



New Record of Some Rare Plants to the Flora of Nagpur District, Maharashtra

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ABSTRACT

Floristic inventory and diversity assessments are necessary to understand the present diversity status and conservation of biodiversity. During the botanical explorations of Nagpur District, the authors collected some rare taxa from the restricted locations and various habitats for the first time from this region. Some of taxa having very small population size. Specimens were collected, identified with the reference of different floras and authenticated it.

Key Words: New Additions, Flora of Nagpur District, Maharashtra.

INTRODUCTION

One of the most basic tools needed to confront the loss of biodiversity on our planet is lack of floristic information. Floristic studies have acquired increasing importance in recent years in response to the need of developing and under developing countries to assess their plant wealth. In the recent years there has been growing interest in plant diversity studies in general and floristic studies in particular. In this connection regional floristic studies are of much importance. It can be achieved by intensive exploration of smaller areas. Rare and endangered taxa often exist as relatively small populations and are subject to population bottlenecks.

There are many reasons for the small populations of species namely, natural habitat loss, seed dispersal problems, reproductive development, seed germination, anthropogenic activities likely extensive grazing, human interference etc. Plant species that are common to the wettest environments often exhibit the greatest degree and most effective adaptations to wetland conditions. As hydrologic conditions vary from periodic or seasonal saturation to permanent inundation, the vegetation will also vary from species specifically adapted to wetland areas to a more transitional grouping of species. But wetland resources and ecosystem functions are particularly sensitive to biological and physical alteration.

Among the total forest cover of Maharashtra, Vidarbha contributing about 53.30% forest cover (FSI, 2011), these region constitutes 11

districts namely Amravati, Akola, Bhandara, Buldhana, Chandrapur, Gadchiroli, Gondia, Nagpur, Wardha, Washim and Yawatmal. The Nagpur district is quite rich and varied in its plant composition. Earliest documentation on floristic exploration of this area was done by Ugemuge (1986). According to Flora of Nagpur District (Ugemuge, 1986) there are 1136 plant species which fall under 669 genera and 142 families. Many workers under botanical explorations in the district worked out many further additions to the Flora of Nagpur District, viz. Bhuskute (1989, 1990), Thakre and Srinivasu (2012a, 2012b) and Kamble *et al.*, (2013).

MATERIALS AND METHODS

STUDY AREA

Geographically, Nagpur district is located in the center of the Country and is bordered with the large Satpudas Hill ranges with their detached parts. It is divided into 14 talukas (Figure 1). Nagpur district covered one of the rich biodiversity zone i.e. Pench National Park. This is nestling in the lower southern reaches of the Satpuda hills, is named after Pench River, meandering through the park from north to south. It is located on the southern boundary of Madhya Pradesh, bordering Maharashtra, in the districts of Seoni and Chhindwara. Pench National Park, comprising 758 km², out of which a core area of 299 km² of Indira Priyadarshini Pench National Park and the Mowgli Pench Sanctuary and remaining 464 km² of Pench National Park is the buffer area. It is located in Southern Madhya Pradesh in India, about 102 km from the city of Nagpur. 90% of area is in the neighboring state of Madhya Pradesh rest 10%

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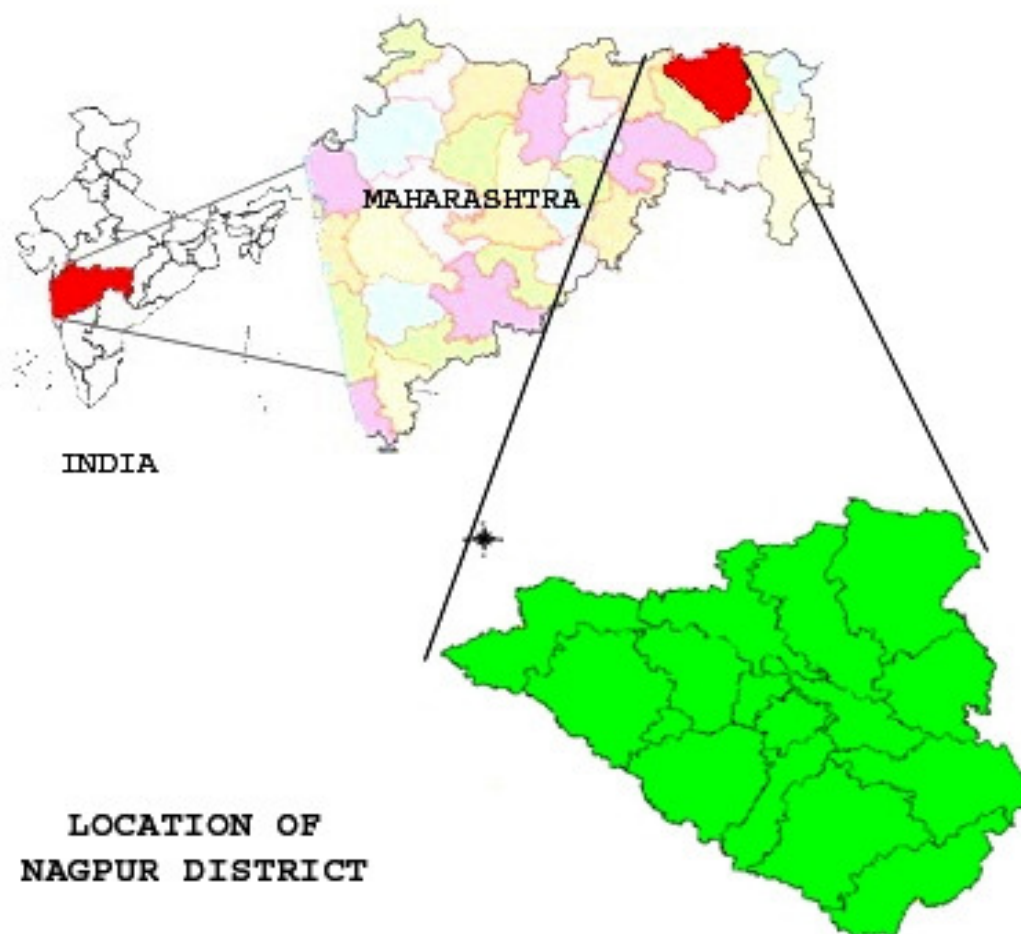


Figure 1. Location of Nagpur District in Maharashtra and India

spread over an area of 275 km² in Maharashtra lies between latitudes 21° 40' 18" north and longitudes 79° 18' 12" east. The forest cover of Pench National Park is about 13.59% of the district forest cover. It is of southern tropical moist deciduous and tropical dry deciduous type of forest. Major parts are covered under wetland area.

Botanical explorations were done throughout the district and Pench National Park for floristic studies. Perusal of literatures, reports and the floras namely; Flora of Nagpur District

(Ugemuge 1986), The Flora of Maharashtra (Almeida 1998), Flora of Marathwada (Naik 1998), Flora of Maharashtra State Vol. I (Singh and Karthikeyan, 2000) and Flora of Maharashtra State Vol. II (Singh et al, 2001) revealed that these plants have yet not been collected and reported previously from the Nagpur District. The collected voucher specimens were deposited at the Herbarium, Department of Botany, RTM Nagpur University, Nagpur.

OBSERVATIONS AND RESULTS

Authors collected some specimens belonging to families Gesneriaceae, Commelinaceae, Orchidaceae and Zingiberaceae. After critical microscopic observations and authentication with the help of floras, it was found that these are addition to the Flora of Nagpur district. Among which *Chirita hamosa* R. Br of family Gesneriaceae is the first record for the Vidarbha. The specimens are illustrated below. The flowering and fruiting seasons, habitats and the localities in the district of the plants also cited in the text.

1. Gesneriaceae

***Chirita hamosa* R. Br.** In Benn. Pl. Jav. Rar. 117. 1838-1852; *Chirita violoides* (Wall.) M.R.Almeida in Fl. Maharashtra 3B: 437 2001; C.B.Cl. in Hook. F. Fl. Brit. India 4: 360. 1984; Cook, Fl. Pres. Bombay 2: 396. 1958 (Repr.). Herbs, annual, 30-50 cm tall. Leaves subequal, 8-15 X 5-10 cm, ovate or elliptic, thin, apex acute, margins crenulate; peduncles adnate to petioles. Corolla tube whitish, limp pale blue or rosy. Capsules curved, rugose. (Fig.2a)

Flowering & Fruiting: September- October

Ecology: Moist & Wet places.

Location: Pench National Park, Nagpur.

Status: Rare

Exsiccata: Bot/9810

Note: It is the first record for Vidarbha.

2. Commelinaceae

***Murdannia semiteres* (Dalz.) Sant.** In Poona Agric. Coll. Mag. 41:284. 1951 & in J. Bombay Nat. Hist. Soc. 52:658. 1954. *Aneilema semiteres* Dalz. In Hook. Kew J. Bot. 3:138. 1851. *A. paniculatum* Wall. ex C.B.Cl. in DC. Monogr. Phan. 3:215. 1881 non Wight, 1853; Hook. F. Fl. Brit. India 6:381. 1892; Cooke, Fl. Pres. Bombay 3:300. 1958 (Repr.ed.).

Herbs, 4-20 cm high, erect, caespitose; roots fibrous; stems with yellowish, scarious sheaths at base. Leaves 4-10 X 0.13-0.15 cm, linear, finely acuminate. Flowers blue. Capsules 0.25-0.33 cm long, ellipsoid or subglobose, smooth, shining. Seeds pale yellow, irregularly angular. (Fig.2c)

Flowering & Fruiting: July- October

Ecology: Moist & Wet places.

Location: Pench National Park, Nagpur.

Status : Rare

Exsiccata: Bot/9811

3. Orchidaceae

***Habenaria roxburghii* Nicols.** In Sald. & Nicols. Fl. Hassan Dt. 834. 1976. *H. platyphylla* Spr. Syst. Veg. 3: 690. 1826; Hook. F. Fl. Brit. India 6: 140. 1890; Cooke, Fl. Pres. Bombay 3:222. 1958 (Repr.ed.); Sant. & Kap. Orch. Bombay 19. 1966. Herbs, c 45 cm high; roots tuberous. Leaves c 10 X 10 cm, fleshy, sessile, broadly ovate to suborbicular, apex acute. Flowers white, in dense many-flowered spikes, 6-10 cm long; bracts lanceolate. Capsules c 2cm long, strongly ribbed, beaked. (Fig.2d)

Flowering & Fruiting: July- October

Ecology: Moist & Rocky places.

Location: Pench National Park, Nagpur.

Status : Rare

Exsiccata: Bot/9812

4. Zingiberaceae

***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.); Holt. In Gard. Bull. Singapore 13:242, f. 31 & 32. 1950; Burt & R.M. Smith in Notes Roy. Bot. Gard. Edinb. 31:200. 1972. *Banksia speciosa* Koen. Apud Retz. Obs. Bot. 3:75. 1783. *Costus speciosus* var. *nipalensis* (Rosc.) Baker in Hook. f. *op.cit.* 250.

Herbs, 2-3 m tall; rootstock tuberous; stems more or less woody at base. Leaves 15-30 X 3.0-7.5 cm, subsessile, oblong or oblanceolate-oblong, 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, c 2 cm in diam., red. Seeds black, aril white. (Fig.2b)

Flowering & Fruiting: August- February.

Ecology: Rocky wet places.

Location: Satnavari, Bajargaon

Status : Infrequent

Exsiccata: Bot/9813

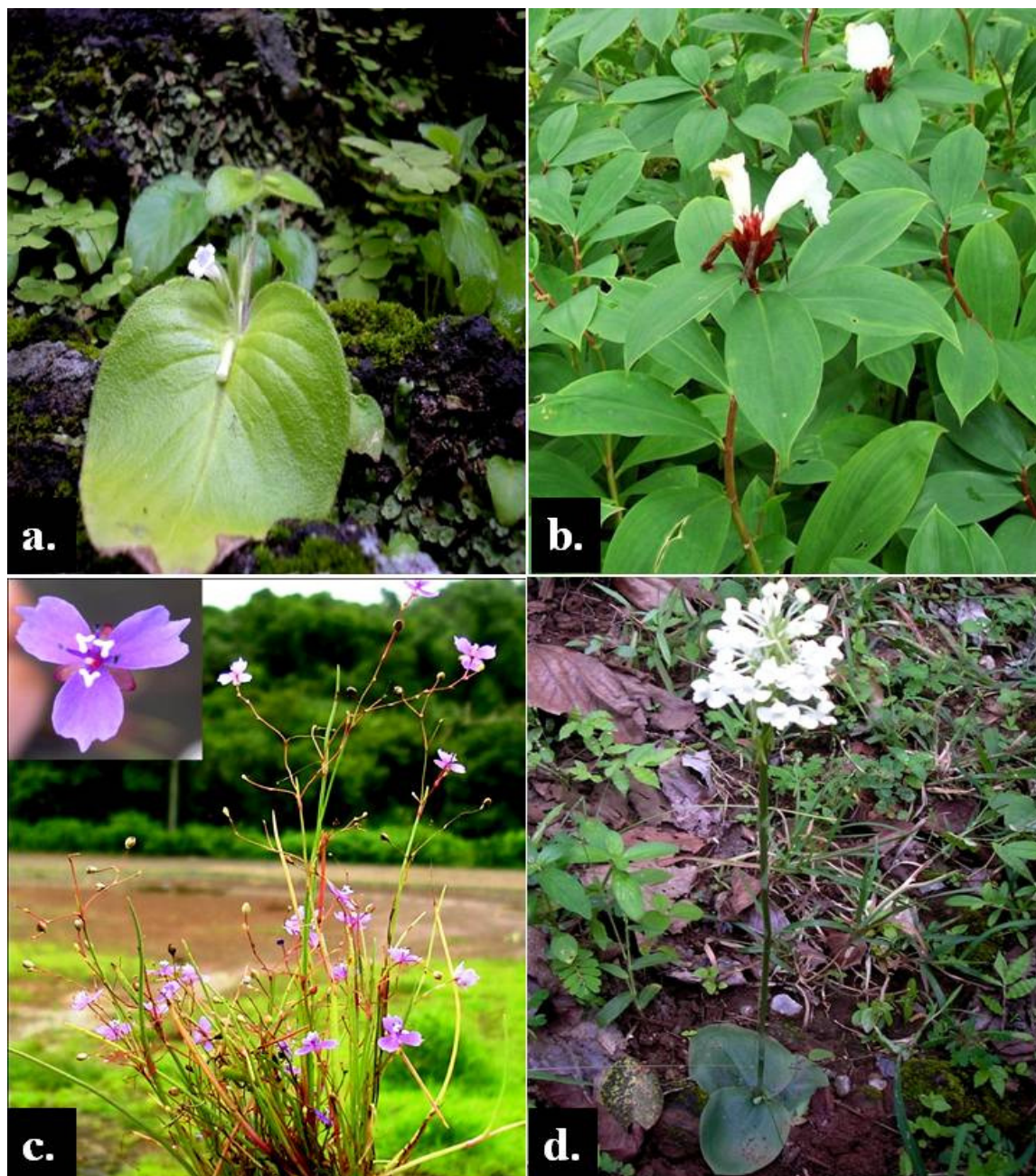


Figure 2. New additions to the Flora of Nagpur District, a) *Chirita hamosa* R. Br; b) *Costus speciosus* (Koen) J.E.Sm; c) *Murdannia semiteres* (Dalz.) Sant; d) *Habenaria roxburghii* Nicols.

DISCUSSION

Floristic studies and diversity assessments at local and regional levels are alarming to understand the present diversity status and conservation of forest biodiversity. From Nagpur district, the major region is under the protected forest, because of which, there are many taxa which are not documented in the Flora of Nagpur District. This study added some rare plants like *Chirita hamosa* R. Br., *Murdannia semiteres* (Dalz.) Sant., *Habenaria roxburghii* Nicols. and *Costus speciosus* (Koen) J.E.Sm. to the flora and collected for the first time from this region with mentioning their status. The significance of such field research is the detection of novel additions to a floristic region, which subsequently improve our understanding of plant biogeography, species diversity.

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