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***Full Length Article***

# Four New Flowering plant Records from Satpuda Range of Jalgaon District, (MS) India

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**ABSTRACT**

Jalgaon is one of the districts in the Khandesh region of North Maharashtra India with great biodiversity of plants. The present paper deals with the addition of 4 taxa of flowering plants to the flora of Jalgaon districts, Maharashtra. These taxa are *Habenaria plantaginea* Lindl. (Orchidaceae), *Euphorbiaserpens*Kunth. (Euphorbiaceae), *Exacum tetragonum* Roxb. (Gentianaceae), *Ceropegia hirsuta* Wight & Arn. (Asclepiadaceae). These species has been reported for the first time from Satpuda range of Jalgaon district, Maharashtra. The study provides a detailed taxonomic description, photographs and relevant information based on fresh collections.

**Key Words**: New records, Jalgaon districts, Satpuda ranges, Maharashtra.

## INTRODUCTION

The exploration of vegetation wealth of a region gives us correct understanding of bio-resources for the betterment of human beings. Jalgaon, Dhule and Nandurbar disctricts comprise Khandesh region, a northern part of Maharashtra. Jalgaon district lies between $20^0$ and $21^0$ North latitude and $74^0$ 55' and $76^0$ 28' East longitudes. The Jalgaon district has a total area about 272 sq. km. The total forest area in the district is 72685.27 hectares. On its location in the upper Tapi basin, it forms a distinct topographical unit separated from neighboring Madhya pradesh state by Satpura ranges and form the south by Satmala hilly ranges. The physiographic of the district is made up of high hill ranges on the north, alluvium in the centre and low hill ranges to the south of Tapi. On the north, the hill ranges stretch east-west and form part of the Satpuras, the highest peak being about 1175 meters. The collected species like *Habenaria plantaginea* Lindl., *Euphorbia serpens* Kunth, *Exacum tetragonum* Roxb., *Ceropegia hirsuta* Wight & Arn., are rare to Maharashtra and collected from only few places like Chandrapur, Bhandara, Raigad, Pune, Satara, Kolhapur, Ratnagiri, Singhudurg and Thane. The study region though botanically rich in biodiversity have not been explored extensively except a few sporadic reports on floristic of Khan 2014; More 2013; Kshirsagar 2008; Valvi 2006. The forest of Jalgaon district is of the tropical, dry deciduous type. The vegetation varies with the changes in altitude, aspect and rainfall. While working on floristic of Jalgaon district of Maharashtra we undertook frequent collection tours in every season to study plants. Many workers under botanical explorations in the Satpuda ranges (The range rises in eastern Gujarat state, running east through the border of Maharashtra and Madhya Pradesh to the east till Chhattisgarh) worked out many further additions to the flora of Satpuda, viz. Ray and Sainkhediya (2014), Kamble and Chaturvedi (2014).

**MATERIALS AND METHODS**

Satpuda ranges, which is one of the major hotspot of plants in Jalgaon district. During botanical exploration of Jalgaon district in Maharashtra four interesting species *Habenaria plantaginea* Lindl. (Orchidaceae) N $21^0$22.631' E $75^0$35.828' from Vaki, *Euphorbiaserpens* Kunth. (Euphorbiaceae) N $21^0$22.973' E $75^0$30.475' from Devgiri, *Exacum tetragonum* Roxb. (Gentianaceae) N $21^0$21.874' E $75^0$42.456' from Jamnya, while *Ceropegia hirsuta* Wight & Arn. (Asclepiadaceae) N $21^0$17.796' E $75^0$35.606' from Vagjira was collected from hill slopes, margins of water courses and tuff or limestone bedrock. The species was identified with the help of pertinent litrature (Lakshminarasimhan *et al*., 1996; Mitra 1971; Singh *et al*., 2001; Mudgal *et al.*, 1997; Sardesai 2002) and the taxa were confirmed by Dr. Milind Sardesai Department of Botany, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad and by consulting the BSI western Circle, Pune, herbarium as well. The voucher specimens have been deposited in the herbarium of Department of Botany, H. J. Thim College of Arts and Science Mehrun, Jalgaon, Maharashtra.

**RESULTS AND DISCUSSION**

***Habenaria plantaginea*** Lindl. Gen. Sp. Orchid. 323. 1835; Hook.f. Fl. Brit. India 6: 141. 1890;Sant. & Kapad. Orch. BombaS 28, t. 6, f. 25. 1966; Lakshmi. in Sharma et al. Fl. Maharashtra St. Monocot. 42. 1996. Sigh*et al.*, in Fl. M. P. 3: 45. 2001. **(Plate I)**

Terrestrial herbs, 20-50 cm high. Tubers 2, unequal. Leaves radical, prostrate on the ground, uppermost small and bract-like, oblong-lanceolate or elliptic, 4-8 x 1.5-2 cm, entire, membranous. Flowers in lax, few to many flowered racemes on long, slender scape, shortly pedicellate; bracts ovate-lanceolate, much shorter than ovary. Sepals white, unequal; dorsal sepal broadly ovate, entre; lateral sepals falcately oblong. Petals white, linear-lanceolate. Labellum rhomboid, 3-lobed, long spurred; mid lobe narrowly linear; lateral lobes much broader than mid lobe, wing like; spur white, slender, curved, pendulous, longer than ovary. Capsules fusiform, turgid, curved.

**Flowering and Fruiting:** September-November

**GPS Reading:**N $21^0$22.631' E $75^0$35.828' (Elevation $665^m$)

**Distribution:** Rare. Insatpuda ranges. In moist shady places in forest at high elevations. In Maharashtra reported from Ahmednagar, Chandrapur, Bhandara, Raigad, Pune and Satara.

**Specimens examined:**Jalgaon Dist., Langdha Aamba, *TAK* 2398; Vaki, *TAK* 2472; Jamnya, *TAK*2587.

***Euphorbiaserpens*** Kunth in Humb., Bonpl. & Kunth, Nov. Gen. Sp. 2: 52. 1817; Mitra in J. Bombay Nat. Hist. Soc*.* 68:854.1971; Mudgal *et al.*, in Fl. M. P. 2: 555. 1997. *Anisophyllum serpens* (Kunth) Klotzsch and Garcke, Abhandl. Akad. Berl. Phys. 1859: 23. 1860. *Chamaesyce serpens* (Kunth) Small, Fl. S.E.U.S. 709. 1903. *Euphorbia microphylla* auct. non Heyne ex Roth, 1821: Hook. f., Fl. Brit. India 5: 252. 1887, *p.p. Euphorbia orbiculata* Kunth var. *jawaharii* Rajagopal and Panigrahi in Taxon 17: 547. 1968.'Matted Sandmat, Creeping Spurge'**(Plate I).**

Acompletely glabrous much-branched prostrate annual herb with stems to c. 25 cm long, rooting at the nodes. Petioles 0.5-1 mm long.Leaf-blades suborbicular-ovate, 1-5 x 1-4.5 mm, rounded to emarginated at the apex, obliquely shallowly cordate at the base, entire, pale green. Stipules interpetiolar, fused above and beneath to form a triangular laciniate or fimbriate white scale 0.5 mm long. Cyathia axillary, solitary, in the uppermost axils; glands transversely ovate or oblong, purplish, with narrow, subentire white appendages. Frutis trigonous, keels carinate, 1.2 x 1.5 mm, smooth. Seeds ovoid, quadrangular, 0.8 x 0.5 mm, smooth, pinkish-brown.

**Flowering and Fruiting:**August-November

**GPS Reading:** N $21^0$22.973' E $75^0$30.475' (Elevation $435^m$)

**Distribution:** Occasional. Along the banks of streams, canals and moist hill slopes.

**Specimens examined:** Jalgaon Dist., Manudevi forest, *TAK* 2235; Devgiri*TAK*2469; NMU Campus, *TAK* 2518.

**Note:** It looks similar to *E. heyneana* Spreng. but differs by its roots at nodes, green stem, sometimes with red striations, stipules on sides united, triangular, leaf blade oblong to sub-orbicular, leaf base truncate or cordate, white appendages of glands longer and wider than glands.

***Exacum tetragonum***Roxb. Fl. Ind. ed. Carey & Wall. 1: 413. 1820; Mudgal *et al.*, in Fl. M. P. 2: 104. 1997; Singh *et al.* Fl. Maharashtra St. Dicot. 2: 408. 2001. *E. tetragonum* var. *stylosa* (Wall. ex D. Don) Cl. in Hook. f. op. cit. *E. bicolor* Roxb. op. cit. 413;Cooke, Fl. Pres. Bombay 2: 252. 1958. (Repr.).'Udi-chirayat'. **(Plate I)**

***Habenaria plantaginea*** Lindl.

***Euphorbia serpens*** Kunth.

***Ceropegia hirsuta*** Wight & Arn.

***Exacum tetragonum*** Roxb.

**Plate I**

Herbs, erect *ca* 60 cm high; stems 4-angled, branched in upper portion. Leaves lanceolate, 4-15 x 1-5 cm, narrowed at base or subsessile. Flowers in terminal, much branched, paniculate cyme. Calyx lobes ovate, 5-10 mm long, acuminate, winged on the back. Corolla white with violet-blue patches towards edges; lobes lanceolate, 10-20 mm long, acute. Capsules globose, 0.7-1.5 cm long, smooth, shining , tipped with remains of style, yellowish-brown.

**Flowering and Fruiting:** September-February

**GPS Reading:** N $21^0$21.874' E $75^0$42.456' (Elevation $775^m$)

**Distribution:** Occasional, along the margins of streams, rice fields, among grasses along forest roads and in marshes of wet grasslands at high elevations.In Maharashtra reported fromKolhapur, Nasik, Raigad, Ratnagiri, Singhudurg and Thane.

**Specimens examined:**Jalgaon Dist., Jamnya*TAK*2352; Pathi*TAK*2536; Devgiri, *TAK* 2487.

**Note:** Leaves upper ones sessile, lower most subsessile; corolla lobes more than 1.5 cm long.

***Ceropegia hirsuta***Wight & Arn. in Wight, Contrib. 30. 1834; Singh *et al.* Fl. Maharashtra St. Dicot. 2: 350. 2001. Mudgal *et al.*, in Fl. M. P. 2: 69. 1997.'Bosia kand, Hamana'. **(Plate I)**

Twining herbs, hispid; roots tuberous. Leaves variable, ovate, elliptic-lanceolate, 5-7 x 3-4 cm, acute to obtuse at apex, rounded at base, pilose. Flowers in few-flowered cymes; peduncles 1.2-2.5 cm long, stout, hispid. Corolla light green and variously striped with purple; lobes broad and folded back, upper $1/3^{rd}$ light yellow, ciliate on margin and midrib. Outer corona-lobes deltoid, cleft at apex, pilose, extending above the gynostegium; inner corona-lobes hooked at tip, 3 times the length of the outer. Follicles up to 9 cm long.

**Flowering and Fruiting:** August-October

**GPS Reading:** N $21^0$17.796' E $75^0$35.606' (Elevation $422^m$)

**Distribution:** Occasional.Along the hill slopes and in moist rocky places. Elsewhere in Maharastra reported from Akola, Aurangabad, Nasik, Pune, Ratnagiri and Satara.

**Specimens examined:** Jalgaon Dist., Vagjira, *TAK*2592; Mandap-Nalah, *TAK*2609; Vaki, *TAK* 2479.

**Note:** Plants hispid; corolla tube hairy inside; inner corona hooked at tips.

**Uses:** The decoction of plant is given orally to antidote snake bite coupled with the external application of plant paste (Mudgal 1997).

## CONCLUSION

We have gone through all pertinent literature (Kshirsagar 2008, Patil 2003) and by consulting the BSI Herbarium Pune. To find out the occurrence, distribution and habitat of these species. We found that, these species were not reported in any of the Jalgaon flora. This clearly reveals that, these species are rare to flora of Maharashtra State, even India as a whole. These species are new record to the flora of Jalgaon district of Maharashtra State. The voucher specimens are deposited in the herbarium of Department of Botany, H. J. Thim College of Arts and Science Mehrun, Jalgaon.

On close examination of herbarium specimens and detailed scrutiny of literature published till today on these taxa, it can be claimed that these are new records for Satpuda range of Jalgaon district of Maharashtra.

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