

## ***Merremia hirta* (Linnaeus) Merrill [Convolvulaceae]: a new record for Nepal**

**Nirmala Joshi<sup>1</sup> and Mohan Siwakoti<sup>2</sup>**

<sup>1</sup>Ministry of Forests and Soil Conservation, Department of Plant Resources, Thapathali, Kathmandu, Nepal, *E-mail*: nirmalaktm@gmail.com

<sup>2</sup>Tribhuvan University, Central Department of Botany, Kirtipur, Kathmandu, Nepal  
*E-mail*: mohansiwakoti@live.com

[Received Revised 19.11.2012; Accepted 24.11.2012]

### **Abstract**

*Merremia hirta* (Linnaeus) Merrill, (Convolvulaceae) is described as new record for Nepal. This plant material was collected from Makawanpur district of Central Nepal. The morphological characteristics of this plant are compared with its allied species.

**Key words:** Convolvulaceae, *Merremia*, Makawanpur district, Nepal, New record

### **INTRODUCTION**

*Merremia* Dennstedt ex Endlicher is a genus of Convolvulaceae, belonging to tribe Merremieae. Members of the genus are commonly known as wood rose. The genus *Merremia* Dennstedt ex Endlicher has about 80 species distributed throughout the tropical region of Africa, Asia, Australia, North and South America (Yu Huang Cao Shu 1995). There are more than 150 species listed under the genus *Merremia* (International Plant Names Index, September 2010) and 54 accepted species are recorded in <http://www.plantlist.org/browse/A/Convolvulaceae/Merremia>.

*Merremia hirta* (Linnaeus) Merrill, was originally described as *Convolvulus hirtus* by Linnaeus (1753). A total of 5 species under the genus *Merremia* Dennstedt ex Endlicher are reported from Nepal, these include *M. emarginata* (Burman) H. Hallier, *Merremia hederacea* (Burman f.) H. Hallier, *M. umbellata* (Linnaeus) H. Hallier f. subsp. *orientalis* (Hallier f.) van Ooststroom, *M. vitifolia* (Burman) H. Hallier (Hara *et al* 1982; Press *et al* 2000; Anonymous 2001). Out of these, *Merremia umbellata* (Linnaeus) Hallier f. subsp. *orientalis* (Hallier f.) van Ooststroom and *Merremia vitifolia* (Burman f.) Hallier f. are deposited at National Herbarium and Plant Laboratories, Lalitpur, Nepal, KATH (Anonymous 1976; Rajbhandari *et al* 2012). *Merremia hirta* (Linnaeus) Merrill, which has been collected from the Makawanpur district, is a new addition to flora of Nepal.

### **MATERIALS AND METHODS**

This work is based upon the study of specimens collected from Handikhola area of Makawanpur district, Central Nepal. While critically examining the morphological characters of the collected specimens the unique features were pointed out. For correct identification of the species, web media like [www.coldh.mnhn.fr/scientificName/Merremia/hirta](http://www.coldh.mnhn.fr/scientificName/Merremia/hirta),

www.biodiversitylibrary.org/name/Merremia hirta and www.tropicos.org/Name/8502865 were consulted. Herbarium specimens of *Merremia* at National Herbarium and Plant Laboratories, Lalitpur (KATH) and Tribhuvan University Central Herbarium, Kirtipur (TUCH) were also examined to confirm this specimen. The collected specimens (both fresh and dry) were critically studied using the literature such as Merrill (1912); Ooststroom (1939; 1953), Biju & Mathew (1994); Yu Huang Cao Shu (1995); Mill (1999); Johnson (2009). Measurement of the vegetative and reproductive parts was taken from the collected materials. Flowers and fruits were studied using a dissecting microscope. Then this specimen was compared with the image of the type specimen, Linnaeus Herbarium No. 218.56. It was confirmed that the plant was *Merremia hirta* (Linnaeus) Merrill, that was never before recorded from Nepal. Therefore, a detailed taxonomic account and illustration (Figure 1) are provided for easier identification, and a comparison with its allied species has also been provided (Table 1). The herbarium specimens have been deposited at National Herbarium and Plant Laboratories, Lalitpur, Nepal (KATH) and Tribhuvan University Central Herbarium, Kirtipur, Nepal (TUCH).

### TAXONOMIC ACCOUNT

***Merremia hirta*** (Linnaeus) Merrill in Philip. J. Sci. 7, Bot. 244. 1912; Ooststroom, Blumea 3: 307, 1939. *Convulvulus hirtus* Linnaeus, Sp. Pl. 1:159. 1753. *C. caespitosus* Roxburgh, Fl. Ind. 2: 70. 1824. *Ipomoea linifolia* Blume, Bijdr. 72. 1825. *I. philippinensis* Choisy, Mem. Soc. Phys. Geneve 6: 475. 1833. *M. caespitosa* (Roxburgh) Hallier f. in Engl. Bot. Jahrb. 16: 552. 1893. Winkler in Engl. Bot. Jahrb. 49: 378. 1913. [Figure 1].

Twinning or prostrate herb. Stem slender, 20 – 150 cm long, hirsute or subglabrous, hollow, subfistular, brown. Lamina variable in shape on the same plant, linear to ovate, oblong-lanceolate, ovate-oblong or ovate, borne on one side, 2 – 6 x .5 – 2 cm, entire, obtuse to slightly emarginate or mucronate, base obtuse to cordate or truncate or hastate, both surfaces glabrous or sparsely pilose beneath. Petiole slender, 1 – 2 cm long, hirsute or glabrous at maturity. Cymes axillary, 1 – 3 flowered; peduncles 1.5 – 7.5 cm, slender, pilose; pedicel slender, glabrous, 3 – 5 mm, longer in fruit; bracts 1 – 2 mm long, ovate, acute-obtuse, glabrous. Flowers 1.5 – 2 cm across. Sepals light green, glabrous, unequal, outer 2 oblong-elliptic, 3 – 4 mm long, 1 mm broad, accrescent in fruit, inner 3 oblong or oblong-elliptic, 4.5 – 6 mm, accrescent, 6 – 8 mm in fruit. Corolla pale yellow or yellow or whitish, campanulate, 1.5 – 2 cm across, glabrous, membranous with wavy margin. Stamens 3, pale yellow; anthers pale yellow, spirally twisted; filament inflated at base, hairy. Pistils included; stigma inconspicuous; style 4 – 5 mm long, glabrous, persistent in fruit; ovary green, glabrous, 4-loculed. Capsule broadly ovoid to globose, thin walled, green, glabrous, light brown at maturity, papery, 6 – 9 mm across, 1-celled, 4-valved, crowned with stout style. Seeds dark brown, 3 – 4, glabrous, subglobose, 1 – 2 mm across.

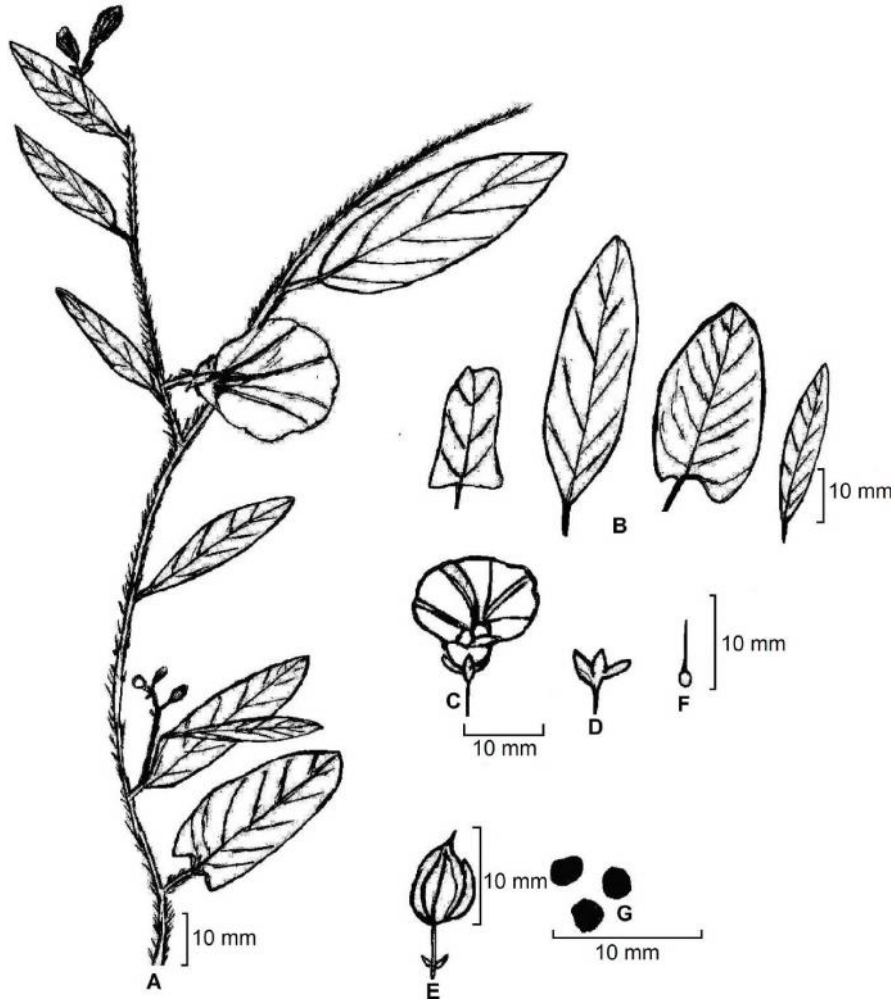
**Type:** Unspecified Locality, Linnaeus 218.56 (HT: LINN !)

**Distribution:** China, India, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand, Vietnam, North Australia, Papua New Guinea, now in Nepal.

**Habitat:** Dry open grasslands, cultivated rice fields, roadsides, thickets forest margins from 150 – 1500 m.

**Flowering & Fruiting:** August – November

**Exsiccate:** NEPAL, Makawanpur district, Handikhola (between Rapti river and Handikhola), 27°26'60" N and 84°53'50" E, 418 m, 8.viii.2010, N. Joshi, 01088514NJ.



**Figure 1.** *Merremia hirta* (Linnaeus) Merrill: A. Flowering branch; B. Various types of leaves; C. Flower; D. Calyx; E. Fruit; F. Gynoecium; G. Seeds. (Based on N. Joshi 01088514NJ)

**Table 1.** Distinguishing characteristics of *Merremia hirta* and *Merremia umbellata*.

Characters	<i>Merremia hirta</i>	<i>Merremia umbellata</i>
Stem	Hirsute	Glabrous
Seeds	Glabrous	Hirsute

**Comparison with allied species:** The morphological character of *M. hirta* is very similar to *M. umbellata*, but differs from it by having hirsute stem and glabrous seed. In *M. vitifolia*, the lamina are palmately 5 – 7 lobed, lobes coarsely dentate; outer 2 sepals 15 – 20 mm long in flower, but in *M. hirta* lamina is unlobed, variable in shapes from linear lanceolate to oblong. It differs from *M. hederacea* with outer sepals broadly obovate to spatulate, apex broadly notched, or distinctly mucronate, whereas in *M. hirta*, the 2 outer sepals are ovate, obtuse or acute, not notched. *M. emarginata*, the lamina are reniform or broadly ovate, emarginate, whereas in *M. hirta*, apex not deeply emarginate.

### Acknowledgements

The authors are grateful to Prof. Dr. Pramod Kumar Jha, Head and Prof. Dr. Krishna Kumar Shrestha of the Central Department of Botany, Kirtipur, Nepal, Director General, Department of Plant Resources, Thapathali, Kathmandu, Nepal, Chief of National Herbarium and Plant Laboratories, Godawari, Lalitpur, Nepal, for providing working facilities. They are thankful to staffs of District Forest Office, Makawanpur district and Mr. Madhav Gautam of Handikhola for cooperation during field visits. Nepal Academy of Science and Technology, Khumaltar, Lalitpur is highly acknowledged for financial support. The authors are also thankful to Ms. Sheetal Vaidya, Patan Multiple Campus, Lalitpur, Nepal for her encouragement and advice.

### LITERATURE CITED

- Anonymous 1976: *Catalogue of Nepalese Vascular Plants*. Department of Medicinal Plants, Bulletin Dept. Med. Pl. No. 10, Kathmandu.
- Anonymous 2001: *Flowering Plants of Nepal (Phanerogams)*. Department of Plant Resources, Bulletin Dept. of Plant Resources, No. 18, Kathmandu.
- Biju, S.D. & Mathew, P. 1994: *Merremia hirta* (L.) Merrill (Convolvulaceae) : a new record for Peninsular India. *J. Econ. Taxon. Bot.* 18 (1): 181-183.
- Hara, H.; Chater, A.O. & Williams, L.H.J. (eds.) 1982. *An Enumeration of the Flowering Plants of Nepal*, Volume I. British Museum of Natural History, London.
- International Plant Name Index. 2010: <http://www.ipni.org> (Accessed September 2010).
- Johnson, R.W. 2009: A conspectus of *Merremia* Dennst. ex Endl. (Convolvulaceae) in Australia with the addition of two species. *Austrobaileya* 8(1): 57.
- Linnaeus, C. 1753: *Species Plantarum* 1: 159. Laurentius Salvius.
- Merrill, E.D. 1912: Convolvulaceae in *Philippines Journal of Science. Section C, Botany* 7: 244 – 245.
- Mill, R.R. 1999: Convolvulaceae in *Flora of Bhutan*, (ed. A.J.C. Grierson & D.G. Long) .Volume 2, part 2: 854 – 855.
- Ooststroom, S. J. van 1939: The Convolvulaceae of Malaysia, II. *Blumea* 3(2): 307 – 311.
- Ooststroom, S. J. van 1953: *Flora Malesiana* Series 4: 442 – 443.
- Press, J.R.; Shrestha, K.K. & Sutton, D.A. 2000: *Annotated Checklist of the Flowering Plants of Nepal*, The Natural History Museum, London.
- Rajbhandari, K.R.; Bhattarai, K.R. & Baral, S.R. 2012: *Catalogue of Nepalese Flowering Plants-III Dicotyledons (Compositae to Salicaceae)*, Government of Nepal, Ministry of Forests and Soil Conservation, Department of Plant Resources, Thapathali, Kathmandu, Nepal.
- Yu Huang Cao Shu. 1995. *Flora of China*, Science Press & Missouri Botanical Gardens Press, Beijing & St. Louis.16: pp 291 – 299.
- <http://www.plantlist.org/browse/A/Convolvulaceae/Merremia>.
- [www.biodiversitylibrary.org/name/Merremia\\_hirta](http://www.biodiversitylibrary.org/name/Merremia_hirta)
- [www.tropicos.org/Name/8502865](http://www.tropicos.org/Name/8502865)
- [www.coldh.mnhn.fr/scientificName/Merremia/hirta](http://www.coldh.mnhn.fr/scientificName/Merremia/hirta)