

Full Length Article

Some New Record for the flora of Madhya Pradesh

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ABSTRACT

Nimar region is situated in the south western part of Madhya Pradesh and lies between 21° - $05'$ N Latitude and 74° - $25'$ to 76° - $14'E$ Longitude. Nimar region cover four districts of Madhya Pradesh namely West Nimar (Kargone), East Nimar (Khandwa), Burhanpur and Barwani and this is well known for BT cotton cultivation. Vindhyan scab is occupying in the Northern part and major part of southern Nimar region is covered by Satpura hill ranges. Present work is an outcome of three years and surveyed during 2010 to 2013 by well planned schedule. Present study reported 18 flowering plants which are new records for the flora of Madhya Pradesh. These are *Acalypha lanceolata* Willd. *Ammania fimbriata* Wt., *Amberboa ramosa* (Roxb.) Jafri, *Cleome burmanni* Wight, *Clerodendrum calamitosum* L., *Eriocaulon minutum* Hook. f., *Indigofera duthei* Drum ex Naik, *Desmodium scorpiurus* (Sw.) Desv. *Dichanthium faveolatum* (Del.) Roberty, *Mimosa rubicaulis* Lam., *Tephrosia leptostachya* DC, *Teprosia hamiltonii* J. R. Drumm ex Gamble, *Sporobolus piliferus* (Trin.) Kuntze, *Fimbristylis cymosa* R. Br., *Lagenaria leucantha* (Duch.) Rusby, *Petalium murex* L., *Berlaria acanthoides* Vahl., *Impatiens lucida* Heyne ex Hook. F and *Lophopogon tridentus* (Roxb.) Hack. have been reported as new records for Madhya Pradesh, India.

Key words: New records, Vindhyan scabs, Satpura hills, Nimar region.

INTRODUCTION

Nimar region is situated in the south western part of Madhya Pradesh and lie between 21° - $05'$ N Latitude and 74° - $25'$ to 76° - $14'E$ Longitude. Nimar includes four districts of Madhya Pradesh namely West Nimar (Kargone), East Nimar (Khandwa), Burhanpur and Barwani. This region has a very rich floral diversity and a treasure of valuable natural resources. Topographically Nimar region is situated centrally in Northern part with covered with Vindhyan scabs and in Southern part with Satpura hill ranges. The climate of Nimar region is arid and dry. The maximum-minimum temperature ranges in the Nimar region is 22° C to 48° C. The average rainfall of the area is 83 mm to 11000 mm. The maximum humidity of the Nimar region is found in the month of July (70 %). Forest of Nimar is of tropical dry deciduous forest (Champion & Seth, 1968). Whole area is covered by black cotton soil.

Narmada, Tapti, Kunda, Chhota-Tawa, Machak, is the major rivers flowing in the Nimar region. It provides a favorable ground for the varied ecological habitats with overlapping vegetation pattern and different floral elements. Kalibith, Nagalwadi, Asirgarh, Pipaljhopa and Sirvel have a rich pocket of vegetation and dense forest. Forest of Nimar is classified into teak and mixed forest. *Tectona grandis* is the dominant component of teak forest. Teak is associated with *Anogeissus latifolia*, *Madhyca longifolia*, *Terminalia bellerica*, *Terminalia cuneata*, *Lagerstroma parvifolia*, *Acacia nilotica*, *Vitex negundo*, *Boswellia serrata*, *Buchnaria cochinchinensis*. Ground cover is dominated by *Acanthospermum hispidum*, *Alysicarpus pubescence*, *Senna occidentalis*, *Zornia gibbosa*, *Cynodon dactylon*, *Heteropogon contortus*. Anjan forest, Salai forest, Khair forest included under mixed forest.

Hardwickia binata, *Butea monosperma*, *Acacia catechu*, *Diospyros melanoxylon* are common in mixed forest. Present paper reported 18 plants which were not recorded in Flora of Madhya Pradesh (Verma *et al.*, 1993, Mudgal *et al.*, 1997, Singh *et al.*, 2001 and supplement to flora of M.P. Khanna *et al.*, 2001). Besides these some recent works have also been published (Sahu *et al.*, 2012; Ray and Sainkhediya 2014). These plants were also unrecorded in recent publication of Nimar region (Mujjafar *et al.*, 2012; Sainkhediya and Ray, 2013).

MATERIALS AND METHODS

Extensive floristic exploration of Nimar region in Madhya Pradesh was carried out in 2010-2013. Field plant collection and herbarium were prepared following customary method (Jain and Rao, 1977). Plant specimen were identified with the help of flora and perusal of literature (Verma *et al.*, 1993; Sing *et al.*, 2001; Mudgal *et al.*, 1997; Khanna *et al.*, 2001; Oommachan, 1977; Shah, 1978; Duthi, 1960; Gamble, 1915; Hains, 1921-1924; Cook, 1903; Hooker, 1872-1897; Naik, 1998). Plants were enumerated along with a brief description, habit, habitat, locality and collection number. Some plants were identified from Botanical Survey of India, central circle Allahabad. The cited specimens were deposited in Department of Botany, PMB Gujarati Science College Indore Madhya Pradesh.

Result and discussion

Present study observes 18 plants which were not reported in the flora of Madhya Pradesh including supplementary flora of Madhya Pradesh published by BSI, Calcutta and regional flora of Madhya Pradesh (Sinha and Shukla, 2007; Roy *et al.*, 1992; Samvatsar, 1996; Oommachan and Shrivastav, 1996) hence these plants have been reported first time and considered as a new record to flora of Madhya Pradesh. These 18 plants are distributed in 17 genera and 14 families. These plants are enumerated here.

Enumeration:

1. *Ammania fimbriata* Wt.

Family-Lythraceae

Habitat-In marshes, along streams and ditches. Locality-Thikari (Barwani)

Herbs, up to 50 cm tall, tetragled. Leaves decussate, sessile, lanceolate to oblong, 1-3 cm long, lower leaves cuneate to cordate at base; upper leaves cordate at base, bracteoles acute-

triangular to subulate. Flowers sessile, in solitary axillary. Calyx campanulate, 1.8 - 2.2 mm long. Calyx 5, appendages absent; interjected folds rudimentary. Petals 5, pink, pinnately, 1.9-2.9 mm long. Stamens 5, filaments 3-3.5 mm long, free. Anthers exerted, deep brown before dehiscence. Ovary ellipsoid. Style 2 mm long, exerted. Stigma capitate. Capsule elongate-ellipsoid, ca 3 mm long, 3-valved. Seeds semi-ellipsoidal, 1.5 mm long.

Flower and Fruit –August-November

Exsiccata: SRJS: 3400

2. *Amberboa ramosa* (Roxb.) Jeffrey

Family-Asteraceae

Habitat- In cultivated fields and ditches. Locality-Bijagarh (Khargone)

Annual Herb, 15-60 cm tall, branches angled. Leaves alternate, oblong-obovate, mucronulate, lobes 2-7.5 cm long, crisped, glabrous, petioles obscure. Heads ovoid-oblong, 1.5-2.1 X 0.8-1.5 cm solitary, terminal, pubescent, peduncles grooved, small, foliaceous bracts, involucre bracts elliptic-oblong with a long recurved scent spine awn. Pappus many, unequal, silvery-brown hairs. Corollas tubular, pale-pink, 1.2-2 cm long, lobes linear, acute. Anther tails connate to the tips. Style long, slender, recurved. Palea of the receptacle short. Achenes oblong, 4-5 mm long, tetragonous, strongly ribbed, narrowed at base, often pitted between the ribs.

Flower and Fruit –November-February

Exsiccata: SRJS: 3719

3. *Eriocaulon minutum* Hook. f.

Family-Eriocaulaceae

Habitat- On gravelly slopes of hill forests. Locality-Pipaljhopa (Khargone)

Herb 1-2 in. high densely tufted. Leaves acute, compressed, 3-5 nerved, base dilated. Peduncles 1.2 in. high, capillary, flexuous, numerous, aggregated, ribbed, slender, glabrous, twisted. Heads 0.5 in. diam., white, shining, glabrous, erect, ovate-lanceolate, acuminate; floral bracts shorter, oblanceolate, acute or cuspidate; receptacle small, glabrous. Sepals connate into a spathe split in front, irregularly 3-toothed, in male Stamens 3-6, anthers black. Sub sessile. Tepals 2, with rarely a filiform third one, boat-shaped, concave, falcately curved, acute, winged or keeled on the back, glabrous, the keel or wing spinulose. Ovary 2-3 lobed, style-branches 3, very short. Seeds oblong.

Flower and Fruit –September- December

Exsiccata: SRJS: 433

4. *Dichanthium foveolatum* (Del.) Roberty

Family-Poaceae

Habitat- In open grass land and on gravelly slope. *Locality-Balwada*(Khargone)

Herbs, 15-75 cm tall. Leaves linear-lanceolate, glabrous. Flower purplish, solitary terminal racemes, slender, silky, dense hairy. Spikelet sessile awned, pitted. Pedicel spikelets pitted. Lower glume membranous, linear lanceolate, 3.3 mm long, 5 - nerved, pitted, 2 -keeled; keels ciliate just above the middle; inflexed margins, apex subotuse. Upper glume linear, 3 nerved, acute at apex. Lower lemma empty, lanceolate, acute. Lodicules - 2. Stamens 3. Anthers 1.3-1.5 mm long.

Flower and Fruit –July- December*Exsiccata:* SRJS:3327**5. *Sporobolus piliferus* (Trin.) Kuntze**

Family-Poaceae

Habitat- In open fields on laterite rocky soil.*Locality-Tanda-Barud*(Khargone)*Field No.*-3243

Annual herbs, culms, terete, 10-30 cm tall, erect slender, glabrous, leaf sheath terete 2-6.9cm long hairy, and ligule. Leaf blade flat, linear, 1.8-9.8X0.2-0.5cm, setaceous. Panicles contracted, speciform, 2-7 cm long, pedicels unequal, rachis angular, filiform. Spikelet narrowly ovate-elliptic, glabrous, acute. Lower glume hyaline, ovate, glabrous, acute apex, nerveless. Upper glume membranous, ovate-elliptic, glabrous, 1-nerved, margins inflexed. Apex acute. Lemma ovate, membranous, acute. Palea ovate, hyaline, 2-keeled, acute. Lodicule 2. Stamens-3. Grains oblong – elliptic.

Flower and Fruit – August- October*Exsiccata:* SRJS: 3243**6. *Fimbristylis cymosa* R. Br.,**

Family- Cyperaceae

Habitat- along river side.*Locality-Tanda-Barud* (Khargone)*Field No.*-3235

Perennial herbs, 10-35 cm tall, tufted rhizomatous, caespitose stout. Stem terete, striate, rigid, and smooth. Leaves 5-14 cm long, linear, closely distichous near the base, ligule absent, basal, coriaceous, rigid, falcate, scabrid in the upper half, glabrous, scaberulous on margins. Flowers in terminal spikelets, involucre bracts 4-5, dilated, 0.5 -1.2 cm long, ellipsoid or ovoid, pale – brown or greenish-yellow. Glumes ovate, almost deltoid, thinly membranous, keel 3-nerved. Stamens 3, linear anthers. Nut broadly obovate, substipitate, compressed, dark reddish-brown to almost black.

<http://biosciencediscovery.com>*Flower and Fruit* –July – March*Exsiccata:* SRJS: 3235**7. *Lagenaria leucantha* (Duch.) Rusby.**

Family- Cucurbitaceae

Habitat- in hedges around fields.*Locality-Sangvi* (Khargone)

Large, climbing, herbs. Stem thick, softy pubescent, tendrils bifid. Leaves broadly ovate to orbicular, 10 - 40 cm across, cordate at base, angular trilobed, acute, softly white pubescent on both the surfaces, petioles 5-30 cm long. Male flowers on long axillary peduncles. Calyx tube 2-3 cm long, sepals narrow. Petals white obovate, 3-4 x 2-3 cm, emarginate at apex, tomentose. Anthers 8- 10 mm long, filaments 3-4 mm long. Calyx tube 2 - 3 mm long, ovary villous. Fruits 30-60 x 6- 15 cm, greenish – yellow turning brown. Seed obovate-oblong, white, truncate.

Flower and Fruit –September – January.*Exsiccata:* SRJS: 1251**8. *Berlaria acanthoides* Vahl.**

Family-Acanthaceae

Habitat- along river side.*Locality-Sanawad*

Shrub, 30-45 cm tall. Leaves 2.5 -5.4 x 0.8 -1 cm, oblanceolate or obovate – oblong, appressed – hairy. Flowers solitary or 2-6 fascicled, in 1.5 – 6 cm long spikes. Capsule 1-1.2 cm long, ellipsoid, glabrous. Seed broadly ovoid, compressed, hairy.

Flower and Fruit –August – October*Exsiccata:* SRJS:3932**9. *Acalypha lanceolata* Willd.**

Family-Euphorbiaceae

Habitat- On wet soil around fields and old walls.*Locality-Sanawad*

Annual, 6-18 in high, branched, branches clothed with long weak hairs. Leaves 0.5-1.5 X 0.25-3 in. ovate lanceolate, sub-acute, 3-5 nerved, petioles 0.5-1 in long, slender, hairy. Flower in short sessile axillary spike, bracts of female 1- flowered, hairy, ovary hispid. Styles lacinate. Capsule longer than bract, hispid with hair. Seeds ovoid, acute, smooth, pale yellowish-brown.

Flower and Fruit–August-December*Exsiccata:* SRJS 497**10. *Cleome burmanni* W. & A.**

Family-Capparaceae

Habitat- On rocky places and around cultivated fields.*Locality-Kalibith* (Khandwa) Annual Herb, 15-20 cm tall, Prickly branches, Leaves trifoliolate.

Leaflets obovate or elliptic, oblong, glabrous. Flower purple, in axillary solitary racemes, about 5 cm long. Capsules 3.6 – 4.1 cm long, cylindrical, glabrous, and striate. Seeds orange or reddish – brown with horizontal tuberculate ribs.

Flower and Fruit –July -October

Exsiccata: SRJS: 3043

11. Clerodendrum calamitosum L.

Family-Verbenaceae

Habitat-Along roadsides.

Locality-Raibidpura (Khargone)

Drooping, shrubs, 2-5m tall. Leaves ovate, 2.5-5×2.6-3.1 cm, sub truncate and slightly cunate at base, deeply and coarsely crenate-serrate, acute, pubescent on both the surfaces, petioles 1.5-2 cm long, pubescent. Flowers 5-10 in lax cymose panicles. Calyx 5, deeply divided, hairy outside, teeth narrow. Corolla tubular, often white, pubescent outside, tube 2.5 cm long, much longer than the lobes. Stamens exerted. Drupes globose, 1-1.5 cm, black.

Flower and Fruit –September- December

Exsiccata: SRJS: 3037

12. Indigofera duthei Drum ex Naik

Family-Fabaceae

Habitat- on waste land. Locality-Omkareshawar (Khandwa)

Herb, 30 - 100 cm tall. Stem clothed with white hairs. Leaves trifoliate, petioles 6-10 mm long, slender, stipule small, leaflets obovate –oblong, 1-2.5×0.4-1.2 cm, narrowed at base, rounded and apiculate at apex, hairy petioles 1.5mm long, terminal leaflet sessile. Flowers in dense axillary, short racemes; Pedicels very short. Calyx 2.5 - 3 mm long, hairy outside; teeth lanceolate. Corolla red, twice as long as the calyx; standard hairy on the back. Pods tetragonous 9-13 mm long, straight, with two narrow wings along each suture strongly deflexed, hairy. 2-4 seeded.

Flower and Fruit –September- November

Exsiccata: SRJS: 394

13. Desmodium scorpiurus (Sw.) Desv.

Family-Fabaceae

Habitat- Weed in shady places. Locality-Asirgarh (Burhanpur)

A straggling, climbing herb, clothed with minute hooked hairs. Leaves trifoliolate, leaflet 1.9 cm long and 1.1 cm broad, rounded, pubescent, ovate-oblong. Flowers blue, 4 mm long. Racemes up to 10 cm long. Pod linear, slightly turgid, densely hooked, hairy, 4-7 jointed, 5-8 seeded, segments twice as long as broad. A vigorous, widely adaptable

legume, it spreads quickly because its pods adhere to animals.

Flower and Fruit –July- December

Exsiccata: SRJS:1088

14. Mimosa rubicaulis Lam.

Family-Mimosaceae

Habitat- along stream banks. Locality-Barud

Shrubs, 50-90 cm long, branches prickles hooked. Leaves 10 - 18 cm long, main rachis grooved, prickly, stipules 5-6 mm long, pinnae 5-10 pairs, rachises without prickles. Leaflets 8-15 pairs, linear-oblong, obliquely rounded, obtuse, mucronate, glabrous above, pubescent beneath. Flowers in globose heads 1- 1.5 cm in diam. peduncles axillary, 2 - 3 cm long, pubescent, bracteoles solitary, linear spatulate, 1-1.5 mm long, ciliate at apex. Calyx minute, less than 1 mm long, teeth very short, ciliolate. Corolla pink 2.5-3 mm, lobes 4, ovate-oblong, acute. Stamens exerted. Pods 6-10 x1-1.5 cm, falcate, flat, joints 4-10, glabrous, smooth, and persistent. Seeds ovoid, compressed brown.

Flower and Fruit –August-October

Exsiccata: SRJS: 5040

15. Tephrosia leptostachya DC

Family-Fabaceae

Habitat- On slopes of hills .Locality-Rustampura(Khandwa)

Herbs, 30-60 cm tall. Stem woody, slender branches, hairy pubescent. Leaves pinnate, 5-8 cm long, petioles 2- 2.5 cm long stipules subulate, 2.5 mm long, acute. Leaflets 7-9, oblanceolate, 8-25 x 4-8 mm, emarginate and mucronate at apex, pubescent above, hairy. Petioles 2-3 mm long, bracts subulate, equal the tube. Corolla pink, 8-9 mm long. Pods oblong, 4-5 cm long, flattened, slightly curved towards the tip, pubescent. Seeds 3-6, reniform, brown.

Flower and Fruit –September –December

Exsiccata: SRJS: 1461

16. Tephrosia hamiltonii Drum.

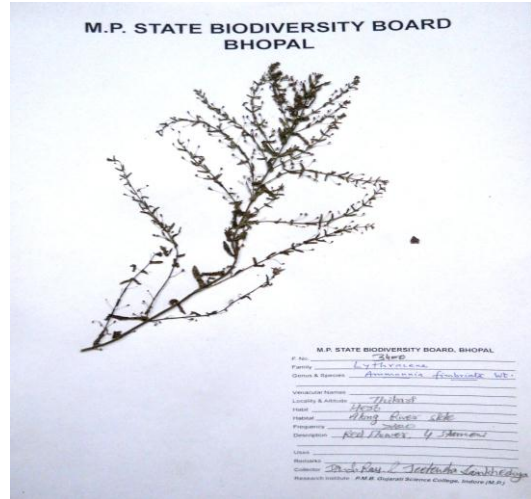
Family-Fabaceae

Habitat- Along road side and on waste land. Locality-Badwah (Khargone)

Shrubs, 30-60 cm tall, branches zigzag, angled, grey pubescent. Leaves 1 - 2.5 x 0.5 -1 cm pinnate, 6 -10 cm long, Petioles 6-10 cm long, stipules subulate, 1-nerved. Leaflets 9-15, oblanceolate, cuneate at base, emarginate and mucronate, glabrous, silky beneath, petioles 1-1.5 mm long. Flowers leaf apposed, in lax racemes solitary, 5-12 cm long, pedicels stout, bracts subulate, as long as the



Amberaboa ramosa (Roxb.) Jeffrey



Ammania fimbriata Wt.



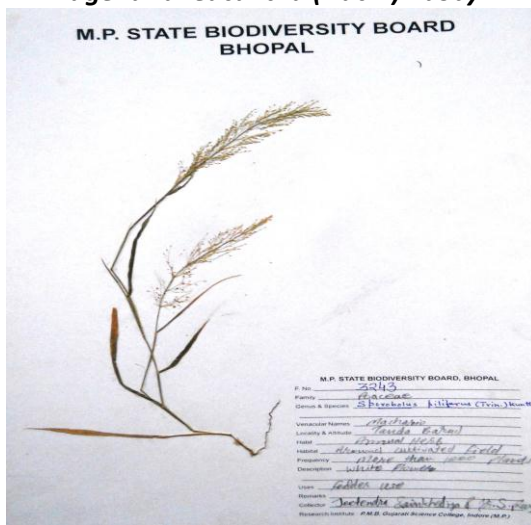
Eriocaulon minutum Hook. f.,



Lagenaria leucantha (Duch.) Rusby.



Tephrosia hamiltonii Drum.



Sporobolus piliferus (Trin.) Kuntze

pedicels calyx 3.5-4 mm long, thinly silky outside, teeth subulate, as long as the tube. Corolla deep pink, twice as long as the calyx. Pods linear, 2.5-4 cm long, apiculate, appressed hairy. Seeds 4-6, oblong, pale yellow, polished.

Flower and Fruit – July- January

Exsiccata: SRJS: 449

17. *Pedaliium murex* L.

Family- Pedaliaceae

Habitat- along river side. Locality-Bistan (Khargone)

Perennial herbs. Stem erect, pubescent. Leaves ovate to orbicular, glabrous above, glandular beneath, and coarsely dentate on the margins. Flowers in axillary solitary. Corolla yellow. Capsules pyramidal, ovoid, tetra-angled.

Flower and Fruit –July- December

Exsiccata: SRJS: 3931

18. *Impatiens lucida Heyne ex Hook. F.*

Family- Balsaminaceae

Habitat- along river side. Locality-Asirgarh

Herbs, 4-8 in high. Leaves whorled, 1.5-4 X 0.25-2 in, ovate or ovate-lanceolate, acuminate, crenate-serrate, glabrous or with a few scattered hairs above, cuneate, petioles 0.5-1.5 in long, slender, glabrous. Flowers small, in solitary, 0.25 in across. Sepals small, ovate, acute, standard orbicular-oblong horned and keeled at the back. Wings with broad, terminal lobes and scarcely and lateral ones. Spur very long, slender, incurved. Capsules 0.5 in long, ellipsoid, turgid in the middle, attenuated at both ends, glabrous.

Flower and Fruit –July-December

Exsiccata: SRJS: 1459

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