

Addition of some non-indigenous elements to the flora of Marathwada regions, Maharashtra, India.

¹Kare M. A., ²D. A. Mule, ²V. A. Paithane and ²A. S. Bhuktar

¹Department of Botany, Pratishthan College, Paithan, Dist.-Aurangabad, (M.S.) India

²Department of Botany, Vivekanand College, Aurangabad (M.S.) India.

Abstract

During our field survey, many taxa were collected from the Marathwada region. Specimens were brought to laboratory and processed for herbarium specimens with standard procedures. Majority of the specimens satisfactory identified by using pertinent literature. After critical investigations, authors found that six taxa are not earlier reported from the region. So present paper deals new records of six species with its correct and updated citation, short description and note on its phenology is depicted for each taxon followed by a note on ecology and images of all for easy identification.

Keywords: Non-Indigenous, Addition, Marathwada.

INTRODUCTION

Marathwada region comprising seven districts (7005'–7805'N & 1705'–2005'E) forms a part of the vast Deccan Plateau of Maharashtra, India. The plant wealth of the Marathwada region is known through publications of several researchers (Naik 1966, 1967, 1969, 1970, 1979, 1998; Lakshminarasimhan 1996; Almeida 1998, 2001, 2003, 2009; Singh & Karthikeyan 2000, 2001). Cooke (1958 a, b, c reprint edition) in his 'Flora of Bombay Presidency' had not included Marathwada region, as it was then under Hyderabad State.

Publication of 'flora of Marathwada' by Naik (1998) created interest in researchers of the region as well as outside the region. Number of workers such as Sonje *et. al.* (2007), Kare *et.al.* (2008), Rathor (2006, 2008), Rathor and Chavan (2002), Rathor *et. al.* (2007, 2009), Survase and Sardesai (2008), Wadood khan and Solanke (2008), Bhuktar and Sardesai (2009), Chavan *et.al.* (2009), Shinde and Waghmare (2009) and Wadood khan *et. al.* (2009) have added 74 taxa of flowering plants to the region updated flora of the region reports 1719 species and 73 intraspecific categories belonging to 779 genera and 159 Families.

As a Continuation of such explorations during our field survey, many taxa were collected from the region. Specimens were brought to laboratory and processed for herbarium specimens with standard procedures. Majority of the specimens satisfactory identified by using pertinent literature. After critical investigations, authors found that six taxa are not earlier reported from the region. Correct and updated citation short description and note on its phenology is depicted for each taxon followed by a note on ecology. The voucher specimens are deposited in Department of Botany, Pratishthan Mahavidhyalaya, Paithan, Dist - Aurangabad (M.S.) India.

Enumeration

Family – Fabaceae

Glycyrrhiza glabra L. Sp. Pl. 2: 742. 1753; *Glycyrrhsza violacea* Boiss, Diagn. Pl. Or. Nov. 3(2): 23. 1854. *Glycyrrhiza glabra* var. *violacea* (Boiss) Boiss., Fl. Or.2: 202.1872.Type: Franconia, Gallia, Hispania, Italica (LINN- Image)

Herbs, perennial. Stem 50–150 cm tall, woody at base, Leaves 5–14 cm, 11–17 – foliolate; leaflets ovate – oblong, oblong – lanceolate, or elliptic, 1.7–4 × 0.8–2 cm, abaxially densely yellow scaly glandular punctate and pubescent on veins, adaxially glabrescent or pilose, base rounded, apex rounded or retuse and with mucro. Racemes much and densely flowered; rachis densely brown scaly glandular punctate, white villous and tomentose; bracts lanceolate, ca. 2 mm, membranous. Calyx campanulate, 5–7 mm, sparsely yellow glandular punctate and pubescent, 5 – toothed; upper 2 teeth mostly joined. Corolla purple or light purple, 9–12 mm; standard ovate or oblong, 1–1.1 cm, base clawed, apex retuse; wings 8–9 mm; keel straight, 7–8 mm. Ovary glabrous. Legume oblong, flat, 17–35 × 4.5–7 mm, rarely constricted between seeds, glabrous or sparsely hairy, Seeds 2–8, dark green, ca. 2 mm in diam., smooth.

Fls and Frts: May–June.

Locality: Botanical Garden, Pritishthan College, Paithan, Aurangabad.

Note: It is found along Margins of farms, roadsides, saline areas of Paithan.

Indigofera oblongifolia Forssk. Fl Aed. - Arab. 137. 1775; Sanj. Legumes of India 193.1991 & in Hajra *et.al.* Fasc. Fl. India 21: 108. 1995. *I. paucifolia* Delile, Fl.'d' Egypt 103, t. 37, f. 37.1813; Baker in Hook. f. Fl. Brit. India 2: 97. 1876; Cooke, Fl.Pres Bombay 1: 334. 1958 (Repr.); Kothari in Singh *et. al.* Fl. Maharashtra St. Dicot.1: 709.2000.

Shrub, up to 100 cm tall, Much branched, argenteo – canescent. Leaflets 3-5, 1.2-2.5x0.6-1.2 cm, elliptic – oblong or oblanceolate, white pubescent, apex obtuse, base acute. Flowers red, 20-50 in spicate racemes. Pod torulose, slightly curved. Seeds tetragonous, truncate at one ends.

Received: Oct 09, 2012; Revised: Nov 15, 2012; Accepted: Dec 26, 2012.

*Corresponding Author

Mangesh R. Jadhav

Department of Zoology, JeevanVikasMahavidyalaya, Shivoor, Tq.VaijapurDist Aurangabad-431116 (M.S.), India

Email: drmakare@gmail.com

Fls. & Frts.: September.

Locality: Sant Eknath Tomb, Paithan

Distrib.: Rare.

Family – Myrtaceae

***Syzygium aromaticum* (L) Merr. & Perry** in Mem Amer. Acad. Arts. 18: 196.1939; Bennet, Name Changes Flower. Pl. India & Adj.Reg. 549.1987. *Caryophyllus aromaticus* L.Sp. Pl. 515.1753; Kulkarni in Singh et.al. Fl. Maharashtra St. Dicot.2: 21. 2001.

Tree, 10 m tall. Leaves 6-12 x 3-5 cm, ovate- oblong, tapering at base, acute at apex, Leaves glabrous, with numerous oil glands on lower surface. Flowers pale purple, 0.5-06 mm across, small in terminal cymose clusters, peduncle bears 3-4 stalked flowers at the end. Sepals minute triangular projections. Fruit olive-shaped, 1-seeded, popularly referred to as 'mother of clove'.

Fls & Frts: Feb – Apr.

Locality: Botanical Garden, Pratishthan College, Paithan, Aurangabad.

Note: Bud when dried in sun, furnish clove of commerce.

Family- Bignoniaceae

***Fernandoa adenophylla* (Wall. ex G.Don) Steenis** *Blumea* 23(1): 135 (1976). *Haplanophragma adenophylla* (Wall.) P. Dop. In Bull. Soc. Bot. France 72:890.1925.; Prasanna in Singh et. al. Fl. Maharashtra St. Dicot.2: 581.2001. *Bignonia adenophylla* Wall Cat. 6502, 1832 nom. Nud.; P. Dop. l.c. 72:889.1925. *Heterophragma adenophylla* (DC) Seem. Ex. Bent. & Hook f.Gen. Pl. 2:1047.1876; C.B.Cl. in Hook f. Fl.Brit. India 4: 381.1884'; Cooke, Fl.Pres. Bombay 2: 410.1958 (Repr.)

A deciduous tree, 10-15 m tall. Leaves opposite, 20-30 cm long; pinnae rusty tomentose; leaflets 5-7, lateral, elliptic- oblong, 6-18 x 6-15 cm, entire, acute; rusty tomentose – brown (especially on the undersurface). Calyx 3-5 lobed, 20-25 mm long, rusty tomentose. Corolla tube 35 mm long, tomentose on the outside, lobes subequal, obtuse. Style 3.5 cm long. Stigma elliptic, 5 mm long. Capsule not seen.

Fls & Frts: September-April

Locality: Botanical Garden, Pratishthan College, Paithan, Aurangabad.

Note: Native of Burma cultivated as ornamental in Garden.

Family - Costaceae

***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 Gard. Bull. Singapore 13:242, f. 31 & 32.1950; Burt & R.M. Smith in Notes Roy. Bot.3:75.1783. *Costus speciosus* var. *nipalensis* (Rosc.) Baker in Hook f.op.cit.250.; Lakshmi in Sharma et. al. Fl. Maharashtra St. Monocot. 70.1996 .

Perennial herb, root stalk tuberous, Leaves 15 - 25x 2.5 - 6 cm: subsessile, oblong or oblanceolate, often cuspidate, acuminate, glabrous above & silky pubescent beneath, base rounded. Flowers: in, dense spikes; lip sub orbicular; corolla white. Capsules: globosely 3 – gonous, red. Seeds: black, aril white. Frequent on hill slopes.

Fls. & Frts. : Aug. – Feb.

Localities: Botanical Garden, Pratishthan College, Paithan, Aurangabad.

Family – Arecaceae (Palmae)

***Areca catechu* L.** Sp.Pl.1189.1753; Becc. & Hook. f. in Hook. f. Fl.Brit. India 6:405. 1892; Cooke, Fl. Pres.Bombay 3:319.1958 (Repr.ed.); Blatt. Palmes Brit. Ind. & ceyl. 471, t. 92. 1978(Repr.ed.) 'Supari'

Trunk solitary, straight, 12-20 m high, ca 40 cm in circumference, uniformally thick. Leaves 1.2-1.8 m long; Leaflets numerous, 25-50 cm long, upper confluent. Spathes double, compressed. Spadix much branched, bearing male and female flowers, Male flowers numerous, sessile; female flowers solitary, or 2-3, sessile. Fruits 3.5-4 cm long, smooth, orange or scarlet, supported by persistent perianth. Seeds in upper part.

Fls & Frts.: Throught the year.

Locality: Botanical Garden, Pratishthan College, Paithan, Aurangabad.



ACKNOWLEDGEMENTS

We are deeply indebted to our Principal, Pratishthan Mahavidyalaya, Paithan, Dist.-Aurangabad, for providing the laboratory facilities, for constant support and encouragements.

REFERENCES

- [1] Almeida, M.R. 1998. Flora of Maharashtra – Vol. 2. Blatter Herbarium, St. Xavier's College, Mumbai, pp. 102, 207, 208,

282

- [2] Almeida, M.R. 2001. Flora of Maharashtra – Vol. 3 a & b. Blatter Herbarium, St. Xavier's College, Mumbai, pp. 116, 301, 138, 371, 904.
- [3] Almeida, M.R. 2003. Flora of Maharashtra – Vol. 4a. Blatter Herbarium, St. Xavier's College, Mumbai, 196pp.
- [4] Almeida, M.R. 2009. Flora of Maharashtra – Vol. 5a. Blatter Herbarium, St. Xavier's College, Mumbai, pp. 47, 183.
- [5] Bachulkar, M.P. & S.R. Yadav. 1993. Some new plant records for Maharashtra. *Journal of Economic and Taxonomic Botany* 17: 329.
- [6] Bhuktar A. S. and M. M. Sardesai. 2009. *Bioinfolet*. 6(2):165.
- [7] Chavan S.Y., Waghire H. B., Bhuktar A. S. and M. M. Sardesai .2009 "*Bioinfolet*. 6(4):311.
- [8] Chavan V. B., Chillawar R. G. and O. S.Rathor. 2010. "Addition to flowering plant diversity of Nanded district of Maharashtra State" *Bioinfolet*, Vol. 7 (3): 235 – 236.
- [9] Cooke, T.C. 1958a. Flora of the Presidency of Bombay Presidency – Vol. 1. Botanical Survey of India, Kolkata, pp. 435, 474, 478.
- [10] Cooke, T.C. 1958b reprint edition. Flora of the Presidency of Bombay Presidency – Vol. 2. Botanical Survey of India, Kolkata, 577pp.
- [11] Cooke, T.C. 1958c reprint edition. Flora of the Presidency of Bombay Presidency – Vol. 3. Botanical Survey of India, Kolkata, 119pp.
- [12] Kare M. A., Survase S. A. and Bhuktar A. S. 2008. "New records of flowering plants for Marathwada, Maharashtra, India" *Bioinfolet*. 5(3):274 – 276.
- [13] Lakshminarasimhan, P. 1996. Flora of Maharashtra, Monocotyledons – Series 2. Botanical Survey of India, Kolkata, pp. 28, 139.
- [14] Mishra, D.K. & N.P. Singh. 2001. Endemic and Threatened Flowering Plants of Maharashtra. Botanical survey of India, Kolkata. 236 – 238pp.
- [15] Naik, V.N. 1966. A new *Crotalaria* species from Osmanabad District. *Indian Forestry* 92(12): 790 – 791.
- [16] Naik, V.N. 1967. *Amaranthus polygonoides* L. from Osmanabad district, a new record for India. *Journal of the Bombay Natural History Society* 64(1): 134 – 135.
- [17] Naik, V.N. 1969. An artificial key to the Leguminosae of Osmanabad district. *Marathwada University Journal of Science* 8(1): 15 – 19.
- [18] Naik, V.N. 1970. A census of *Crotalaria* species in Osmanabad district. *Marathwada University Journal of Science* 9: 15 – 18.
- [19] Naik, V.N. 1979. Flora of Osmanabad. Venus publishers, Aurangabad, 464pp.
- [20] Naik, V.N. 1998. Flora of Marathwada – Vols. 1 & 2. Amrut Prakashan, Aurangabad, 1182pp
- [21] Rathor O. S. , K. M. Ranjnikar and R. G. Chillawar. 2007. "New records for the flora of Marathwada" *Bioinfolet* 4(1):60 – 62.
- [22] Rathor O. S. and V. B. Chavan. 2002. *Jour. Bombay Nat. Hist. Soc.* 99(2):359
- [23] Rathor O. S., V. B. Chavan and M. K. Zare. 2009. *Bioinfolet* 6(1):50
- [24] Shinde S. R. and B. M. Waghmare. 2009. *Bioinfolet* 6(4):302.
- [25] Singh N. P & S. Karthikeyan (eds.) 2001. Flora of Maharashtra Vol. II. Series 2. Botanical Survey of India, Kolkata, pp. 31, 205, 245, 490, 581, 722, 780.
- [26] Singh N.P & S. Karthikeyan (eds.) 2000. Flora of Maharashtra – Vol. I. Series 2. Botanical Survey of India, Kolkata, pp. 771, 826, 976.
- [27] Sonje S. B., Kare M. A. and Bhuktar A. S. 2007. "Newly recorded exotic plants for the flora of Marathwada" *Bioinfolet*. 4(3):259 – 261.
- [28] Survase S. A. and M. M. Sardesai. 2008. "Addition to the exotic plants of Marathwada" *Bioinfolet*. 5(4):314 – 319.
- [29] Wadood Khan M. A., R. D. Taur, R. I. Shaikh and S. P. Rakhonde 2011. "Novelties in Cyperaceae – V" *Bioinfolet*. 8(3):224 – 231.
- [30] Wadood Khan M. A. , R. D. Taur, V. I. Kahalkar and A. Chandore 2009. *Bioinfolet*. 6(2):89.
- [31] Wadood Khan M. A. and S. N. Solanke 2008. "Novelties in Cyperaceae VIII –A new variety and a new record" *Bioinfolet*. 5(2):103.
- [32] Waghire H. B. and S. Y. Chavan 2010. "Further addition to the flora of Marathwada", *Bioinfolet*, Vol. 7 (1): 84 – 85
- [33] Waghire H. B., S. Y. Chavan, S. A. Survase and A. S. Bhuktar 2010. "Further addition to the flora of Marathwada", *Bioinfolet*, Vol. 7 (3): 209 – 211.