



SOME NOTEWORTHY PLANT RECORDS TO THE FLORA OF BULDHANA DISTRICT

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Present investigation deals with the report of 16 noteworthy plant species belonging to 12 families along with 1 additional family (Elatinaceae) reported for the first time to the flora of Buldhana district.

Key words: New addition, plant species, families and Buldhana district.

Buldhana district is the Western most district in the Vidarbha of the Maharashtra State which is situated between 19^o.51' and 21^o.17' N latitudes and 75^o.57' and 76^o.49' E longitudes. It is bounded in the Tapi and Godavari river basins. The northern half of the district is broadly called Payanghat and Southern half known as Balaghat. The district extends over an area of 9,745 Km of which 1,558 Sq. km is constituted by forest which comes to less than 16% of the total area of the district. The vegetation of this district is tropical dry deciduous. The climate of this district is dry and hot. In general an average rainfall of the district is 754 mm.

Botanically, the vegetation of Buldhana district was explored by Diwakar and Sharma (2000). They reported 567 species, 3 sub species and 11 varieties spread under 378 genera and 102 families, besides 3 species of Gymnosperm and Pteridophytes.

The present investigations provide information about morphology, phenology and occurrence of 16 additional plant species belonging to 11 families along with 1 additional family (Elatinaceae) from this district.

MATERIALS AND METHODS

An extensive plant exploration was conducted during July 2009- February 2011,

for the study of new plants from the Buldhana district. The study has resulted in collection of 16 new plant species and 1 new family addition to the flora of Buldhana district.

Each of plant species was assigned a field note books and documented. The plant specimens were collected and identified by using standard floras (Almeida 1996-2009, Cooke, 1967, Kamble and Pradhan, 1988; Naik, 1998, Sharma *et al.* 1996, Singh & Karthikeyan 2000 and Singh *et al.* 2001) and deposited in Herbarium of Department of Botany, Shri Shivaji College Akola.

OBSERVATION AND RESULTS

ELATINACEAE

1. *Bergia ammannioides* Roxb. ex Roth. Nov. Pl. Sp. 219.1821; Thiselton Dyer in Hook. f. Fl. Brit. India 1:251. 1874; Naik, Fl. Osmanabad 46.1979. Singh and Karthikeyan, Fl. Maharashtra State 1:168. 2000.

Herb, glandular pubescent, 8-30 cm tall. Leaves 1-4 x 0.2-1.5 cm, elliptic-lanceolate, acute, dentate-serrate, petioles 2-5 mm long, stipule subulate. Flowers minute in dense axillary clusters; Sepals 3-5, ovate-oblong, green. Petals red, as many as and slightly shorter than sepals, Stamens as many as sepals. Capsule ovoid, dark red, 5-valved,

Table 1: Comparative analysis of earlier work & present work to flora of Buldhana district.

	Dicotyledones		Monocotyledons		Total
	Earlier work	Additional plants	Earlier work	Additional plants	
Families	89	01	13	00	103
Genera	311	08	67	03	389
Species	460	13	107	03	583

1.5-2 mm long. Seeds many, brown, minute. Common, found in muddy places.

Fls. & Frts.: October - February

Specimen examined: Kakpure, 1184.

Distribution: Khaparkheda dam near Sultanpur

FABACEAE

2. *Taverniera cuneifolia* (Roth) Arn. Nov. Act. Nat. Cur. 18 (1): 332. 1836; Ali in *Biologia* 12:75. 1966; Sanj. Legumes of India 254. 1991. *Hedysarum cuneifolium* Roth, Nov. Pl. Sp. 358. 1825. *Taverniera nummularifolia* auct. Non Dc. 1825; Baker in Hook. f. Fl. Brit. India 2:140. 1876. Cooke, Fl. Pres. Bombay 1: 353. 1958 (Repr.). Singh and Karthikeyan, Fl. Maharashtra State 1:748. 2000. Jetmadh

Undershrubs, 30-60 cm, high. Leaves 1-foliolate; leaflets 0.3- 1.4 x 0.2-0.9 cm, obovate or orbicular, pubescent. Flowers red, 2-6 in axillary, lax racemes. Pods 1-2 jointed, compressed. Seeds yellowish-brown, subreniform.

Frequent, along roadsides.

Fls. & Frts.: August January

Specimen examined: Kakpure, 1210.

Distribution: Nagzari.

ASTERACEAE

3. *Blumea fistulosa* (Roxb.) Kurtz I J. Asiat. Soc. Bengal 46(2): 187, 1877; Randeria, *Blumea* 10:256, 1960; Naik, Fl. Marathwada

Observation table 1: Comparative analysis of earlier work & present work to flora of Buldhana district.

	Families			Genera			Species		
	Earlier work	Additional plants	Total	Earlier work	Additional plants	Total	Earlier work	Additional plants	Total
Polypetalae	46	01	47	136	04	140	228	07	07

459, 1998; Bole & Almeida, J. Bomb. nat. Hist. Soc. 79: 597, 1983; Ugemuge, Fl. Nagpur Dist. 204, 1986. Bhambhurda.

Erect herb, 0.3-1.2 m high, ashy pubescent especially in the upper part. Lower leaves petioled. Obovate, often lyrate-pinnatifid, 10-12 cm long, coarsely serrate, all more or less hairy. Heads 6 mm in diam., flowers yellow. Corolla lobes pubescent. Involucre bracts ashy-pubescent, the outer very small, the inner large, purple. Achenes ribbed, hairy.

Infrequent, along the stream bank.

Fls. & Frts.: December February

Specimen examined: Kakpure, 1191.

Distribution: Sindhkhed Raja.

CONVOLVULACEAE

4. *Argyria cymosa* (Roxb.) Sweet, Hort. Brit. Ed. 1:289.1827; Clarke in Hook. f. Fl. Brit. India 4:190.1883; Naik, Fl. Osmanabad 216.1979. *Lettsomia cymosa* Roxb. Fl. Ind.1:492. 1820. Singh, Lakshminarasimhan, Karthikeyan and Prasanna, Fl. Maharashtra State 2:441. 2001.

Large, woody twinners; pubescent, 8-12 m long. Leaves 5-12.5 x 5.5-13 cm, broadly ovate, cordate at the base, entire, acuminate, pubescent on both sides. Flowers in branched, capitates cymes; bracts persistent. Calyx 5, outer sepals broadly obovate, sub acute, inner sepals, oblong lanceolate, acute. Corolla pale pink, 5-6 cm long, tubular funnel shaped. Stamens included. Seeds often 2 or 4, black.

Common, on the hedges of field.

Fls. & Frts.: October March

Specimen examined: Kakpure, 1196.

Distribution: Asola (Jahagir) Phata.

EHRETIACEAE

5. *Ehretia pubescens* Benth. in Royle, Ill. Bot. Himal. 306.1835; Gamble, Fl. Pres. Madras 626 (BSI reprint 1957). *E. laevis* Roxb. var. *pubescens* (Benth.) Clarke in Hook. f. Fl. Brit. India 4:142.1883. Datrang

Small trees, 4-10 m tall; young parts densely pubescent. Leaves, obovate-elliptic, or obovate, 5-12 x 3-6 cm, pubescent on both the surfaces at young, glabrescent above with the age. Flowers in axillary and terminal, corymbose, scorpioid cyme, bracts absent. Calyx 1.5-2 mm long, acute, Corolla white, 4-6 mm across, obtuse. Drupes globose, 0.3-0.4 cm across, orange red when mature.

Rare, found along the roadsides.

Fls. & Frts.: January June

Specimen examined: Kakpure, 1187.

Distribution: Sultanpur.

SCROPHULARIACEAE

6. *Striga angustifolia* (D. Don) Saldanha in Bull. Bot. Surv. India 5:70. 1963; Sant. in Rec. Bot. Surv. India 16(1): 184. 1967 (3rd Rev. ed.). *Buchnera angustifolia* D. Don, Prodr. Fl. Nepal. 91. 1825. *Striga euphrasioides* Benth. in Hook. Comp. Bot. Mag. 1:364. 1836; Hook. f. Fl. Brit. India 4:299. 1884; Cooke, Fl. Pres. Bombay 2: 376. 1958 (Repr.). Singh, Lakshminarasimhan, Karthikeyan and Prasanna, Fl. Maharashtra State 2:549. 2001.

Herbs, annual, 15-20 cm high, branched, scabrous. Inflorescence of long, lax, erect spike. Flower sessile or shortly pedicelled, corolla exceeding calyx. Capsules 0.4 x 0.2 cm, oblong, ellipsoid. Seeds obovoid, black.

Common, parasite on grasses.

Fls. & Frts.: August January.

Specimen examined: Kakpure, 1079.

Distribution: Ghatbori.

7. *Striga asiatica* (L.) O. Ktze. Rev. Gen. Pl. 1: 466. 1861; Sant. in Rec. Bot. Surv. India in 16(1): 183. 1967 (3rd Rev. ed.) *Buchnera asiatica* L. Sp. Pl. 630. 1753. *Striga lutea* Lour. Fl. Cochinch. 22. 1790; Hook. f. Fl. Brit. India 4:299. 1994; Cooke, Fl. Pres. Bombay 2:375. 1958. Singh, Lakshminarasimhan, Karthikeyan and Prasanna, Fl. Maharashtra State 2:550. 2001. Takala

Herbs, 10-15 cm high, erect, slender, parasitic; stem ribbed, hispid hairy. Leaves sessile, 0.5-2.0 x 0.1 cm, linear. Flowers axillary, solitary or in spikes. Capsules c 0.4 x 0.2 cm, oblong, loculicidal. Seeds dark brown. Frequent in grassland found as a parasite on grasses and Jowar.

Fls. & Frts.: July January.

Specimen examined: Kakpure, 1122.

Distribution: Jamod.

8. *Sutera dissecta* (Del.) Walp. Repert. 3:271. 1844; Bruce in Kew Bull. 1940:63.194.; Naik, Fl. Osmanabad 236.1979. *Capraria dissecta* Del. Fl. Egypte 95, t. 32. F. 2.1812. *Sutera glandulosa* Roth, Nov. Pl. Sp. 291.1821; Hook. f. Fl. Brit. India 4:258.1884. Singh, Lakshminarasimhan, Karthikeyan and Prasanna, Fl. Maharashtra State 2:552. 2001. Bhul

Herbs, glandular-pubescent, 10-30 cm tall; stem branched. Leaves opposite or upper alternate, ovate-pinnatifid, 1-2.5 x 0.5-0.8 cm, acute. Flowers axillary, solitary or terminal upper racemose; calyx 2.5-3 mm long, sepals linear oblong, Corolla white, 2-lipped. Stamens 4, filaments filiform. Capsule 0.4-0.5 cm long, ovoid, 2-valved. Seed minute, rugose. Frequently found in wet lands, along river bed.

Fls. & Frts.: December February

Specimen examined: Kakpure, 1185.

Distribution: Khaparkheda dam near Sultanpur.

ACANTHACEAE

9. *Carvia callosa* (Wall.) Bremek. in Verh. Nederal. Acad. Wet 2, 40: 187. 1944; Sant. in Univ. Bombay Bot. Mem. 2:46. 1952. *Ruellia callosa* Wall. Cat. 2359. 1830. *Strobilanthes callosus* Nees in Wall. Pl. Asiat. Rar. 3: 85. 1832; C.B.Cl. in Hook. f. Fl. Brit. India 4: 451. 1884; Cooke, Fl. Pres. Bombay 2:444. 1958 (Repr.). Singh, Lakshminarasimhan, Karthikeyan and Prasanna, Fl. Maharashtra State 2:609. 2001. Karvi

Shrubs, 2-4 m tall; stem rigid. Leaves

10-25 x 3.2-7.5 cm, one of each pair often smaller than opposite one, elliptic, lanceolate, more or less hairy on nerves beneath, apex acute or acuminate, base tapering into wing like petiole, margins crenate. Flowers bluish-purple in axillary, pedunculate, sub-tetragonal spikes. Capsule 2 x 0.6 cm, obovoid. Seeds 2.

Rare, on hill slopes

Fls. & Frts.: September June

Specimen examined: Kakpure, 1200.

Distribution: Ambabarwa forest.

LAMIACEAE

10. *Nepeta hindostana* (Heyne ex Roth) Haines, Bot. Bihar & Orissa 744.1922. [2:781. 1961 (Repr.)]; Mukerjee in Rec. Bot. Surv. India 14(1):133. 1940. *Glechoma hindostana* Roth, Nov. Pl. Sp. 259. 1821. *Nepeta ruderalis* Buch.-Ham. ex Benth. in Wall. Pl. As. Rar. 1:64. 1831; Singh, Lakshminarasimhan, Karthikeyan and Prasanna, Fl. Maharashtra State 2:739. 2001.

Herbs, Erect or suberect 30-50 cm tall. Leaves 4.5x1-3.5 cm, broadly ovate or suborbicular, pubescent. Flowers bluish purple in axillary cymes, culminating into terminal interrupted racemes. Nutlets oblong-ellipsoid, brown, smooth with white spot, mucilaginous when wetted.

Occasional, found on hill slope.

Fls. & Frts.: October - December

Specimen examined: Kakpure, 1144.

Distribution: Ambabarwa forest.

11. *Plectranthus mollis* (Aiton) Sreng., Syst. 2:690. 1825. *Ocimum molle* Aiton, Hort. Kew 2:322. 1789. *Plectranthus incanus* Link, Enum. Hort. Berol 2:120. 1822; Hook. f. Fl. Brit. India 4:621.1885; Cooke, Fl. Pres. Bombay 2:529. 1958 (Repr. ed.); Mukerjee in Rec. Bot. Surv. India 14(1):47. 1940. Singh, Lakshminarasimhan, Karthikeyan and Prasanna, Fl. Maharashtra State 2:748. 2001. Lalaghada

Erect herbs, 30-60 cm tall. Leaves 5-10

x 4-9 cm, acute, crenate. Sparsely pubescent. Flowers light blue or lilac, in few flowered cyme arranged in axillary and terminal racemes. Nutlets subglobose or broadly oblong, pale brown or dotted with purple.

Frequent, found in moist places.

Fls. & Frts.: August January

Specimen examined: Kakpure, 1162.

Distribution: Lonar lake.

EUPHORBIACEAE

12. *Antidesma acidum* Retz. Obs. Bot. 5:30. 1788; Airy Shaw in Kew Bull. 26(2): 352. 1972; T. Chakrab. & Gang. In J. Econ. Tax. Bot. 24:8, f. 1.2000. *Antidesma diandrum* (Roxb.) Roth, Nov. Pl. Sp. 369. 1821; Hook. f. Fl. Brit. India 5:361. 1887 p.p. Cooke, Fl. Pres. Bombay 3:90. 1958 (Repr.). Ghondurili

Shrubs, upto 3.5 m tall, dioecious; glabrous. Leaves 3-13 x 2-5 cm, obovate, elliptic and acute. Flowers greenish yellow in racemes. Male flowers pedicellate with cup shaped calyx and female flowers with calyx deeply lobed. Drupes 0.4-0.5 cm long, purple red.

Rare, on hill slope.

Fls. & Frts.: June August

Specimen examined: Bokhad, 1138.

Distribution: Ambabarwa forest.

13. *Euphorbia dracunculoides* Lam. Encycl 2: 428.1786; Hook f. Fl. Brit. India 5:262. 1887; Cooke, Fl. Pres. Bombay 3: 59. 1958 (Rep.). Singh, Lakshminarasimhan, Karthikeyan and Prasanna, Fl. Maharashtra State 2:878. 2001. Pisola

Herbs, 30-45 cm tall; stems dichotomously branched. Leaves opposite sessile, 3-7 x 0.3-0.6 cm, linear or linear-lanceolate, subacute; floral leaves broader at the base and shorter. Involucres broadly campanulate, subsessile, solitary, 2 mm across at mouth. Capsule 3-4 mm across, pale-yellow. Occasional, found in muddy places.

Fls. & Frts.: June January

Specimen examined: Kakpure, 1206.

Distribution: Khaparkheda dam near Sultanpur.

ZINZIBERACEAE

14. *Costus speciosus* (Koen.) J. E. Sm. In Trans. Linn. Soc. 1:249. 1800; Baker in Hook. f. Fl. Brit. India 6:249. 1892; Cooke, Fl. Pres. Bombay 3: 243.1958 (Repr. ed.); Holtt. in Guard. Bull. Singapore 13:242, f. 31 & 32. 1950; *Costus speciosus* var. *nepalensis* (Roscoe.) Baker in Hook. f. *op.cit.* 250. Sharma, Karthikeyan and Singh, Fl. Maharashtra State, Monocotyledones:70. 1996. Pev

Herbs, 2-3 m tall; rootstock tuberous; stem more or less woody at base. Leaves 15-30 x 3.0-7.5 cm, subsessile, oblanceolate-oblonge, acute or acuminate, often cuspidate, glabrous above, silky pubescent beneath, base rounded. Inflorescence of dense spikes, 5.0-12.5 x 3.7-7.5 cm. Flowers white. Capsules globose 3-gonous, red. Seeds black, aril white.

Rare, on hill slope.

Fls. & Frts.: August February

Specimen examined: Rothe, 1143.

Distribution: Ambabarwa forest.

POACEAE

15. *Chrysopogon fulvus* (Spreng.) Chiov. Fl. Somal. 1: 327. 1929; Bor, Grass. Burma, Ceylon, India & Pakistan 116.1960. *Andropogon monticola* R.&S. Syst. Veg. 2. Mant. 665. 1827; Hook. f. Fl. Brit. India 7: 192. 1896; Cooke, Fl. Pres. Bombay 3:305. 1958 (Repr. ed.). *Chrysopogon montanus* Trim. ex. Spreng. Neve Entdeck. 2:93.1821; Blatt. & McC. Bombay Grass. 70. T. 42. 1935. Sharma, Karthikeyan and Singh, Fl. Maharashtra State, Monocotyledones:430. 1996. Vagnaki/Gogar

Tall perennial herb upto 50 cm high. Leaves 3-6 x 0.3 cm, narrowly linear with scaberulous margins. Inflorescence in dense panicles, 5-12 cm long, terminal; spikelets awned racemes reduced to a single sessile

female and 2 pedicellate spikelets; pedicels ciliate. Grains yellow.

Common, on hill slopes.

Fls. & Frts.: September December

Specimen examined: Kakpure, 1179.

Distribution: Lonar lake.

16. *Saccharum spontaneum* L. Mant. Alt. 183.1771; Hook. f. Fl. Brit. India 7:118. 1896; Blatt. & McC. Bombay Grass. 45. T. 31. 1935; Cooke, Fl. Pres. Bombay 3: 465. 1958 (Repr. ed.) Bor, Grass. Burma, Ceylon, India & Pakistan 214. 1960. Sharma, Karthikeyan and Singh, Fl. Maharashtra State,

Monocotyledones:583. 1996. Bagberi/Kamis

Herbs, perennial, rhizomatous, erect, 2.5 m tall. Leaves 30-60 x 0.3-0.5 cm, narrowly linear, rigid, coriaceous. Panicles 20-30 cm long, ovate-lanceolate; spikelets with silvery silky hairs, awnless, in pairs. Glumes 4; lower lanceolate-subulate, acuminate, upper invol.-glume equal to the lower, lanceolate, obscurely keeled, 1 nerved, palea minute, ciliate.

Occasional, along stream bank.

Fls. & Frts.: August November

Specimen examined: Kakpure, 1177.

Distribution: Olandeshwar near Hiwara Ashram.

DISCUSSION

The present study reveals that, there is addition of 1 family of Dicotyledones, 11 genera; out of which 8 genera from Dicotyledones while, 3 genera from monocotyledones and 16 species; out of which 13 species from Dicotyledones while, 3 species from monocotyledones (as shown in observation Table 1 & 2) to the flora of Buldhana district.

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