

Journal of Threatened Taxa



Open Access

10.11609/jott.2024.16.3.24819-25018

www.threatenedtaxa.org

26 March 2024 (Online & Print)

16(3): 24819-25018

ISSN 0974-7907 (Online)

ISSN 0974-7893 (Print)

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Silver Jubilee Issue



ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)

Publisher
Wildlife Information Liaison Development Society
www.wild.zooreach.org

Host
Zoo Outreach Organization
www.zooreach.org

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Cover: The breathtakingly beautiful Silver Jubilee cover of JoTT is done in color pencils and ink by the 13-year old darling, Elakshi Mahika Molur.



Extended distribution of *Clematis wightiana* Wall. (Ranunculaceae) in the Indian State of Arunachal Pradesh – a hitherto endemic species of the Western Ghats, India

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The genus *Clematis* L. belongs to the family Ranunculaceae, distributed throughout the world, specifically in temperate and subtropical regions of the North Hemisphere, and comprises c. 280–350 species globally (Tamura 1987, 1995; Wang & Li 2005). In India, the genus comprises 49 taxa viz. 42 species, one subspecies, and six varieties (Mao & Dash 2020) of which 13 taxa are endemic to India. From a taxonomic point of view, the genus is the most difficult one in the family Ranunculaceae, and has been treated variously from time to time. De Candolle (1818), in his revisionary study, treated 84 taxa of the genus *Clematis* L., into four (04) Sections. Spach (1839) classified the genus into three (03) Sections. In 1888, Prantl proposed a new sub-sectional classification of the genus which was later supported by Schneider (1906), Rehder & Wilson (1913), Handel-Mazzetti (1939), and Rehder (1940). In 1950–1967, Tamura made a comprehensive study of the genus *Clematis* L. which was based on Prantl's framework. However, after 20 years, in his revised system of classification (1987), Tamura introduced a new character, i.e., phyllotaxy of seedling leaves and proposed a subgeneric classification of the genus. This

treatment was later followed by Snoeijer (1992) and Grey-Wilson (2000) with few modifications. However, Johnson (1997, 2001), in his recent revisionary studies, did not accept the newer sub-generic classification of the genus *Clematis* L. of Tamura and rather he was fond of his earlier classification of this genus with 07 subsections of the section *Clematis* L. (Wang 2004).

Clematis wightiana Wall. belongs to the family Ranunculaceae, and has been reported as an endemic to the Western Ghats in India. A thorough review of the literature along with a meticulous study of herbarium specimens has indicated the occurrence of this species from Karnataka (Saldanha 1984), Kerala (Daniel 2005), Maharashtra (Cooke 1958; Singh & Karthikeyan 2000), and Tamil Nadu (Nair & Henry 1983). Further consultation of herbarium specimens deposited at MH, RHT, TBGT, and appraisal of relevant literature (Hook.f. & Thomson 1872) was done for authenticating the distribution of the species in the Western Ghats. As part of the Action Plan Project, entitled 'Flora of West Siang District, Arunachal Pradesh', extensive field trips were carried out during 2010–2013 to different areas of West Siang district of Arunachal Pradesh during which

Editor: Aparna Watve, Biome Conservation Foundation, Pune, India.

Date of publication: 26 March 2024 (online & print)

Citation: Pramanick, D.D. & M. Bhaumik (2024). Extended distribution of *Clematis wightiana* Wall. (Ranunculaceae) in the Indian State of Arunachal Pradesh – a hitherto endemic species of the Western Ghats, India. *Journal of Threatened Taxa* 16(3): 24999–25002. <https://doi.org/10.11609/jott.8662.16.3.24999-25002>

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Funding: None.

Competing interests: The authors declare no competing interests.

Acknowledgements: The authors are grateful to the director of the Botanical Survey of India for providing multifarious facilities during carrying out the Action Plan project. The senior author is thankful to all field staff for helping with field collection. Sincere thanks are expressed to the HoO, Arunachal Pradesh Regional Centre (ARUN) for sending the scanned images of the desired species.



an interesting species of the family Ranunculaceae was collected from the villages of Mechuka (28.60027N, 94.13444E), Rego (28.53456N, 94.21392E), near Tato (28.52798N, 94.37317E) and way from Rego to Tato (27.79944N, 94.07472E). A total of 12–15 smaller patches were noticed from each locality which was part of a scattered population. The identification of the species was confirmed by consultation of protologue, authentic literature, and type specimen. During the consultation of Ranunculaceae specimens in ASSAM herbarium, two (2) similar collections of G. Panigrahi 15601 & 6636 and one (01) collection of D.B. Deb 30844, collected from Kameng District, Arunachal Pradesh, and Mizoram respectively, identified as *Clematis wightiana*, were examined. Based on Deb's collection, the species was included in the Flora of Mizoram (Singh 2002), but unfortunately was overlooked in any of the published flora of Arunachal Pradesh. However, until the discovery of *Clematis wightiana* Wall. from the state of Arunachal Pradesh, the species was reported as a narrow endemic to Western Ghats, especially to the states of Karnataka, Kerala, Maharashtra, and Tamil Nadu (Singh et al. 2015) and occasionally in Bailadilla, Madhya Pradesh (Arora 1968). However, no specimen was found in any of the National Herbarium from the mentioned region which at present belongs to the state of Chhattisgarh. Further, thorough literature survey also concludes uncertain distribution of the species *Clematis wightiana* in the state of Chhattisgarh. The present report of the species represents an extended distributional range to the state as well as a new record for the state of Arunachal Pradesh, earlier known from Western Ghats and the state of Mizoram. In the present communication, detailed descriptions of the species with citation, type, flowering & fruiting data, ecology, and distribution status are provided along with herbarium images.

Clematis wightiana

Wall. [Cat. No. 4674. 1828, *nom. nud.*] ex Wight & Arn., Prodr. 2. 1834; Hook.f. & Thomson in Hook.f., Fl. Brit. India 1: 5. 1872; Dunn in Gamble, Fl. Madras 3(2): 1915; Deb & Dutta in J. Econ. Tax. Bot. 10(1): 28. 1987; M.A. Rau in B. D. Sharma & al. (ed.), Fl. India 1: 80. 1993; Singh et al., Endemic Vasc. Plts. India 222. 2015; V.K. Mastakar et al. in A.A. Mao & S.S. Dash (ed.), Checkl. Flower. Pl. India (Dicot.) 1: 19. 2020.

Type: India, without locality, R. Wight s.n. (MH)

Large woody climbers, c. 2–5 m high, covered with shining greyish or brownish hairs throughout; branches curved, 12-ribbed, villous. Leaves opposite, pinnately 3–5-foliate; leaflets oblong-ovate or ovate-lanceolate,

6–10 x 3–5 cm, entire, often 3–5-lobed, ovate-cordate at base, margin irregularly dentate, acute or mucronate at apex, chartaceous, softly silky, villous, dark above, brown sericeo tomentose beneath; nerves prominent, thick beneath; petioles long, silky hairy. Inflorescences axillary or terminal, paniculate; bracts and bracteoles present; bracts ovate, 0.3–0.5 cm long, hairy; bracteoles linear, 0.1–0.2 cm long, hairy, narrowly linear. Flowers white or pale cream or golden yellow, c. 6cm across; perianth uniseriate, petaloid; tepals 4, ovate to ovate-elliptic, 1.5–3 x 0.5–0.8 cm, ribbed, soft tomentose outside, glabrous inside; stamens many; filaments linear, glabrous at apex and base, hairy at middle, 7–10 cm long; pistils many; style feathery, hairy, white, 0.3–0.5 cm long. Achene ovate, 0.4–0.5 x 0.2–0.3 cm, compressed, silky hairy, crowned with persistent elongated feathery style (Image 1).

Flowering & fruiting: November–March; January–May

Distribution: India: Arunachal Pradesh, Karnataka, Kerala, Maharashtra, Mizoram, Tamil Nadu

Habitat, Ecology & Conservation Status: These woody climbers grow in open forests, on hill slopes at 1,300–1,800 m altitude. The species is facing a shrinking population in its natural habitat due to overgrazing by domestic animals, collection of fire wood by localities, deforestation for rapid urbanization, development of the tourism sector, increased number of scientific field tours throughout the year, and uncontrolled collection of specimens in bulk, etc. Although no measure has been proposed for this species till now, to prevent the reduction of the population size of the species in nature, in situ as well as ex situ conservation measures are to be adopted at the government level.

Specimens examined: 25157 (ARUN), 13.xi.2010, India, Arunachal Pradesh, West Siang, Mechuka, 28.60027N, 94.13444E, 1,800 m., coll. M Bhaumik; 25159 (ARUN), 13.xi.2010, India, Arunachal Pradesh, West Siang, Rego to Tato, 27.79944N, 94.07472E, 1,200 m, coll. M Bhaumik; 15601 (ASSAM), India, Arunachal Pradesh, West Kameng, Brukpata, 27.37666N, 92.28583E, 1,960 m., coll. G. Panigrahi; without coll. no. (ASSAM), 08.iv.1957, India, Arunachal Pradesh, Hill slope near Rupa upto Jegaon, 27.20250N, 92.39805E, 1,515 m., coll. unknown; without coll. no. (MH), without coll. date, India, Karnataka, Chamarnajagar, 11.92254N, 76.94515E, 733 m., coll. unknown; without coll. no. (MH), without coll. dt., India, Karnataka, Kolar, 13.13615N, 78.12879E, 872 m, coll. unknown; without coll. no. (MH), without coll. dt., India, Kerala, Wayanad, 11.69334N, 76.12997E, 765 m, coll. unknown (MH);

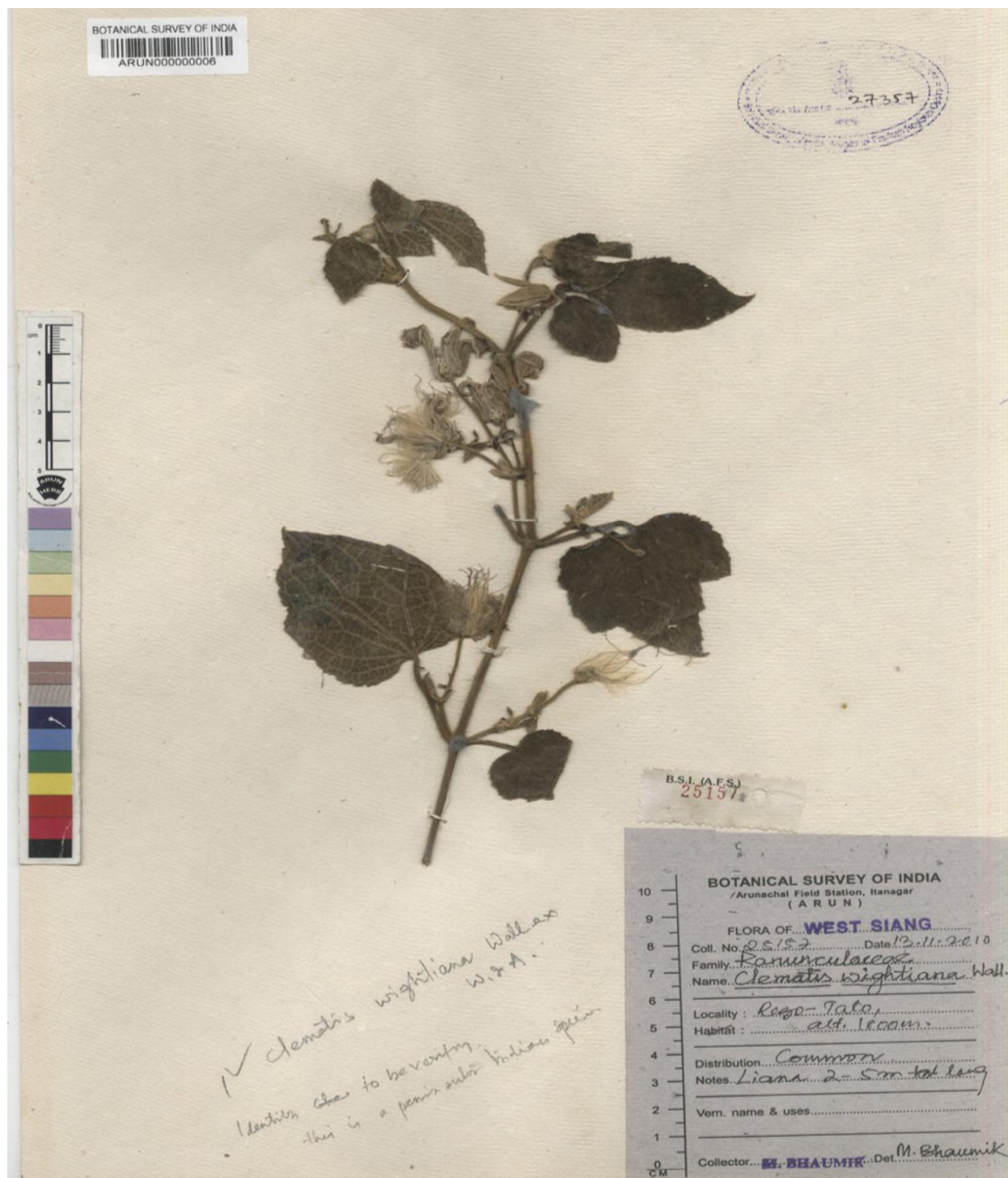


Image 1. Herbarium specimen of *Clematis wightiana* Wall. deposited in ARUN, BSI.

30884 (ASSAM), 16.i.1963, India, Mizoram, Aizawl, Sialsuk, 23.39833N, 92.74218E, 1,315 m., coll. D.B. Deb; 40336 (MH), 28.ii.1972, India, Tamil Nadu, Nilgiri, Snowdown R.F., 11.57444 N, 76.75416E, 800 m., coll. B.D. Sharma.

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Print copies of the Journal are available at cost. Write to:
The Managing Editor, JoTT,
c/o Wildlife Information Liaison Development Society,
43/2 Varadarajulu Nagar, 5th Street West, Ganapathy, Coimbatore,
Tamil Nadu 641006, India
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Journal of Threatened Taxa is indexed/abstracted in Bibliography of Systematic Mycology, Biological Abstracts, BIOSIS Previews, CAB Abstracts, EBSCO, Google Scholar, Index Copernicus, Index Fungorum, JournalSeek, National Academy of Agricultural Sciences, NewJour, OCLC WorldCat, SCOPUS, Stanford University Libraries, Virtual Library of Biology, Zoological Records.

NAAS rating (India) 5.64



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ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

March 2024 | Vol. 16 | No. 3 | Pages: 24819–25018

Date of Publication: 26 March 2024 (Online & Print)

DOI: 10.11609/jott.2024.16.3.24819-25018

www.threatenedtaxa.org

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