

IPOMOEA LITTORALIS AND IPOMOEA CAPITELLATA VAR. MULTILOBATA : NEW RECORDS FOR UPPER GANGETIC PLAINS OF INDIA

JASWINDER KAUR* AND SATYA NARAIN

Department of Botany,
University of Allahabad, ALLAHABAD- 211002.

*Corresponding Author

E-mail: manjasvirdi@gmail.com

Received : 15.01.2018; **Accepted** : 12.02.2018**ABSTRACT**

The floristic exploration and critical examination of specimens collected of family Convolvulaceae from Upper Gangetic Plains of India, resulted in addition of 2 new records for the flora viz. *Ipomoea littoralis* and *Ipomoea capitellata* var. *multilobata*. Detailed description, phenology, ecology, distribution, locality, field number, type specimens examined, illustrations and other relevant notes are provided.

Figures : 02

References : 24

Table : 01

KEY WORDS : Convolvulaceae, Flora, *Ipomoea*, New record, Upper Gangetic Plains.**Introduction**

Ipomoea is one of the dominant genus-complex of family Convolvulaceae. It is represented by about 650 species, distributed mostly in the tropical and warm temperate regions of the world¹¹. In India, the genus is represented by about 60 species¹⁷. Subsequently *Ipomoea mombassana* Vatke⁴, *I. laxiflora*⁵, *I. parasitica* (Kunth) G. Don³, *I. ochracea* (Lindl.) G. Don²⁰, *I. tenuipes* Verdc²¹ and *I. muelleri* Benth¹⁹ have been added to Indian flora, bringing the total number to 66 species. In Flora of Upper Gangetic Plain and of the adjacent Siwalik and sub-Himalayan tracts, genus⁸ is represented by 23 species and in subsequent additions to Flora of Upper Gangetic Plains 14 more species of the genus were added^{5,7,10,14,16}. So far 33 species of the genus are reported from the Upper Gangetic Plains (Table-1).

The floristic exploration for family Convolvulaceae was done in Upper Gangetic Plains of India during 2014-2017. Authors collected 2 interesting plants *Ipomoea littoralis* Blume and *Ipomoea capitellata* Choisy var. *multilobata* Bhellum. On intensive investigation, consulting literature, different regional floras, herbarium studies as well as online herbaria and floras these plants were not reported so far from this region by the earlier workers^{8,10,12,13,14,16,23}. Hence, *Ipomoea littoralis* Blume and *Ipomoea capitellata* Choisy var. *multilobata* Bhellum are new additions to the flora of Upper Gangetic Plains.

The voucher specimens are housed at Duthie Herbarium, Department of Botany, University of Allahabad. The details including correct nomenclature, phenology, habitat, localities of collection, field numbers and specimens examined.

Taxonomic Description*Ipomoea littoralis* Blume, *Bijdr.*: 713 (1826). (Fig.1)*Ipomoea batatas* var. *littoralis* (Blume) Nishiyama, *Bot. Mag.* (Tokyo) 84: 385 (1971).*Ipomoea gracilis* auct., non R. Br. (1810)*Ipomoea carnea* G.Forst., *Fl. Ins. Austr.*: 15 (1786), nom. illeg.*Ipomoea forsteri* A. Gray ex H. Mann., *Proc. Amer. Acad. Arts* 7: 195 (1866).*Convolvulus denticulatus* Desr. in J. B. A. M. de Lamarck, *Encycl.* 3: 540 (1792). *Ipomoea denticulata* (Desr.) Choisy, *Mém. Soc. Phys. Genève* 6: 447 (1833 publ. 1834), nom. illeg.*Ipomoea denticulata* Choisy in *Fl. Brit. India*. 4: 208 (1882), nom. illeg.*Ipomoea obscura* Guill., *Ann. Sci. Nat., Bot., sér. 2*, 7: 244 (1837), nom. illeg.*Convolvulus maritimus* D. Dietr., *Syn. Pl.* 1: 680 (1839), nom. illeg.

ACKNOWLEDGEMENTS : Authors are thankful to UGC for providing financial support. We are also thankful to Professor & Head, Department of Botany, University of Allahabad, Allahabad, for constant encouragement and providing necessary facilities. Authors are also thankful to Dr. Vinay Ranjan (Scientist D) of CNH, Kolkata, for providing access to herbarium.

Convolvulus laevigatus Steud., *Nomencl. Bot.*, ed. 2, 1: 409 (1840).

Convolvulus thalassicus Steud., *Nomencl. Bot.*, ed. 2, 1: 412 (1840).

Ipomoea sepiaria Seem., *Bonplandia* (Hannover) 9: 258 (1861), nom. illeg.

Ipomoea forsteri var. *Hawaiiensis* A. Gray ex H. Mann, *Proc. Amer. Acad. Arts* 7: 195 (1866).

Ipomoea nicobarica Kurz, *J. Asiat. Soc. Bengal*, Pt. 2, *Nat. Hist.* 45(2): 141 (1876).

Ipomoea cymosa Baker, *Fl. Mauritius*: 208 (1877), nom. illeg.

Ipomoea forsteri var. *Pauciflora* Hillebr., *Fl. Hawaiian Isl.*: 316 (1888).

Ipomoea choisyana W. Wight, *Contr. U. S. Natl. Herb.* 9: 298 (1905), nom. illeg.

Perennial vines. Stems usually prostrate and often rooting at the nodes, thin and herbaceous, becoming woody toward the base, glabrous or with few scattered trichomes. Leaf blades coriaceous, variable, broadly ovate to oblong, or orbicular to reniform, variable in size, typically 1-10 cm, less often longer, basally cordate, margins entire, undulate, angular-toothed, 3-lobed, apically acute, obtuse, or retuse, mucronulate, both surfaces glabrous, petiole 2.5-4 cm. Inflorescences axillary. Flowers usually solitary, less commonly cymose, peduncles 2-12 cm, glabrous, pedicels 1-2.5 cm, glabrous; sepals glabrous, unequal, outer two oblong-elliptic to elliptic-ovate, coriaceous, 6-10 mm, acute to obtuse, inner three elliptic or more often suborbicular, 8-12 mm, thinner, with membranaceous margins, all mucronulate, mucro subterminal. Corolla infundibuliform, 3-4.5 cm, lavender to pinkish purple, tube darker. Stamens unequal, inserted 4 mm above the corolla base, filaments 6-10 mm, glabrous on the upper half, pubescent with glandular trichomes on the lower half; anthers elliptic, 3 mm. Ovary bicarpellary, superior, bilocular, axile placentation, glabrous, conic, style 1.2 cm, stigma capitate, bilobed. Fruits capsule, dehiscent, 1-4 seeded, globose or depressed-globose, 9-10 mm, brown. Seeds ovoid, 3.5-4 mm, black to brown, glabrous.

Fl. & Fr.: September - December.

Habitat: Sandy seashores, sandy road sides, coastal thickets, forest floors throughout the tropical Indian and Pacific Oceans. 0 - 100 m above the sea level.

Distribution: Between 30°N - 24°S latitude and 80° - 135°E longitude. Widespread around the Pacific and Indian oceans, having been reported for Mauritius, the Seychelles, Madagascar, southern Asia (Sri Lanka, India, Indo-China, Thailand), Taiwan, Malesia (Philippines, New Guinea, Malay Peninsula), the Pacific (Micronesia,

including the Marianas, the Carolines, the Marshalls, the Gilberts, Guam, Hawaii, the Austral Islands, Palau Island, the Ryukyu Islands, Samoa, the Society Islands, the Tuamotu Archipelago, Fiji, and New Caledonia), and Australia¹ (N Queensland on Cape York Peninsula). In India: Nicobar islands⁶. In Uttar Pradesh they were found in small patches of one to few individuals along wastelands and road sides in Fatehpur on sandy soil. The species seem to be rare and may be introduced accidentally in this region.

Locality: Road sides, Fatehpur; 25.8500° N, 80.8987° E (Uttar Pradesh), J. Kaur: 30053. 107 m above the sea level.

Specimens Examined: Type: Java, Blume: 1710. (holotype L) (KEW); Nicobar, Kamorta: 175. (CAL).

Ipomoea capitellata Choisy var. **multilobata** Bhellum in *J. Res. Pl. Sci.* 1: 060-062. 2012. (Fig. 2).

Annual vine. Stem straggling or twining with long spreading hairs. Leaves 3.8-10 cm usually a few to multilobed, lobes ovate, acute or acuminate, narrowed at the base, hirsute on both the surfaces; petiole 3.8-7.5 cm, very hairy. Flowers sessile, 3 or more in a head; peduncle 2.5-7.5 cm, hairy; outer bracts nearly 2.5 cm, inner ones 1 cm, all ovate-oblong, subobtusate, hairy; sepals 8-13 mm, densely hairy, ciliate with long stiff hairs; outer sepals broader than the inner ovate-lanceolate, the inner three linear-oblong, acute. Corolla ca 3 cm long tubular, campanulate, white or pale-pink, midpetaline bands pilose outside, upto 1.6 cm across, mouth slightly lobed. Stamens inserted; anthers upto 1 mm long; subequal, 5-6 mm. Ovary small, conical 1 mm, glabrous, disc small, slightly lobed; style upto 1 cm, glabrous; stigma bilobed, 1 mm, papillate. Fruit capsular, 6 mm across, globose, glabrous, papery, straw coloured, concealed in the calyx. Seeds 4, grey, 5mm, pubescent.

Fl. & Fr.: August- October.

Habitat: A common twiner along wasteland on hedges and shrubs. 0 - 330 m above the sea level.

Distribution: So far reported only from Jammu of Jammu and Kashmir State² and Tamil Nadu: Coimbatore District - Anamalai, Maruthamalai and Anaikatty hills of the Southern Western Ghats¹⁸ in India. Now the variety is found growing abundantly in its new habitat in Uttar Pradesh and it is likely that it may soon become naturalized.

Locality: Gonda; 27.1340° N, 81.9619° E. (Uttar Pradesh), J. Kaur: 30061.

Specimens examined: Jammu; Bhellum, 2012 (Online available).

TABLE-1: Species of *Ipomoea* reported from Upper Gangetic Plains of India

S. No.	Species Of <i>Ipomoea</i>	Published In Upper Gangetic Plains By Duthie And Others
1.	<i>Ipomoea alba</i> L.	<i>Calonyction bona-nox</i> Boj ⁸ .; <i>Ipomoea maxima</i> Don ex Sweet ¹⁶ .
2.	<i>Ipomoea aquatica</i> Forsk.	<i>Ipomoea reptans</i> Poir. ⁸ .
3.	<i>Ipomoea arachnosperma</i> Welw.	<i>Ipomoea pilosa</i> Sweet ⁸ .
4.	<i>Ipomoea barlerioides</i> Clarke	Duthie ⁸ .
5.	<i>Ipomoea batatas</i> Lamk.	Duthie ⁸ .
6.	<i>Ipomoea biflora</i> (L.) Pers.	<i>Ipomoea calycina</i> Clarke ⁸ .
7.	<i>Ipomoea cairica</i> (L.) Sweet	Raizada ¹⁴ .
8.	<i>Ipomoea clarkei</i> Hook.f.	Raizada ¹⁴ .
9.	<i>Ipomoea coptica</i> (L.) Roth ex Roem. & Schult.	<i>Ipomoea dissecta</i> Willd. ⁸ .
10.	<i>Ipomoea dichroa</i> Choisy	Khanna ¹⁰ .
11.	<i>Ipomoea eriocarpa</i> R. Br.	<i>Ipomoea sindica</i> Stapf. ⁸ ; <i>Ipomoea hispida</i> R. & S ⁸ .
12.	<i>Ipomoea carnea</i> ssp. <i>fistulosa</i> (Mart. ex Choisy) D. F. Austin	<i>Ipomoea fistulosa</i> Mart. Ex Choisy ⁹ .
13.	<i>Ipomoea hederifolia</i> L.	<i>Quamoclit phoenicea</i> Choisy ⁸ .
14.	<i>Ipomoea indica</i> (Burm.) Merr.	(<i>Ipomoea learii</i> Paxt ^{8,16} .
15.	<i>Ipomoea jalapa</i> (L.) Pursh	Duthie ⁸ .
16.	<i>Ipomoea laxiflora</i>	Chowdhery ⁵ .
17.	<i>Ipomoea lobata</i> (Cerv.) Thell.	Khanna ¹⁰ .
18.	<i>Ipomoea macrorhiza</i> Michx.	Khanna ¹⁰ .
19.	<i>Ipomoea marginata</i> (Desr.) Verdc.	<i>Ipomoea sepiaria</i> Koenig ⁸ .
20.	<i>Ipomoea muricata</i> (L.) Jacq.	<i>Calonyction muricatum</i> G. Don ⁸ . <i>Ipomoea turbinata</i> Lag ¹⁰ .
21.	<i>Ipomoea nil</i> (L.) Roth.	<i>Ipomoea hederacea</i> Jacq ⁸ .
22.	<i>Ipomoea obscura</i> Ker-Gawl.	Duthie ⁸ .
23.	<i>Ipomoea pes-caprae</i> (L.) R. Br.	Khanna ¹⁰ .
24.	<i>Ipomoea pes-tigridis</i> Linn.	Duthie ⁸ .
25.	<i>Ipomoea pulchella</i> Roth.	Duthie ⁸ .
26.	<i>Ipomoea purpurea</i> Roth.	Duthie ⁸ . ; Raizada ¹⁴ .
27.	<i>Ipomoea quamoclit</i> L.	<i>Quamoclit pennata</i> Boj ^{8, 16} .
28.	<i>Ipomoea rubriflora</i> O' Donell	www.flowersofindia.net/, 2010
29.	<i>Ipomoea rumicifolia</i> Choisy	Duthie ⁸ .
30.	<i>Ipomoea tricolor</i> Cav.	Duthie ⁸ .
31.	<i>Ipomoea triloba</i> L.	Deva and Naithani ⁷ .
32.	<i>Ipomoea tuberculata</i> Ker Gawl.	<i>Ipomoea dasysperma</i> Jacq ⁸ .
33.	<i>Ipomoea violacea</i> L.	Khanna ¹⁰ .

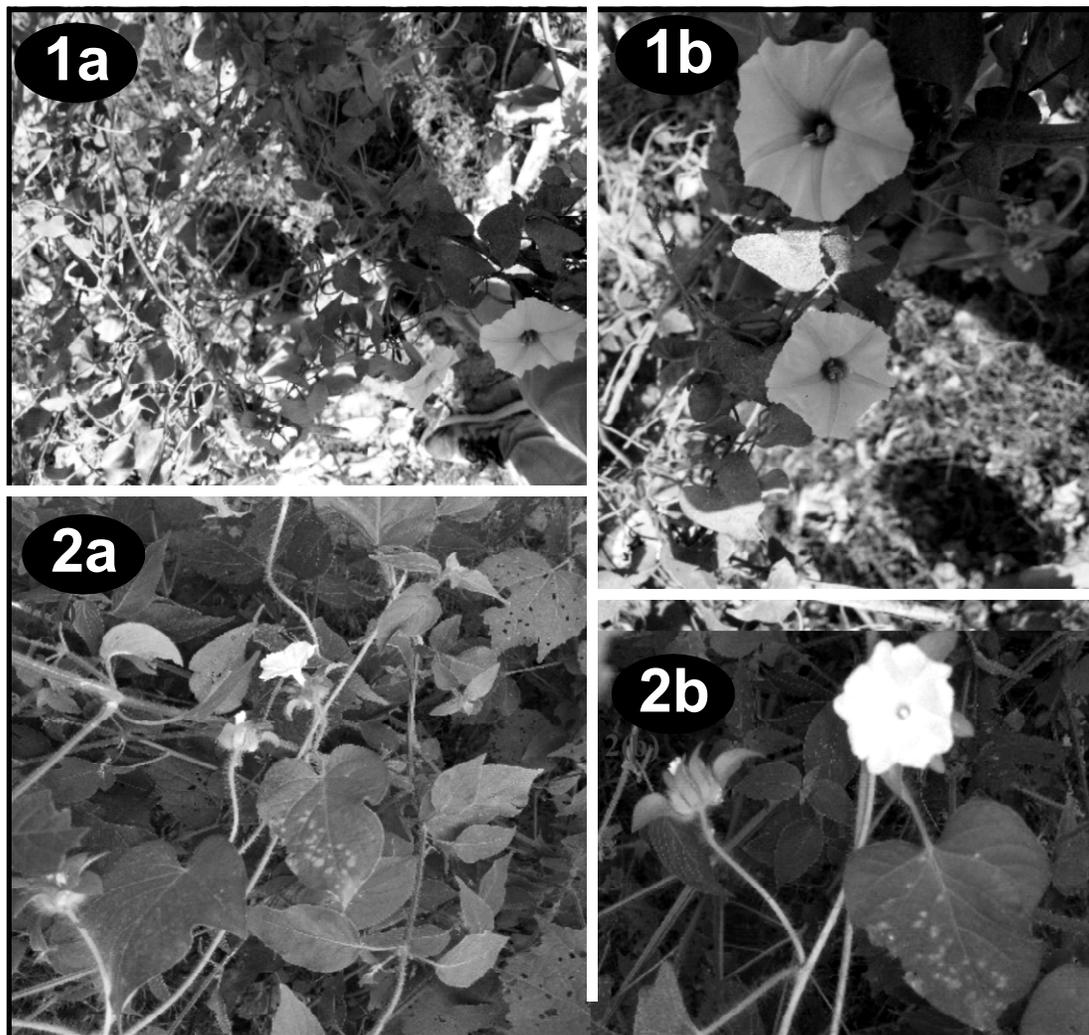


Fig. 1 : *Ipomoea littoralis* (a) In sandy habitat (b) Flowers

Fig. 2 : *Ipomoea capitellata* var. *multilobata* (a) Habitat (b) Flower

References

1. AUSTIN, A. F. (1991) *Ipomoea littoralis* (Convolvulaceae) - Taxonomy, Distribution, and Ethnobotany. *Economic Botany*. **45** (2) : 251-256.
2. BHELLUM, B. L. (2012). *Ipomoea capitellata* var. *multilobata* (Convolvulaceae) – A new variety from Jammu and Kashmir State, India. *Journal of Research in Plant Sciences*. **1**: 060- 062.
3. BIJU, S. D. (2002) *Ipomoea parasitica* (Kunth) G. Don (Convolvulaceae) : A new record for India. *Rheedea*. **12** (1): 77-79.
4. BIJU, S. D., MATTHEW, P. AND KUMAR, V.M. (1998) *Ipomoea mombassana* Vatke (Convolvulaceae) - A new record for India. *J. Econ. Tax. Bot.* **22** (2): 471-473.
5. CHOWDHERY, H. J. AND DEBTA, M. R. (2009) A new species of *Ipomoea* L. (Convolvulaceae) from India. *Indian Journal of Forestry*. **32** (1): 119-121.
6. CLARKE, C. D. (1882) Convolvulaceae. In Hooker, J.D. (Ed.), The flora of British India, 4. Rep. 2003. Bishan Singh Mahendra Pal Singh, Dehradun.
7. DEVA, S. AND NAITHANI, H. B. (1990) *Ipomoea triloba* Linn- A New Record for Uttar Pradesh from Dehra Dun. *The Indian Forester*. **116** (9):
8. DUTHIE, J. F. (1911) Flora of Upper Gangetic Plain and of the adjacent Siwalik and Sub Himalayan tracts. (completed by Parker R.N. and Turill W.B.), Vol. 2, Superintendent of Government Printing, Calcutta: Calcutta, India.

9. KHANNA, K. K. (2017) Angiospermic plants of Uttar Pradesh- A check-list. *Geophytology*, **47** (1): 69-110.
10. KHANNA, K. K., MUDGAL, V., UNİYAL, B. P. AND SHARMA, J. R. (1999) Dicotyledonous Plants of Uttar Pradesh : A Checklist. BSMPS, Dehra Dun.
11. MABBERLEY, D. J. (2008) *Mabberley's Plant Book: A portable dictionary of plants, their classification and uses*. Cambridge: Cambridge University Press, U.K.
12. MISRA, B. K. AND VERMA, B. K. (1992) Flora of Allahabad district U.P., India. Bishan Singh Mahendra Pal Singh, Dehra Dun.
13. NARAIN, S. (2009) Additions to the genus *Ipomoea* L. of Hamirpur and Mahoba district (U.P.), India. *Indian Forester*. **135** (9): 1255-1258.
14. RAIZADA, M. B. (1976) Supplement to the Flora of upper Gangetic Plains and of the adjacent Siwalik and Sub Himalayan tracts, Dehra Dun.
15. RHUI-CHENG, F. AND STAPLES, G. (1995) Flora of China. 16: 271-325. Science press, Beijing, China, and Missouri Botanical Garden, St. Louis, U.S.A
16. SAINI, D. C. AND SINGH, S. K. (1990) Addition to the flora of Upper gangetic plain with their ethnobotanical studies. *J. Econ. Taxon. Bot.* **14** : 83-104.
17. SANTAPAU, H. AND HENRY, A. N. (1973) A dictionary of the flowering plants in India. Publication and Information Directorate, CSIR New Delhi.
18. SARVALINGAM, A., RAJENDRAN, A., JAYANTHI, P. AND GURUSAMY, K. (2013) Distribution Of *Ipomoea capitellata* Choisy var. *multilobata* Bhellum (Convolvulaceae) In Southern Western Ghats, India. *Biolife*. **2** (1): 516-518.
19. SARVALINGAM, A., RAJENDRAN, A., SIVALINGAM, R. AND JAYANTHI, P. (2014) *Ipomoea muelleri* Benth. (Convolvulaceae) – A new record for Asian Continent. *Jorden Journal of Biological Sciences*. **7**(1) : 299-300.
20. SHIMPALE, V. B. (2012) *Ipomoea parasitica* (Kunth) G. Don – A new record for Flora of Maharashtra. *J. Econ. Taxon. Bot.* **36** (1): 52-53.
21. SHIMPALE, V. B., KARE, M. A., LONDHE, D. K. AND BHUKTAR, A. S. (2014) On occurrence of *Ipomoea tenuipes* (Convolvulaceae) in India. *Rheedea*. **24** (2): 117-119.
22. SHIMPALE, V. B., KSHIRSAGAR, P. R. AND PAWAR, N. V. (2012) *Ipomoea ochracea* (Convolvulaceae) - A new record for India. *Rheedea*. **22** (2) : 99-102. .
23. SHUKLA, G. AND VERMA, B. K. (1990) A taxonomic account of the genus *Ipomoea* L. in Bundelkhand region U.P., *Proc. Nat. Acad. Sci. India*. **60** B (IV): 397-404.
24. Website: m.flowersofindia.net