

ADDITIONS TO THE FLORA OF BANDA, UTTAR PRADESH, INDIA***JASWINDER KAUR, KAUSHAL SINGH¹ AND SATYA NARAIN**

Duhie Herbarium, Department of Botany,

University of Allahabad,

ALLAHABAD-211002, U.P.

¹Department of Silviculture and Agroforestry,

College of Forestry,

Banda University of Agriculture and Technology,

BANDA-210001 U.P.

*Corresponding Author

Email: manjasvirdi@gmail.com

Received : 01.05.2018; **Accepted** : 14.11.2018**ABSTRACT**

Three species of angiosperm belonging to two families have been recorded in Banda district, which are new additions to the flora of Banda viz. *Flueggea virosa* (Roxb. ex Willd.) Royle, *Prosopis cineraria* Druce and *Albizia amara*.

Figures : 03

References : 14

Table : 00

KEY WORDS : Banda, Euphorbiaceae, Flora, Mimosaceae, New addition.

Introduction

Banda is one of the seven districts of Bundelkhand region of Uttar Pradesh which is at the bank of river Ken. The floristic studies of Banda district were done² as a pioneer work. After that there were studies in detail for the Flora of Upper Gangetic Plain. A worker⁹ recorded *Alectra parasitica* a new species from Banda. Total 106 new species were reported as contribution to the flora of Banda^{6,7,11,12,13}. Ethnobotanical studies of Banda district were done^{4,10}. The present paper gives an enumerative account of additional three woody plant species that are new to the region.

Material and Method

The plants were identified as per taxonomic classification using state and regional flora^{1,5,9,14}. Specimens of the plants mentioned in this paper have been deposited in "BUAT Herbarium", College of Forestry, Banda University of Agriculture and Technology, Banda. The continued surveys and extensive review of literature revealed that the three plant species are new records for the flora of Banda. A brief taxonomic description of these plant species with correct nomenclature, phenology, localities and photographs (Fig. 1-3) are given in this

paper.

TAXONOMIC DESCRIPTION:**Family: Euphorbiaceae**

Flueggea virosa (Roxb. ex Willd.) Royle, Ill. Bot. Himal. Mts.: 328. 1836; Khanna. Geophytology. 47(1): 99. 2017. *Phyllanthus hamrur* Forssk., Fl. Aegypt.-Arab.: 159. 1775, nom. rej. *Phyllanthus virosus* Roxb. ex Willd., Sp. Pl. 4: 578. 1805. *Xylophylla obovata* Willd., Enum. Pl.: 329. 1809. *Bessera inermis* Spreng., Pl. Min. Cogn. Pug. 2: 90. 1815. *Drypetes bengalensis* Spreng., Syst. Veg. 3: 902. 1826, nom. superfl. *Flueggea microcarpa* Blume, Bijdr. Fl. Ned. Ind.: 580. 1826; Hook. f. Fl. Brit. Ind. 5: 328. 1887. *Phyllanthus obtusus* Schrank, Syll. Pl. Nov. 2: 65. 1826. *Phyllanthus angulatus* Schumacher & Thonn. in C. F. Schumacher, Beskr. Guin. Pl.: 415. 1827. *Phyllanthus dioicus* Schumacher & Thonn. in C. F. Schumacher, Beskr. Guin. Pl.: 416. 1827. *Flueggea angulata* (Schumacher & Thonn.) Schrank, Fl. Syll. Ratisb. 2: 65. 1828. *Phyllanthus retusus* Roxb., Fl. Ind. ed. 1832, 3: 657. 1832, nom. illeg. *Cicca pentandra* Blanco, Fl. Filip.: 701. 1837. *Phyllanthus lucidus* Steud., Nomencl. Bot., ed. 2, 2: 327. 1841, not validly publ. *Flueggea retusa* Voigt, Hort.

ACKNOWLEDGEMENTS : The authors are highly thankful to Directory Research and Honorable Vice-Chancellor of Banda University of Agriculture and Technology, Banda and HOD, Department of Botany, University of Allahabad for providing necessary facilities.

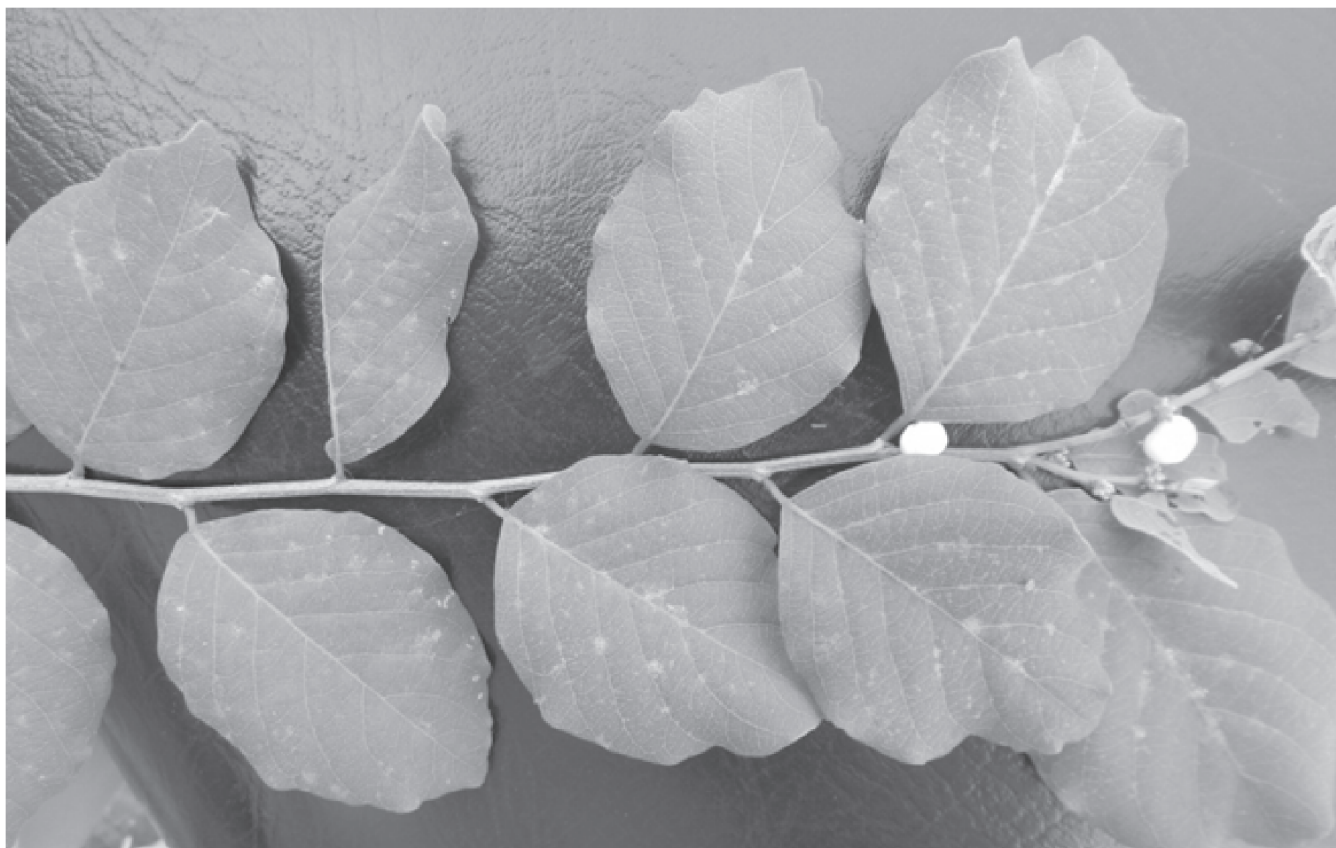


Fig. 1: Flowering branch of *Flueggea virosa*

Suburb. Calcutt.: 152. 1845. *Phyllanthus polygamus* Hochst. ex A. Rich., Tent. Fl. Abyss. 2: 256. 1850, pro syn. *Securinega abyssinica* A. Rich., Tent. Fl. Abyss. 2: 256. 1850. *Flueggea abyssinica* (A. Rich.) Baill., Étude Euphorb.: 593. 1858. *Flueggea ovalis* Baill., Étude Euphorb.: 593. 1858. *Flueggea phyllanthoides* Baill., Étude Euphorb.: 592. 1858. *Phyllanthus leucophyllus* Strachey & Winterb. ex Baill., Étude Euphorb.: 593. 1858. *Bradleya dioica* (Schumach. & Thonn.) Gaertn. ex Vahl, Recueil Observ. Bot. 1: 80. 1860. *Phyllanthus reichenbachianus* Sieber ex Baill., Adansonia 1: 80. 1860, pro syn. *Flueggea senensis* Klotzsch in W. C. H. Peters, Naturw. Reise Mossambique 6(1): 106. 1861. *Securinega virosa* (Roxb. ex Willd.) Baill., Adansonia 6: 334. 1866. *Securinega grisea* Müll. Arg. in A. P. de Candolle, Prodr. 15(2): 451. 1866. *Securinega microcarpa* (Blume) Müll. Arg. in A. P. de Candolle, Prodr. 15(2): 434. 1866. *Securinega obovata* (Willd.) Müll. Arg. in A. P. de Candolle, Prodr. 15(2): 449. 1866. *Securinega leucopyrus* Brandis, Forest Fl. N.W. India: 456. 1874. *Cicca obovata* (Willd.) Kurz, Forest Fl. Burma 2: 354. 1877. *Flueggea obovata* (Willd.) Wall. ex Fern.-Vill. in F. M. Blanco, Fl. Filip., ed. 3, 4(13A): 189. 1880, nom. illeg. *Acidoton virosus* (Roxb. ex Willd.) Kuntze, Revis. Gen. Pl. 2: 592. 1891. *Acidoton griseus* (Müll. Arg.) Kuntze, Revis. Gen. Pl. 2: 592. 1891. *Acidoton obovatus* (Willd.) Kuntze, Revis.

Gen. Pl. 2: 592. 1891. *Acidoton phyllanthoides* (Baill.) Kuntze, Revis. Gen. Pl. 2: 592. 1891. *Diasperus hamrur* (Forssk.) Kuntze, Revis. Gen. Pl. 2: 599. 1891. *Diasperus portoricensis* Kuntze, Revis. Gen. Pl. 2: 602. 1891. *Phyllanthus portoricensis* (Kuntze) Urb., Symb. Antill. 4: 338. 1905. *Flueggea obovata* var. *luxurians* A. Chev. ex Beille, Mém. Soc. Bot. France 8: 55. 1908. *Conami portoricensis* (Kuntze) Britton, Bot. Porto Rico 5: 475. 1924. Vern.: *Salpi*, *Salpa*. (Fig. 1.)

Large shrub, 1-8 m height with angular branches. Leaves 4-5 x 2.5-4 cm, alternate, ovate-elliptic, acute at base, apex emarginate, stipulate, 1-2 mm long stipules, ovate, lanceolate. Flower minute greenish brown, axillary clusters, Male flowers glomerules 20-40. Perianth 5 lobed ovate sub-obtuse. Female flowers 1-10, pedicellate. Fruits 4.5-5.5 mm diameter, depressed, subglobose, white fleshy; seeds plano-convex, faintly reticulate, 2-2.5 mm long, triangular, punctate, brown.

Locality: On edges of thickets of plants in front of DM compound and Kabristan in Banda.

Fl.: February-March, **Fr.:** August-September.

Family: Mimosaceae

Prosopis cineraria (L.) Druce in Rep. Bot. Exch. Club Soc. Brit. Isles 3: 422. 1913 (publ. 1914); Khanna. Geophytology. 47(1): 99. 2017. *Acacia cineraria* (L.) Willd.



Fig. 2: Leafy branches of *Prosopis cineraria*

in Sp. Pl. 4: 1057. 1806. *Adenantha aculeata* (J. Koenig ex Roxb.) W. Hunter in Asiat. Res. 6: 66. 1799. *Mimosa cineraria* L. Syst. Nat. ed. 10, 2: 1311. 1759. *Prosopis aculeata* J. Koenig ex Roxb. in Asiat. Res. 4: 405. 1795. *Prosopis spicata* Burm.f. in Fl. Indica: 102. 1768. *Prosopis spicigera* L. in Mant. Pl.: 68. 1767; Baker in Hook.f., Fl. Brit. Ind. 2: 288. 1878. Vern.: *Shami*, *Chhokar* (Fig. 2).

Medium size tree with glabrous branches, armed with scattered prickles, Leaves compound, bipinnate; rachis 3-5 cm long; pinnae mostly 2-pairs, opposite, 2.5-8 cm long; leaflet 8-12 pairs, sessile and mucronate at apex. Flowers yellow to creamy, short peduncle 8-12 cm long panicle spike. Calyx 0.5-1.5 mm, truncate, slightly 5-toothed. Corolla ca 3mm. Pods straight, torulose, 10-20 cm long. Seeds 10-18, light brown.

Locality: In Agriculture fields and in campus of Banda University of Agriculture and Technology, Mawai Bujurg, Banda.

Fl.: January-April, **Fr.:** March-June.

Albizia amara (Roxb.) Boivin in P.-S. Laurentie & al.,

Encycl. Dix-Neuvième Siècle 2: 34. 1837; Baker in hook.f. Fl. Brit. Ind. 2: 301. 1878. *Mimosa amara* Roxb. in Pl. Coromandel 2: 13. 1799. *Acacia amara* (Roxb.) Willd. in Sp. Pl. 4: 1074. 1806. *Mimosa glauca* J. Koenig ex Roxb. in Hort. Bengal.: 41. 1814. *Acacia nellyrenza* Graham in N. Wallich, Numer. List: no. 5240. 1831. *Acacia wightiana* Graham in N. Wallich, Numer. List: no. 5259. 1831. *Albizia wightiana* Graham in N. Wallich, Numer. List: no. 5259. 1831. *Mimosa nellyrenza* B. Heyne in N. Wallich, Numer. List: no. 5240. 1831. *Mimosa pulchella* Roxb. in Fl. Ind. ed. 1832, 2: 548. 1832. *Albizia wightii* Wight & Arn. in Prodr. Fl. Ind. Orient.: 274. 1834. *Acacia wightii* Graham ex Wight & Arn. in Prodr. Fl. Ind. Orient.: 274. 1834. *Acacia sericocephala* Fenzl in Flora 27: 312. 1844. *Inga sericocephala* A. Rich. in Tent. Fl. Abyss. 1: 236. 1847. *Albizia affinis* E. Fourn. in Ann. Sci. Nat., Bot., sér. 4, 14: 371. 1860. *Albizia gracilifolia* Harms in Notizbl. Bot. Gart. Berlin-Dahlem 8: 146. 1922. Vern.: *Seljhari* (Fig. 3).

Medium size tree with thin grey, rough, scaly bark,



Fig. 3: Flowering branch of *Albizia amara*

branchlets pubescent. Leaves bipinnate, alternate, stipulate. Rachis 5-10 cm long, pinnae 4-15 pairs, 3-8 cm long, leaflets 15-30 pairs. Flowers head 1-2 cm across. Creamy, fragrant. Peduncles several and axillary. Calyx ca 1.2-1.3 mm long, funnel shaped. Corolla ca 3-4 mm. Stamens many, 1.2-1.5 cm. Ovary stipitate, style filiform,

stigma minute. Pods, 12-24 X 2.2-3.5 cm, greyish brown, 6-12 seeded. Seeds compressed.

Locality: Along the Chitrakoot and Banda roadside and at Maharana Pratap crossing at Banda.

Fl.: February-April, **Fr.:** April-July.

References

1. Duthie JF. Flora of Upper Gangetic Plain and of the Shiwalik and Sub-Himalayan Tracts, Vol. I, II and III, Calcutta. 1903-1929.
2. Edgeworth MP. Catalogue of plants found in Banda district, *Jour. Asiat. Soc. Bengal.* 1852-1867; **21**: 24-48; 15-184.
3. Kanjilal PC. A forest flora of Pilibhit, Oudh, Gorakhpur and Bundelkhand, Allahabad. Govt. Printing Press Allahabad. 1933.
4. Mishra A. Study on some ethno-medicinal plants of Kalinjar hillock, Banda district (U.P.) India, *Int. Jour. Adv. Res. Eng. Appl. Sci.* 2015; **4** (7): 1-9.
5. Misra BK, Verma BK. Flora of Allahabad district, U.P., India. Bishan Singh Mahendra Pal Singh, Dehradun. 1992.
6. Narain S. Changing tree diversity of Bundelkhand region (U.P.) India. *Ind. Jour. For.* 2010; **33** (2): 235-243.

7. Narain S, Singh R. Flora of Bundelkhand region UP, Family Fabaceae, *Jour. Econ. Taxo. Bot.* 2008; **32** (1): 200-219.
8. Rau MA. Occurance of *Alectra parasitica* A. Rich. In India. A new variety from Banda district (U.P.). *Bull. Bot. Surv. India.* 1961; **8**: 25-27.
9. Roy GP, Shukla BK, Datt B. Flora of Madhya Pradesh (Chhattarpur and Damoh), Ashish Publishing House, New Delhi. 1992.
10. Saxena AP, Vyas KM. Ethnobotanical records on infectious diseases from tribals of Banda district (U.P.) *Jour. Econ. Taxo. Bot.* 1981; **2** : 191-194.
11. Sinha BK. Studies in Indian Flora (Flora of Banda). Unpublished Thesis of Department of Botany, University of Allahabad. 1987.
12. Sinha BK, Verma BK. Contribution to the flora of Banda district (U.P.) -II *Ind. Jour. For.* 1986; **9** (4) : 326-330.
13. Verma BK, Sinha BK. Contribution to the flora of Banda district (U.P.) *Jour. Econ. Taxo. Bot.* 1985; **7** (1) : 37-44.
14. Verma DM, Balakrishnana NP, Dixit RD. Flora of Madhya Pradesh Vol. I, Botanical Survey of India, Calcutta. 1993.