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ORIGINAL RESEARCH ARTICLE

New addition to the flora of Madhya Pradesh, India

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Abstract: Present study reported 2 flowering plants which are new records for the flora of Madhya Pradesh namely *Neuracanthus sphaerostachys* (Nees) Dalz. (Acanthaceae) and *Habenaria longicorniculata* Graham. (Orchidaceae). Plants are enumerated along with proper citations, collection number, brief description, family, synonyms, habitat, flowering and fruiting, locality and any other uses.

Key Words: New records; flora; Acanthaceae; Orchidaceae; Madhya Pradesh.

Introduction

India has been recognized as one of the 12-megadivesity countries of the world and it is estimated that these 12 countries possess 70% of the world total flowering plants (Mc Neely *et al.,* 1990). With only 2.5% of the earth's land area, India accounts for 8% of the recorded species of the world which includes millions of races, subspecies and local variants of species and the ecological processes and cycles that link organisms into population, communities, and all different ecosystems (Venkataraman, 2006). Demographically, it is the second largest populated country in the world and a majority of its population directly depends on biological resources for livelihood. Western Ghats and Eastern Himalayas of India are two of the 18 hotspots of the world due to rich phytodiversity and high percentage of endemism (Myers, 1988). Chowdhary and Murti (2002) have pointed out that approximately 17,500 species of angiosperms occur in India, while Kartikeyan (2000) has estimated approximately 16,809 species in India. Further, it is highly significant to note that India harbours maximum number of endemic species i.e. 5725 angiosperms, 10 gymnosperms, 1200 pteridophyates, 678 bryophytes, 260 liverworts, 466 lichens, 3500 fungi and 1924 algae (Sanjappa, 2005).

Present study was carried out in Jhabua district of Madhya Pradesh and situated at 22' 47 N latitude and 71' 35 E longitude at an average altitude of 428 m above mean sea level (Fig. 1).

Total area of the district is 6,792 Kms. The flora of Jhabua district is very rich and diverse (Samvatsar, 1996). Former studies have reported that there are about 692 plant species belonging to 469 genera and 115 species (Wagh and Jain 2013). In this paper the author collected two interesting species belonging to the genus *Habenaria* and *Neuracanthus* from Jhabua district of Madhya Pradesh. The specimen compared with the relevant data in literature (Oommachan, 1977; Roy *et al.,* 1992; Verma *et al.,* 1993; Oommachan and Srivastava, 1996; Samvastar, 1996; Mudgal *et al.,* 1997; Khanna *et al.,* 2001; Sinha and Shukla 2007, Jain *et al.,* 2011; Wagh and Jain 2013a, b) and consultation of available herbarium specimens at Botanical Survey of India, Allahabd circle and National Botanical Research Institute, Lucknow.

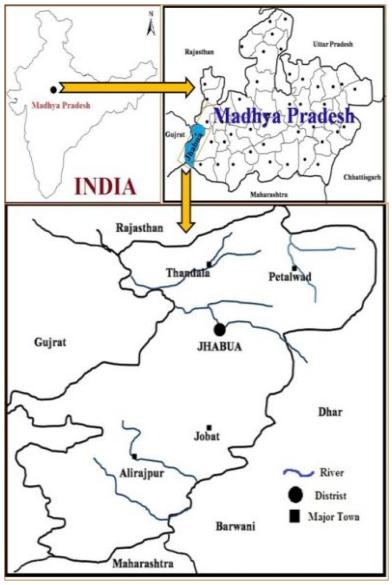

Figure 1: Map of Jhabua District

As a result of all these comparisons, the specimens collected were found to be new records for Jhabua district, Madhya Pradesh, India.

Materials and Methods

Extensive floristic exploration of Jhabua district was carried out between 2008 to 2013, the first author collected plant samples from different habitat of Jhabua district. The specimens were first compared with similar species from flora of Maharashtra (Almeida, 1996), Bole and Santapau (1951), Flora of Kachchh district (Patel *et al.,* 2011). Field plant collection and herbarium were prepared following customary method (Jain and Rao, 1977). Plants are enumerated along with proper citations, collection number, brief description, family, synonyms, habitat, flowering and

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fruiting, locality and any other uses. The cited specimens are deposited in S.K. Jain Institute of Ethnobiology, Jiwaji University, Gwalior Madhya Pradesh.

Results and Discussion

Present study observes 2 plants which were not reported in the flora of Madhya Pradesh including supplementary flora of Madhya Pradesh published by Botanical Survey of India, Calcutta and regional flora of Madhya Pradesh (Sinha and Shukla, 2007; Roy *et al.,* 1992; Samvatsar, 1996; Oommachan and Srivastava, 1996, Wagh 2013, Ray and Sainkhediya, 2014) hence these plants have been reported first time and considered as a new record to flora of Madhya Pradesh. These 2 plant species are distributed in 2 genera and 2 families of Monocot and Dicot group respectively. The botanical name of *Neuracanthus sphaerostachys* is still considered as unresolved name in the world database such as Green taxonomy, IPNI, Plant list etc. The plants are enumerated below with correct name, synonyms (if), family, brief description, habitat, flowering fruiting, locality and medicinal use.

Neuracanthus sphaerostachys (Nees) Dalz. in Kew Journ. Bot. 2: 140, 1850; Dalz. & Gibs., 4: 491, 1885; Talbot, Trees Bombay ed. 2, 266, 1902; Woodrow in Journ. Bombay Nat. Hist. Soc. 12: 356, 1899; Santapau in Bot. Mem. Univ. Bombay 2: 66, 1951 & in JBNHS 51: 364, 1953; Shah & Santapau in Journ. Bombay Nat. Hist. Soc. 54: 960-70; Almeida Fl. Savantwadi; 326, 199-; Kothari & Moorthy, Fl. Raigad Dist. 303, 1993; Santapau, Fl. Khandala ed. 3, 203, 1967; Bole & Santapau, JBNHS 50: 428, 1952; Lon in Singh *et al.,* Fl. Maharashtra (Dicot.) 2: 652, 2001; Yadav & Sardesai, Fl. Kolhapur Dist. 363, 2002. *Lepidagathis sphaerostachya* Nees in DC., Prodr. 11: 254, 1847. *N. lawii* Wight, Icon. t. 1531, 1850. (Fig. 2) (JBA - 620).

Figure 2: *Neuracanthus sphaerostachys* (Nees) Dalz.

Family: Acanthaceae

Herb. Stem erect, simple, terete to quadrangular, 15-75 cms high, branching is very rare. Leaves sub-sessile, obtuse or sub-obtuse, elliptic oblong, glabrous to scabrid, leaf base is rounded to cordate, main lateral nerves 8-10 pairs, conspicuous. Flowers in globose congested silky hairy spikes sessile in the opposite axils, at first in simple spikes, at length in dense heads formed of closely packed spikes, the heads reaching 7.5 or more cms. in diameter, bracts at first green, then brown, at length black, often broader than long, the lower ones glabrous, the rest densely hairy and ciliate, all strongly nerves. Calyx 1 cm long, 2 - lipped, densely silky-hairy on both sides, upper lip of calyx oblong, 3-toothed, 3-nerved, the lower lip deeply bifid, segments lanceolate, 1-nerved, all the segments reticulately nerved, Corolla 1 cm long, with white tube and blue limb, corolla tube slender, cylindric, as long as the calyx; limb infundibuliform. Capsules 10 x 5 mm, ovoid. Seeds 4 mm in diameter. Fringe of the forest. *Fl. & Fr.:* Sept. - Nov. Loc.: Sehjgaon (Mahadeo faliya) and Ambadaberi, Root infusion is given in kidney disorder.

Habenaria longicorniculata Graham, Cat. Bombay Pl. 202**,** 1839; Santapau & Kapadia, Orch. Bombay 29, t. f. 1, 1966; Bole & Almeida, JBNHS 83: 582, 1986; Seidentanden in Mathew, Fl. Tamilnadu Carn. 2: 1564, 1983; Lakshminarsimhan in Sharma *et al.,* Fl. Maharashtra (Monoc.) 39, 1996; Yadav & Sardesai, Fl. Kolhapur Dist. 467, 2002. (Fig. 3) (JBA - 499).

Figure 3: Tribal man with *Habenaria longicorniculata* Graham.

Family: Orchidaceae

30-50 cm high; terrestrial herb. Tubers sub-globose with several slender roots. Leaves 3-5 clustered at the base of the short stem with amplexicaul sheaths. Inflorescence racemose, few flowered. Flowers pedicellate, white, jasmine scented; bracts 2 - 5 cm long. Dorsal sepal green, 3-nerved, ovate, concave. Lateral sepal opened backwards, longer than the dorsal sepal, white with greenish tinge on the margins, 1.3x0.6cm. Petal greenish white, ligulate, 1.1 x 0.3cm. Anther pollinia 2, caudicle longer than the pollinia, viscidium inconspicuous. Rostellum little shorter than the anther, 3-lobed, apex obscurely emarginated. Stigmatic processes 2, dark green, 0.4cm; ovary ribbed 2.3cm. Spur 12 cm, whitish at base, darker green at the apex, slightly pointed at apex, bulges at the opening. Labellum white, 2.5 cm long, side lobes slightly larger than the mid lobe, side lobes deflexed outwards. In moist places of forest. *Fl. & Fr.*: July - Oct. Loc.: Karah, Kohiwaw. Tubers are given to the women after delivery for lactation.

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