

Extended distribution of *Blumea balsamifera* to Uttar Pradesh

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ARTICLE INFO

Keywords

Asteraceae, Maharajganj, New Record, Uttar Pradesh

Citation:

Singh, S., Shekhar, S., Mishra, A., Kharwar, G., Vaishya, J.K. and Madhukar, V.K., 2023. Extended distribution of *Blumea balsamifera* to Uttar Pradesh. *Indian Journal of Forestry*, 46(1), pp.54-57. <https://doi.org/10.54207/bsmps1000-2023-36UUGC>

ABSTRACT

In the present paper *Blumea balsamifera* (Asteraceae) is reported for the first time from the Terai region of eastern part of Uttar Pradesh state in India. It is earlier known to occur from eastern Himalaya in Sikkim, Assam to West Bengal, Andaman and Nicobar Islands, and Madhya Pradesh. A detailed description, information on its phenology, habitat, distribution, threat and photographic illustration have been provided for easy identification.

INTRODUCTION

The genus *Blumea* DC. is one of the largest genus of Tribe Inuleae of Asteraceae and comprises 100 species distributed in old world tropics and South Africa (Mabberley, 2017). Genus *Blumea* is represented by 29 species in India (Kumar & Pant, 1995). Most of species of *Blumea* are widespread weeds commonly found in disturbed areas but some species are restricted to undisturbed and specific geographical areas (Pornpongrungrueng et al., 2016).

Blumea balsamifera, native to tropical-subtropical Asia was discovered originally from India orientalis (Extending from India to the coasts of Southern China with the Pearl River Estuary, including all of the Malay Peninsula and Indochina, northern Borneo, and the Philippines) (<https://www.raremaps.com/gallery/detail/73568/india-orientalis-hondius>) and later recorded from West Bengal, Sikkim, Assam, Manipur,

Meghalaya and Andaman and Nicobar Islands. It now extends its distribution further in the Terai region of Uttar Pradesh. This species shows similarity with *Blumea densiflora* and can be easily confused due to morphological similarities. However, the shrubby habit, corolla lobes of the bisexual florets with collators, minutely serrate leaf margins with upcurved teeth and white pappus are the important characters that distinguish it from *B. densiflora*. It is commonly known as Ngai camphor because of camphor like smell from all parts of the plant. This species has a wide range of distribution in various habitats such as the dry field and grasslands, mountain slopes ascending to 1200m, and along the river banks (Kumar & Pant, 1995).

During the field survey in Maharajganj district of eastern Uttar Pradesh the authors collected few specimens in vegetative condition in the month of January and February (2023). Regular monitoring of this plant was carried out and, subsequently the flowering started in the second week of March. A critical study and perusal of the literature revealed that this plant belonged to *Blumea balsamifera* (L.) DC. [Inuleae-Plucheineae] of family Asteraceae, so far not reported from Uttar Pradesh. (Hooker, 1882; Duthie, 1903; Bhattacharyya, 1964; Panigrahi & Saran, 1967, 1968; Panigrahi, Singh & Mishra, 1969; Singh, 1909; Maheshwari & Sharma, 1969; Singh and Dixit, 1972; Sharma and Pandey, 1984; Srivastava, 1976; Singh & Srivastava, 2000; Pandey & Shukla, 2003; Shukla & Roy, 2004; Dwivedi, Singh & Samuel, 2015; Khanna, 2018; Lata, 2017; Khanna, 2017; Kushwaha, Tewari and Chaudhary, 2018). Thus the present report is the first report of the species from Uttar Pradesh. A brief description of the species is given below.

Received: 20-03-2023; Revised: 27-04-2023; Accepted: 29-04-2023;
Published: 30-06-2023

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DOI: <https://doi.org/10.54207/bsmps1000-2023-36UUGC>

DESCRIPTION

Blumea balsamifera (L.) DC., Prodr.5: 447. 1836; Hook.f., Fl. Brit. India 3: 270. 1882; Kanjilal, Fl. Assam 3: 113. 1939; Mukherjee, Fl. Pachamarhi & Bori Reserves: 154. 1984; Kumar in Hajra et.al. [Eds]. Fl. India 13:118. 1995. *Conyza balsamifera* L., Sp. Pl. 2: 1208. 1763. (Fig. 1)

Type: India, Herb. Linn. no. 993.18 (type LINN Image!).

Shrub, erect, up to 1–3 m tall. Stems erect, round, solid, woody, corymbosely branched, young stem covered with silvery, multicellular hairs, turning brownish at maturity. Leaves elliptic to lanceolate, 18–23 × 3.0–5.5 cm, adaxially brownish sericeous lanate, abaxially densely silky pubescent with multicellular hairs, base attenuate, apex acuminate or acute, margins serrate to serrulate with upcurved teeth, rarely dentate near the base; veins, thick, light green; petioles 2–4 cm long, with 2 pairs of appendages, 1.5–2.5 cm long. Inflorescence axillary corymbose, and spreading panicles, 7–35 cm long; capitula heterogamous (female florets at periphery, bisexual florets towards the centre), 0.2–0.25 cm in diam.; peduncles slender, 0.6–1.0 cm long; phyllaries 5–10 seriate; outer lanceolate, 0.2–0.4 mm broad, acute, densely pilose; inner linear, scarious, with ciliate margins, pilose; receptacle 0.25–0.35 cm in diam., slightly convex, alveolate, glabrous. Flowers yellow, tubular; tube 0.45–0.55 cm long, glabrous, Calyx reduced to pappus, of 22–25 bristles, persistent, white, 0.5–0.65 cm long. Corolla yellow, tubular; lobes oblong-lanceolate, 0.2–0.3 mm long; female florets filiform, 0.5–0.6 cm long; bisexual florets 0.7–0.8 cm long, glabrous, 5 lobed, oblong-lanceolate, 1–2 mm long. Androecium synandrous; anthers 0.15–0.2 cm long; apical appendages round, base with branched tails, anther-tails equal to, or longer than the anther collars. Style arms 0.5–1.0 mm long, base swollen. Cypsela brown, oblong, 5-ribbed, 0.5–1.5 × 0.2–0.4 mm, pilose. (Fig. 1)

Flowering & Fruiting: March–May

Chromosome No.: 2n=20 (Daruwalla, 1995)

Habitat & Ecology: Usually, grows in disturbed and invaded land and open areas, mixed with sal forest where sunlight reaches the ground. It has been also collected from the deciduous and evergreen forests along dry stream beds and roads. Besides, it also grows in mountainous areas on slopes up to 1500 m altitude. Sometimes also found along riversides.

Uses: Ngai-camphor is commercially extracted from its leaves in China and Myanmar for export. Used as remedy against contusion; infusion of leaves for herbal bath by mother after child birth, also used to cure throat and chest ailments, dropsy and high fever. Leaves have essential oil, chopped and dried leaves smoked to relieve the pain of sinusitis in Thailand (Aguilar, 1999; Alonzo, 1999). Decoction of dried herb and powder of leaves used in chronic purulent discharges externally whereas internally the decoction is given for worms, in dysentery and chronic uterine discharges. It is also useful for the disease of nose “Ahwah” peculiar to Bengal, and accompanied by strong

fever, heaviness in the head, pain in the neck, shoulders and joints. Widhiantara and Jawi (2021), have presented an extensive review on *B. balsamifera* which provides an essential data of the potential application of this plant.

Distribution: INDIA; Andaman & Nicobar Is., Assam, East Himalaya, Madhya Pradesh, Manipur, Sikkim, Uttar Pradesh (Terai Region of Eastern Uttar Pradesh), West Bengal, East Himalaya. BANGLADESH, NEPAL, CAMBODIA, CHINA, INDONESIA, LAOS, LESSER SUNDA IS., MALAYASIA, MYANMAR, NEPAL, NEW GUINEA, PENANG, PHILIPPINES, SINGAPUR, SRI LANKA; TAIWAN; THAILAND; VIETNAM.

Specimens examined: INDIA: **Sikkim;** East Sikkim, Below Pheri Monastery Rolep, 10.03.2022, 1876m, 27° 14' 30.14" N 88° 41' 18.02" E, N. Sherpa, S. Mangar and SB Chettri 42382 (BSHC). **Assam;** N. Lakhimpur, Nalarani Res., 17.05.1966, D.M. Verma 46393 (ASSAM); Sonapahar to Boku, 02.04.1962, G.V. Subba Rao 28527 (ASSAM); Lakhimpur, Tong-Loti, 12.05.1939, P.R. Dutta 20959 (ASSAM). **Meghalaya;** Barapani, Shillong 17.01.1957, G.K. Deka 3872 (ASSAM); K & J Hills, Sinduli, 13.03.1972, P.C. Pant 51532 (ASSAM); Garo Hills, Dambu Res. 25.03.1915 U.N. Kanjilal 5368 (ASSAM); Nongpoh, 15.03.1966, J. Joseph 45145 (ASSAM); Khasi & Jaintia Hills, Barapani old road, near Dam site, 11.04.1965, H. Deka 35497 (ASSAM); Khasi Hills, G. Mann 37 (ASSAM); Garo Hills, Tura wadanang on way to Edenbari, 13.04.1974, M.K.V. Rao 59188 (ASSAM); Nongpoh, Umling, 15.03.1966, J. Joseph 45145 (ASSAM); K & J Hills, 3 miles from Jowai to Jarain, 23.01.1957, G. Panigrahi 5092 (ASSAM); K & J Hills, Barapani, 16.02.1950, D.N. Paul 22917 (ASSAM); K & J Hills, Puangtung, 11.11.1936, G.K. Deka 15346 (ASSAM); **Manipur;** Moirang, Dampi Reserve Forest, 07.08.1969, J.G. Srivastava & Party 81799 (LWG!); Imphal, Moreh road, 12/04/1962, J.G. Srivastava & Party 83258 (LWG!); Senapati District, Maram, 18.04.2006, A.A. Mao & R. Gogoi 111189 (ASSAM). **Mizoram;** Murlen National Park, Ngur-Vapui buffer, 26.09.2012, Ramesh Kumar & Party 127394 (ASSAM). **Arunachal Pradesh;** Subansiri F.D. (NEFA), Amjee to polin, 5 miles from Amjee 13.11.1964, ARK Sastry 40597 (ARUN); Upper Siang district, Yingkyong, 3 km towards Moing, 17.03.2004, Ritesh Kumar Chaudhary 16319 (ARUN); Geku-kanker, 09.04.2005, Ritesh Kumar Chaudhary 16437 (ARUN); Kakpar area, Mariyang, 14.04.2007, Ritesh Kumar Chaudhary 18419 (ARUN); Siang, Tuting, 06.11.1958, R.S. Rao 17310 (ASSAM); Lohit, Kamlang river bed, 04.12.1969, J. Joseph 48488 (ASSAM); Lohit, In the vicinity of Demwe, on the way to Hayuliang, 12.01.1970, J. Joseph 48911 (ASSAM); Siang, Kampong to Pakam, 23.05.1958, G.K. Murthy 13040 (ASSAM). **Uttar Pradesh;** Maharajganj, Pharenda Range Forest, 27°07'04.16" N–83°25' 20.43" E, 73m, 12.03.2023, Sneha Singh and Gajendra P. Kharwar SN501 (GPU).

DISCUSSION

Khanna et al., 2001 described this species in Supplement to the Flora of Madhya Pradesh, based on the details from the Flora

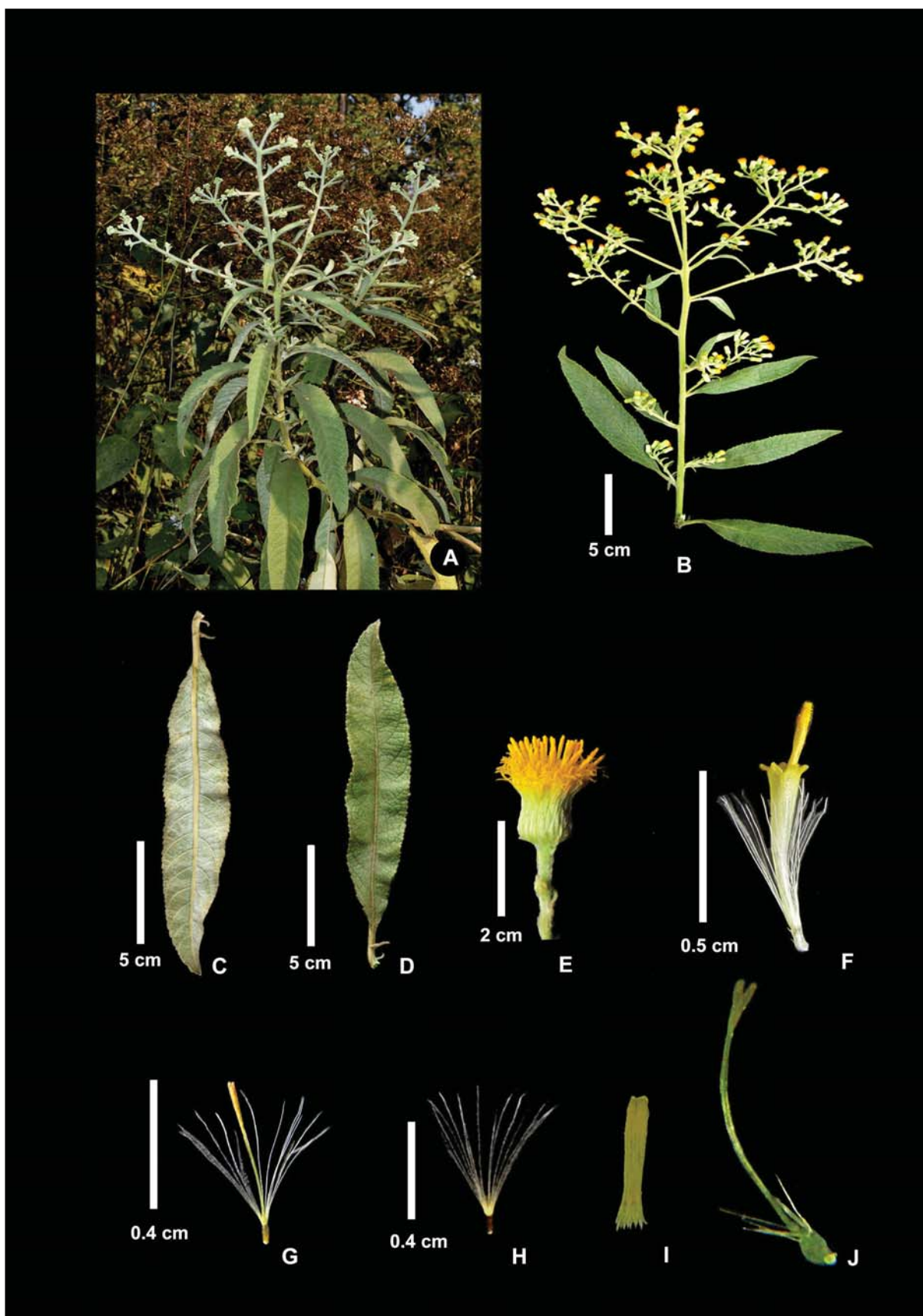


Figure 1: *Blumea balsamifera* (L.) DC. (A-J): A. Habit, B. A flowering twig, C. Ventral surface of leaf, D. Dorsal surface of leaf, E. An inflorescence with involucre, F. Tubular bisexual flower, G. Marginal female flower, H. Fruit with pappus, I. Anther, J. Pistil.

of Pachmarhi Bori Reserves (Mukherjee, 1984) wherein he mentioned it from Pachmarhi up to 1000 m with occasional distribution. He (as well as most of the flora) mentioned the pappus as red but the pappus is white in our specimens. This species has been collected from the Maharajganj district of eastern Uttar Pradesh, the adjoining district of Nepal border, most likely this species might have migrated through water current from Nepal Himalayas, as the plants grow on hilly slopes of Nepal.

ACKNOWLEDGEMENTS

The author VKM is grateful to National Medicinal Plant Board (NMPB), Ministry of AYUSH, Government of India, New Delhi for financial assistance. The authors express their gratitude to the Director, Botanical Survey of India, Kolkata, herbarium Curators of Botanical Survey of India, Arunachal Pradesh Regional Centre, Itanagar (ARUN), Sikkim Himalayan Regional Centre, Gangtok (BSHC), Eastern Regional Centre, Shillong (ASSAM), Central Regional Centre, Prayagraj (BSA), and herbarium Curator of National Botanical Research Institute, Lucknow (LWG) for providing herbarium details. Thanks, are also due to Dr S.K. Srivastava former Scientist-in-Charge, Botanical Survey of India, NRC, Dehradun for valuable suggestions and guidance.

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