

***Grewia villosa* Willdenow (Malvaceae): a new record from Eastern India**

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Abstract

Grewia villosa Willdenow (Malvaceae) is reported here for the first time from eastern India. Detailed taxonomic description, distribution and an illustration are provided to aid in identification of the species.

Key words: *Grewia villosa*, Malvaceae, New record, Eastern India.

INTRODUCTION

The genus *Grewia* was established by Linnaeus in 1737 in honour of Nehemiah Grew (1641 – 1712), an English plant anatomist and physiologist. It comprises c. 280 species distributed in warm regions of Old world (Mabberley 2008) and of these, 31 species occur in India (Daniel & Chandrabose 1993). In course of a herbarium consultation tour to National Botanical Research Institute, Lucknow for the preparation of 'Flora of Bihar' and 'Flora of Jharkhand', first authors came across three specimens of *Grewia villosa* Willdenow from Bhikhna Thori of West Champaran district in Bihar. The locality of these collections is in Terai region of Himalaya bordering Nepal. After critical examination of these specimens, it has been confirmed as *Grewia villosa* Willdenow, which is generally found in Western, South, Central and Northern India. Perusal of relevant literatures (Banerjee 1997; Bhattacharya & Sarkar 1998; Daniel & Chandrabose 1993; Haines 1910, 1921; Masters 1874; Mooney 1950; Nayar *et al.* 2006; Paria & Chattopadhyay 2000; Prain 1903; Saxena & Brahmam 1994; Shanpru & Chauhan 2000; Sharma & Sarkar 2002; Singh 2002; Singh 1986; Singh *et al.* 2001; Varma 1981) revealed that this species has not been reported from eastern India so far. Hence, the collection of J.G. Srivastava from Bhikhna Thori of West Champaran district in Bihar is reported here for the first time from eastern India. Detailed taxonomic description, distribution with an illustration has been provided to aid in identification of the species.

TAXONOMIC TREATMENT:

Grewia villosa Willdenow in Ges. Naturf. Freunde Berlin Neue Schr. 4: 205. 1803; Dalzell & Gibson, Bombay Fl. 25.1861; Masters in Hooker *f.*, Fl. Brit. India 1: 388. 1874; Gamble, Fl. Pres. Madras 119. 1915; V. Narayanan & R.S. Rao in J. Indian Bot. Soc. 29: 179. 1950; N.C. Nair & A.N. Henry, Fl. Tamil Nadu 1: 45. 1983; C.J. Saldanha, Fl. Karnataka 1: 225. 1984; V. Singh in B.V. Shetty & V. Singh (eds.), Fl. Rajasthan 1: 156. 1987; Cook, Fl. Pres. Bombay 1: 143. 1901; J.F. Duthie, Fl. Upper Gangetic Plain 1: 112. 1903; Vajravelu, Fl. Palghat 95. 1990; P. Daniel in Taxon 40:610. 1991; P. Daniel & Chandrabose in B.D. Sharma

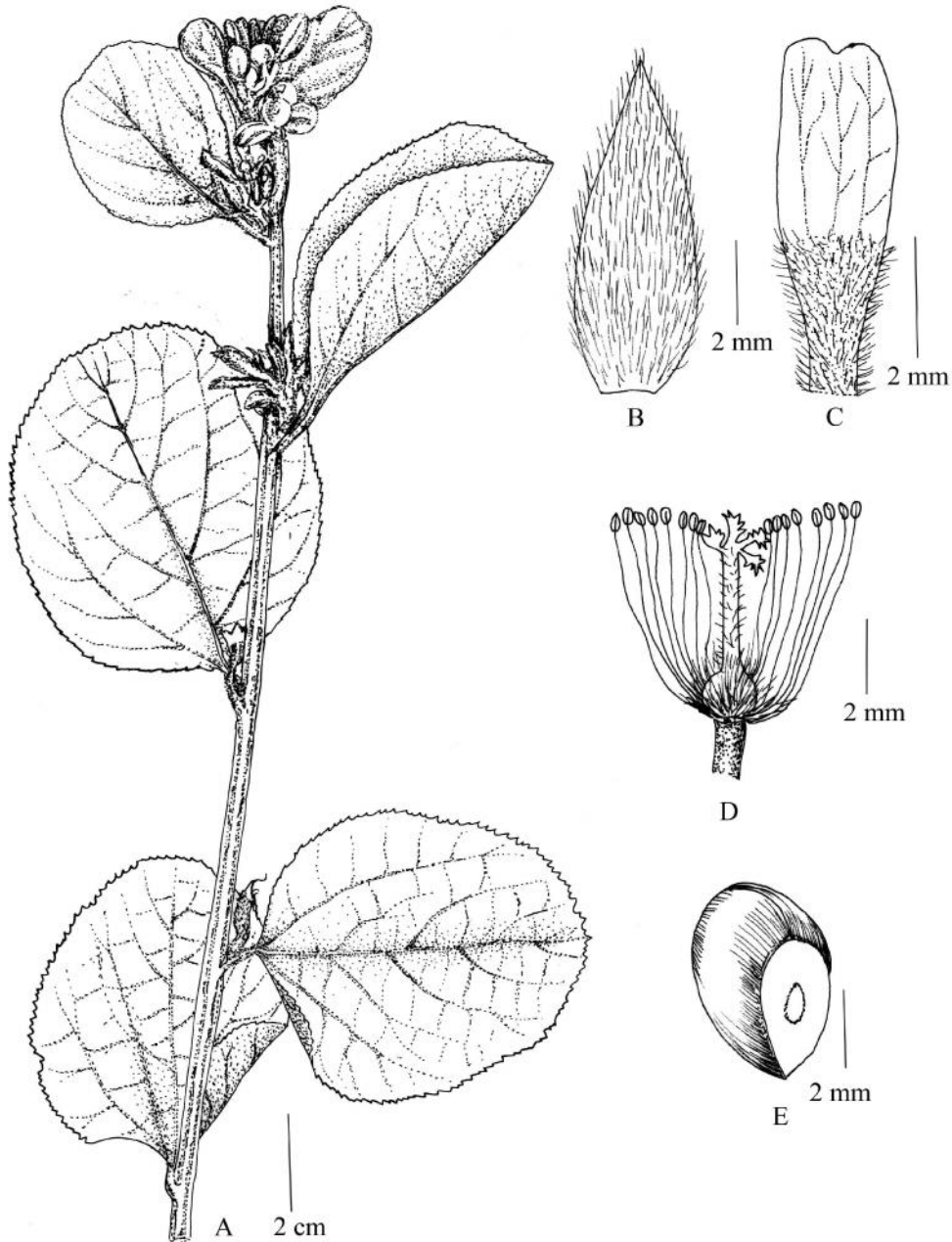


PLATE - I. *Grewia villosa* Willdenow: A. Flowering twig; B. Sepal; C. Petal; D. Gynoecium with stamens; E. Seed

& Sanjappa (eds.), Fl. India 3: 515. 1993; S.G. Pradhan in N.P. Singh & S. Karthikeyan (eds.), Fl. Maharashtra 1: 396. 2000. *G. orbiculata* G. Don, Gen. Hist. 1:551.1831. *G. coryfolia* A. Rich in Guillemin *et al.*, Fl. Senega. Tent. 95,t. 20.1831. (**Plate I**)

Shrubs or small trees, 2 - 5 m tall. Stems with ash-grey bark, young twigs covered with dense fine stellate tomentum. Leaves ovate-orbicular, 2.5 - 9 × 1.5 - 8.5 cm, cordate to subcordate at base, crenate or serrulate at margins, rounded to abruptly acuminate at apex, scabrous above, villous beneath, 5-nerved from the base; petioles 2 - 5 mm long, densely

stellate hairy; stipules ovate-oblong, *c.* 1 cm long, densely villous outside. Cymes umbel, 4-6-flowered, axillary or leaf-opposed; peduncles 0.8 - 1.5 cm long; buds ellipsoid, 4 - 8 × 4 - 5 mm, pilose; pedicels 2 - 5 mm long; bracts elliptic-lanceolate, 7 - 8 mm long, stellate tomentose on both sides. Sepals 5, lanceolate, 8 - 10 × 1.5 - 2 mm, acute at apex, villous outside, glabrous inside, glands on both sides. Petals 5, oblong, *c.* 4.5 × 1.5 mm, about half the length of the sepals, emarginate at apex; glands obovoid, *c.* 1.5 mm long, densely hairy and ciliate. Stamens 25 - 30, filaments *c.* 5 mm long. Ovary subglobose, *c.* 2 × 2 mm, densely villous; style 3 - 4 mm long, stellate hairy; stigma lacinate, 4-lobed. Drupes subglobose, 1.2 - 1.5 cm across, cordate at base, densely villous, muricate; seeds *c.* 4 mm across.

Flowers & Fruits: March - October.

Habitat: Dry deciduous forest.

Distribution: India [Andhra Pradesh, Bihar (present report), Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh]; Pakistan, Tropical Africa, Arabia, Egypt, Cape Verde Isles and East Indies.

Specimens examined: Bihar: West Champaran dist., Bikhna Thori, along Railway line, going south, 16.03.1958, *J.G. Srivastava* 49041 (3 collections, LWG!); Tamil Nadu: Coimbatore dist., Thadagam, 23.06.1973, *G.N. Tribedi* 538 (CAL!); Andhra Pradesh: Cuddapah dist., Guvvala Cheruvu, along the stream, 990 m, 22.08.1958, *K. Subramanyam* 6393 (CAL!); Gujarat: Saurashtra coast, Beyt Island, 16.11.1962, *T.A. Rao* 1263 (CAL!); Rajasthan: Barmer dist., Haldeshwar Mahadev R.F., 500 m, 14.11.1981, *R.P. Pandey* 7941, (CAL!); Karnataka: Belgaum dist., 29.07.1897, *W.A. Talbot* 3931 (CAL!); Maharashtra: Poona, 1889, *N.M. Tilak s.n.* (CAL!)

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LITERATURE CITED

- Banerjee, R.N. 1997. *Flora of West Bengal*. Vol. 1: 337 - 342. Botanical Survey of India, Calcutta.
- Bhattacharya, P.K. & Sarkar, K. 1998. *Flora of West Champaran District, Bihar*. Botanical Survey of India, Kolkata.
- Daniel, P. & Chandrabose, M. 1993. Tiliaceae. In Sharma, B.D. & Sanjappa, M. (eds.) *Flora of India*. Vol. 3: 477 - 524. Botanical Survey of India, Calcutta.
- Haines, H.H. 1910. *A forest flora of Chotanagpur including Gangpur and the Santal Parganahs; A description of all indigenous trees, shrubs, and climbers, the principal economic herbs and most common cultivated trees and shrubs*. Superintendent, Government Printing, Calcutta, India.
- Haines, H.H. 1921. *The Botany of Bihar and Orissa*. Part II. Adlard & Son Co. Ltd., London.
- Mabberley, D.J. 2008. *Mabberley's Plant-Book – A Portable Dictionary of the Vascular Plants, their classification and uses*. Third edition. Cambridge University Press. Cambridge.

- Masters, M. T. 1874. *Grewia* Linn. In Hooker, J. D. (ed.) *The Flora of British India*. Vol. 1: 383 - 393. L. Reeve & Co., London.
- Mooney, H.F. 1950. *Supplement to the Botany of Bihar and Orissa*. Catholic Press, Ranchi.
- Nayar, T.S.; Rasiya Beegam, A.; Mohanan, N. & Rajkumar, J. 2006. *Flowering plants of Kerala – A Handbook*. Tropical Botanic Garden and Research Institute, Thiruvananthapuram, Kerala.
- Paria, N.D. & Chattopadhyay, S.P. 2000. *Flora of Hazaribagh District, Jharkhand*. Vol. I. Botanical Survey of India, Kolkata.
- Prain, D. 1903. *Bengal Plants*. Vol. I. West, Newman & Co., London.
- Saxena, H.O. & Brahmam, M. 1994. *The Flora of Orissa* Vol. I. Regional Research Laboratory (Council of Scientific & Industrial Research) and Orissa Forest Development Corporation Ltd., Bhubaneswar.
- Shanpru, R. & Chauhan, A.S. 2000. *Grewia* L. In Singh, N.P.; Chauhan, A.S. & Mondal, M.S. (eds.) *Flora of Manipur*. Vol. 1: 182 - 184. Botanical Survey of India, Kolkata.
- Sharma, T.K. & Sarkar, A.K. 2002. *Grewia* L. In Singh, N.P. & Rao, P.S.N. (eds.). *Flora of Palamau District, Jharkhand*. pp. 122 - 123. Botanical Survey of India, Kolkata.
- Singh, K.P. 2002. *Grewia* L. In Singh, N.P.; Singh, K.P. & Singh, D.K. (eds.) *Flora of Mizoram*. Vol. 1: 267 - 271. Botanical Survey of India, Kolkata.
- Singh, M.P. 1986. *Flora of Patna (Dicotyledones)*. International Books & Periodicals Supply Service, New Delhi.
- Singh, N.P.; Mudgal, V.; Khanna, K.K.; Srivastava, S.C.; Sahoo, A.K.; Bandyopadhyay, S.; Aziz, N.; Das, M.; Bhattacharya, R.P. & Hajra, P.K. 2001. *Flora of Bihar - Analysis*. Botanical Survey of India, Kolkata.
- Varma, S.K. 1981. *Flora of Bhagalpur - Dicotyledons*. Today & Tomorrow's Printers and Publishers, New Delhi.