *M Sultana* and *Hedayet Ullah DMS-5102* (DACB 99085); Srinagar, Taranagar, 16 xii 2023, *Hedayet Ullah* and *M Sultana HU-437* (DACB 99087); Savar, Dairy farm, 23°52'25.9"N 90°16'49.3"E, 14 vii 2023, *M.A. Rahim 3996* (JUH), Jahangirnagar University Campus, 11 v 2024, *M.A. Rahim 10258* (JUH); Birulia, Bara Kakar, 23°51'38.1"N 90°20'01.7"E, 18 xi 2023, *M.A. Rahim, 3994* and *3995* (JUH), Diabari, Muktarpur, 23°52'17" N and 90°14'47"E, 18 xi 2023, *M.A. Rahim 3997* (JUH). Moulvibazar: Sreemangal, Satgaon, 09 iii 2024, *M.A. Rahim 10257* (JUH).

*Note*: According to the original description, *Praxelis clematidea* was published as a new combination of *Eupatorium clematideum* Griseb., with distribution in Argentina and Bilovia. Balansa, B. 936, collected in 1875 from Paraguay, is cited as the type specimen of *E. clematideum* Griseb. in its original description. However, *E. clematideum* Griseb. is an illegitimate name and a replaced synonym of *P. clematidea*, and *E. clematideum* (Wall. ex DC.) Sch. Bip. is the earlier legitimate name (Tropicos, 2024). *E. catarium* Veldkamp, *E. clematideum* Griseb., and *E. urticifolium* var. *clematideum* Hieron. ex Kuntze are cited as the homotypic synonyms of *P. clematidea* in POWO (2024). *P. clematidea* is now considered an invasive weed in different

countries (Intanon *et al.*, 2020; Pagad, *et al.* 2015; United States Department of Agriculture, 2014; Wardini, 2023; Zhang *et al.*, 2020).

The true identity of this species might have been hidden for a decade due to its striking morphological similarities to a few common weed species of Asteraceae found in Bangladesh, such as *Ageratum conyzoides* and *Chromolaena odorata*. *Praxelis clematidea* is distinct from *Ageratum* species by its deeply toothed leaves with a pungent aroma similar to the “minty cat urine” smell when crushed, deciduous phyllaries leaving a naked receptacle, pappus of more than 15 setae, and 3–4-ribbed achenes, compared to crenate or scalloped, non-pungent leaves, persistent phyllaries, at least the basal ones, paleaceous receptacle, pappus of 5–6 scales or awns, and 5-angled or ribbed achenes of *Ageratum* species. It differs from *Chromolaena* species by its herbaceous habit, conical receptacle, 3–4-ribbed achenes, compared to the undershrub habit, flat to slightly convex receptacle, 5-ribbed achenes. In a number of publications (Intanon *et al.*, 2020; Pagad, *et al.* 2015; United States Department of Agriculture, 2014; Wardini, 2023; Zhang *et al.*, 2020), *Praxelis clematidea* has been classified as invasive. Field observations suggest that *Praxelis clematidea* grows aggressively; in most of the habitats visited during this study, its rapidly expanding population appears to be impeding the growth of other species, and within its population, the individuals of other species were not found. For these reasons, this alien species is inferred to be an alien invasive in Bangladesh. The normal growth and spread of native terrestrial plant species in Bangladesh may be threatened by the aggressive and mat-forming growth of this alien invading species.

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