

Addition to the Flora of Sariska Tiger Reserve, Rajasthan

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ABSTRACT

The present study deals with new addition to the Flora of Sariska Tiger Reserve (STR), located in Alwar district of Rajasthan. A total of 73 unreported species under *7 families were recorded during the recent plant exploration from STR. A brief citation, a note on distribution, flowering & fruiting period and specimens examined have been provided here for each sp.

Keywords: New addition, Flora of Sariska Tiger Reserve, Rajasthan.

INTRODUCTION

The Sariska Tiger Reserve (STR) is situated in Alwar district, Rajasthan state between N27°04' to N27°45' latitude and E76°17' to E76°34' longitude. It is located in the hill range of Aravallis spreading over the tract preliminary from Mount Abu and culminating on Delhi ridge and a semi-arid part of Rajasthan (Rodgers and Panwar, 1988). The whole area of Sariska Tiger Reserve is 881.11 sq. km., which has been notified as critical tiger habitat (CTH) in the official gazette of the state, vide notification no. F3 (34) Forest/2007 dated December 28, 2007. Of these, reserved forest occupied 604.97 sq. km. of area and the protected area is 276.13 sq. km. During July 2012, a buffer area of 322.23 sq. km. surrounding some part of the Alwar territorial forest division in the north and part of Jamwa Ramgarh Wildlife Sanctuary in the south around CTH has been notified.

Consequently, the effectual entire area of sariska tiger reserve after July 2012 is 1203.63 sq. km. The reserve lies on Delhi-Jaipur state highway via Alwar, at a distance of 200 km from Delhi, 37 km from Alwar city and 110 km from Jaipur city. Ajabgarh, Alwar forest division, Sariska, Akbarpur, Talvriksh and Tehla are the main territorial ranges of tiger reserve. The altitude of Sariska varies from 540 to 777 m. The vegetation of tiger reserve falls under northern tropical dry deciduous forests and northern tropical thorn forest (Champion & Seth, 1968). *Anogeissus pendula* is the dominant tree species of the forests. Parmar (1985), Agarwal & Yadav (2005) and Dular (2015) have further added to our knowledge about the flora and floristic of the STR in Rajasthan. The accepted plants names, synonyms, basionyms and families are as per The Plant List (2014) as well as The International Plant Name Index (IPNI, 2014).

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MATERIALS AND METHODS

During 2015-19, five field exploration tours were undertaken to various part of the Sariska Tiger Reserve covering all seasons of the years. The authors were collected plant specimens along with their field data on habit, habitat, flowering & fruiting period and for the processing of herbarium specimens, the methodology described by Jain & Rao (1977) was followed. These specimens were identified with the help of floras (Hooker, 1872-1897; Sharma & Tiagi, 1979 & Shetty & Singh, 1987, 1991, 1993) and matching with reference voucher specimens and deposited in the BSJO. After critical study and thorough review of literature, this paper records 73 species belonging to 66 genera under 32 families. *7 of the families are new to the Sariska Tiger Reserve (Parmar, 1985).

In the present study, a brief citation, a note on distribution, flowering & fruiting period and specimens examined which includes locality, collector's name & field numbers have been provided here for each species.

SYNOPSIS OF FLORA

Parmar (1985) reported 403 indigenous and naturalized plant species belonging to 271 genera under 86 families. The present paper records 73 species as additions to the flora of Sariska Tiger Reserve. *Seven families and 41 genera are new to the Tiger Reserve. The present status of the Sariska Tiger Reserve comprises of 476 species belonging to 312 genera and 93 families.

ENUMERATION***POLYGALACEAE*****Polygala arvensis* Willd.**

In rocky habitats, common in open waste places.

Fl. & Fr.: July – Oct.

Specimen examined: STR: Talgate forest chowki, *M.K. Singhadiya & Ravi Prasad* 32150 (BSJO).

CARYOPHYLLACEAE**Polycarpha corymbosa* (L.) Lam.**

In sandy-loam to gravelly habitats, common weed in fallow fields, open places.

Fl. & Fr.: Aug. – Dec.

Specimens examined: STR: Near Karna ka Bass, Kala Khora by pass, *M.K. Singhadiya & Ravi Prasad* 32209, 32347 (BSJO).

***Spergula fallax* (Lowe) Krause**

In sandy-loam soil, frequent.

Fl. & Fr.: Dec. – March.

Specimens examined: STR: Chota Bhrahtri, Baletha village, *M.K. Singhadiya & Ravi Prasad* 31991, 32644 (BSJO).

ELATINACEAE**Bergia aestivosa* (Wight) Steud.**

In moist to sandy-loam habitats, rare.

Fl. & Fr.: Sept. – Feb.

Specimen examined: STR: Kishori by pass, *M.K. Singhadiya & Ravi Prasad* 32284 (BSJO).

MALVACEAE***Abutilon pannosum* (G. Forst.) Schtdl.**

In sandy – loam habitats, occasional.

Fl. & Fr.: Sept. – Dec.

Specimen examined: STR: Slopka forest block, *M.K. Singhadiya & Ravi Prasad* 32181 (BSJO).

ZYGOPHYLLACEAE***Fagonia indica* Burm. f.**

In sandy habitats, frequent.

Fl. & Fr.: Aug. - Feb.

Specimen examined: STR: Jaisinghpura, *M.K. Singhadiya & Ravi Prasad* 32624 (BSJO).

***F. schweinfurthii* (Hadidi) Nabil & Hadidi**

In sandy habitats, common in open places.

Fl. & Fr.: Jan. - Dec.

Specimen examined: STR: Ram Tilla-Jodhawas, *M.K. Singhadiya & Ravi Prasad* 32409 (BSJO).

CELASTRACEAE***Gymnosporia senegalensis* (Lam.) Loes.**

In gravelly habitats, frequent.

Fl. & Fr.: Nov. – Feb.

Specimen examined: STR: Near Sadar gate, *M.K. Singhadiya & Ravi Prasad* 32567 (BSJO).

FABACEAE***Alysicarpus hamosus* Edgew.**

In moist to sandy habitats, common in open places.

Fl. & Fr.: Aug. – Oct.

Specimen examined: STR: Tolawas, *M.K. Singhadiya & Ravi Prasad* 32351 (BSJO).

A. tetragonolobus Edgew.

In rocky to moist habitats, common on river beds.

Fl. & Fr.: Aug. – Oct.

Specimen examined: STR: Udainath Forest Block, M.K. Singhadiya & Ravi Prasad 32420 (BSJO).

Indigofera trifoliata L.

In rocky-gravelly habitats, common in open places.

Fl. & Fr.: Aug. – Nov.

Specimen examined: STR: Near Sariska Palace, M.K. Singhadiya & Ravi Prasad 32428 (BSJO).

Medicago polymorpha L.

In sandy-loam habitats, common.

Specimen examined: STR: Near Sariska Palace, M.K. Singhadiya & Ravi Prasad 32021 (BSJO).

Rhynchosia bracteata Baker

In sandy– loamy habitats, rare.

Fl. & Fr.: Aug. – Dec.

Specimen examined: STR Thanagazi-Alwar by pass (Duhar), M.K. Singhadiya & Ravi Prasad 32342 (BSJO).

Tephrosia candida (Roxb.) DC.

In rocky-gravelly habitats, frequent.

Fl. & Fr.: Oct. – Dec.

Specimen examined: STR: Talgate forest chowki, M.K. Singhadiya & Ravi Prasad 32145 (BSJO).

CAESALPINIACEAE**Chamaecrista mimosoides** (L.) Greene

In sandy-loam habitats, rare in wastelands.

Fl. & Fr.: Aug. – Nov.

Specimen examined: STR: Thanagazi-Alwar by pass (Duhar), M.K. Singhadiya & Ravi Prasad 32327 (BSJO).

COMBRETACEAE**Anogeissus sericea** Brandis var. **nummularia**

King ex Duthie “Indok dhok”

In rocky-gravelly habitats, rare in open scrub forest.

Fl. & Fr.: Sept. – Jan.

Specimens examined: STR: Indok-Near Kushalgarh tiraya, M.K. Singhadiya & Ravi Prasad 32034, 32360, 32591 (BSJO).

ONAGRACEAE**Ludwigia hyssopifolia** (G.Don) Exell

In moist habitats, rare in forest.

Fl. & Fr.: Aug. – Dec.

Specimen examined: STR: Karna ka Bass-Anicut, M.K. Singhadiya & Ravi Prasad 32193 (BSJO).

PASSIFLORACEAE*Passiflora foetida** L.

In gravelly habitats, rare in waste land.

Fl. & Fr.: July – Jan.

Specimen examined: STR: Umrain, M.K. Singhadiya & Ravi Prasad 32588 (BSJO).

CUCURBITACEAE**Ctenolepis garcini** (L.) C.B. Clarke

In gravelly habitats, rare on boundaries of farming fields.

Fl. & Fr.: Aug. – Oct.

Specimen examined: STR: Mitrawat Forest area, M.K. Singhadiya & Ravi Prasad 37557 (BSJO).

Dactyliandra welwitschii Hook. f. “Ankhpnutani”

In sandy-loam habitats, occasional.

Fl. & Fr.: Aug. – Dec.

Specimen examined: STR: Kala Rada, M.K. Singhadiya & Ravi Prasad 32213 (BSJO).

Melothria maderaspatana (L.) Cogn.

In mixed habitats, common on hedges and trees.

Fl. & Fr.: Aug. – Dec.

Specimen examined: STR: Talvriksha, M.K. Singhadiya & Ravi Prasad 37908 (BSJO).

Trichosanthes cordata Roxb.

In moist to gravelly habitats, frequent.

Fl. & Fr.: July - Oct.

Specimen examined: STR: Kabri anicut-Kakwadi, M.K. Singhadiya & Ravi Prasad 37549 (BSJO).

MOLLUGINACEAE**Glinus oppositifolius** (L.) DC.

In moist habitats, frequent.

Fl. & Fr.: Almost throughout the year.

Specimen examined: STR: Silishade, M.K. Singhadiya & Ravi Prasad 32524 (BSJO).

RUBIACEAE**Borreria articularis** (L. f.) F. N. Will.

In gravelly habitats, common in open places.

Fl. & Fr.: Aug. – Nov.

Specimens examined: STR: Near Sadar gate, Talgate forest chowki, Kala Rada, M.K.

Singhadiya & Ravi Prasad 32073, 32149, 32212 (BSJO).

ASTERACEAE

Dicoma tomentosa Cass.

In gravelly habitats, frequent in open places.

Fl. & Fr.: Sept. - March.

Specimen examined: STR: Near Talgate forest chowki, *M.K. Singhadiya & Ravi Prasad* 32135 (BSJO).

Glossocardia bosvallea (L. f.) DC.

In rocky-gravelly habitats, frequent in open places.

Fl. & Fr.: July – Oct.

Specimen examined: STR: Talgate forest chowki, *M.K. Singhadiya & Ravi Prasad* 32147 (BSJO).

Gnomophalium pulvinatum (Delile) Greuter

In mixed habitats, frequent in dried ponds.

Fl. & Fr.: Oct. – April.

Specimen examined: STR: Sarsa Devi temple-Dam area, *M.K. Singhadiya & Ravi Prasad* 32041 (BSJO).

Grangea maderaspatana (L.) Poir.

In moist to gravelly habitats, occasionally in wasteland.

Fl. & Fr.: Almost throughout the year.

Specimens examined: STR: Tahla talab, Sarsa Devi temple-Dam area, Udainath forest area, *M.K. Singhadiya & Ravi Prasad* 32037, 32472, 32635 (BSJO).

Pulicaria angustifolia DC.

In sandy habitats, frequent.

Fl. & Fr.: Oct. – Jan.

Specimen examined: STR: Thanagazi-Alwar by pass (Tolawas), *M.K. Singhadiya & Ravi Prasad* 32602 (BSJO).

P. crispa (Forssk.) Benth. & Hook. f.

In sandy habitats, occasional.

Fl. & Fr.: Sept. – March.

Specimens examined: STR: Thanagazi-Alwar by pass (Duhar), Vanpal Naka-Ajabgarh, *M.K. Singhadiya & Ravi Prasad* 32338, 31914, 32602 (BSJO).

Verbesina encelioides (Cav.) Benth. & Hook ex Grey

In rocky habitats, common in waste land, open forest.

Fl. & Fr.: July - Oct.

Specimens examined: STR: Near Sadar gate, Sariska - Thank You Board, *M.K. Singhadiya & Ravi Prasad* 32066, 31955 (BSJO).

*PRIMULACEAE

Anagallis arvensis L.

In sandy-loam habitats, common in moist places.

Fl. & Fr.: Dec. - March.

Specimens examined: STR: Tahla talab, Vanpal Naka-Ajabgarh, *M.K. Singhadiya & Ravi Prasad* 32042, 31913 (BSJO).

BORAGINACEAE

Coldenia procumbens L.

In moist to clayey – loam soil, occasional.

Fl. & Fr.: Aug. – April.

Specimens examined: STR: Ghanka anicut, Tahla talab, *M.K. Singhadiya & Ravi Prasad* 32225, 32542 (BSJO).

Heliotropium ovalifolium Forssk.

In moist habitats, frequent.

Fl. & Fr.: Almost throughout the year.

Specimen examined: STR: Tahla talab, *M.K. Singhadiya & Ravi Prasad* 32546 (BSJO).

Sericostoma pauciflorum Stocks ex Wight

On sand dunes, frequent.

Fl.: Aug. – Sept.

Fr.: March – April.

Specimen examined: STR: Thanagazi-Dular By pass, *M.K. Singhadiya & Ravi Prasad* 31964 (BSJO).

CONVOLVULACEAE

Ipomoea obscura (L.) Ker.-Gawl.

In sandy to gravelly habitats, common.

Fl. & Fr.: July – April.

Specimen examined: STR: Mansa Mata Mandir- Near Bhangarh, *M.K. Singhadiya & Ravi Prasad* 37567 (BSJO).

Merremia tridentata (L.) Hall. f. subsp. **tridentata** "Hiran Khori"

In sandy – loamy soil, rare in fallow fields.

Fl. & Fr.: Aug. – Nov.

Specimen examined: STR: Silishade-Doha, *M.K. Singhadiya & Ravi Prasad* 32005 (BSJO).

SOLANACEAE

Lycium edgeworthii Dun.

In sandy to gravelly habitats, frequent.

Fl. & Fr.: Sept. – Dec.

Specimen examined: STR: Thanagazi-Alwar by pass, *M.K. Singhadiya & Ravi Prasad* 32310 (BSJO).

SCROPHULARIACEAE

Striga angustifolia (D. Don) Saldanha

On sandy soils, common in waste places.

Fl. & Fr.: Aug. – Oct.

Specimen examined: STR: Tolawas, *M.K. Singhadiya & Ravi Prasad* 32352 (BSJO).

PEDALIACEAE

Pedaliium murex L.

In sandy-loam habitats, fairly common in dried up tanks and ponds.

Fl. & Fr.: Aug. – Dec.

Specimen examined: STR: Thanagazi-Alwar by pass, *M.K. Singhadiya & Ravi Prasad* 32322 (BSJO).

ACANTHACEAE

Hygrophila auriculata (Schum.) Heine

In rocky – gravelly habitats, rare in open forests.

Fl. & Fr.: Aug. – Dec.

Specimens examined: STR: Kalighati towards Pandupole, Sarsa Devi temple-River belt, *M.K. Singhadiya & Ravi Prasad* 32167, 32627 (BSJO).

Justicia prostrata (Roxb. ex Clarke) Gamble

In rocky habitats, occasional in open places.

Fl. & Fr.: Sept. - March.

Specimen examined: STR: Near Sadar gate, *M.K. Singhadiya & Ravi Prasad* 32064 (BSJO).

Lepidagathis bandraensis Blatt.

In rocky – gravelly habitats, frequent.

Fl. & Fr.: Almost throughout the year.

Specimen examined: STR: Thanagazi-Alwar by pass, *M.K. Singhadiya & Ravi Prasad* 32595 (BSJO).

Ruellia tuberosa L.

In rocky – gravelly habitats, frequent in wastelands.

Fl. & Fr.: Aug. – Dec.

Specimen examined: STR: Bhairu ghati, *M.K. Singhadiya & Ravi Prasad* 32174 (BSJO).

LAMIACEAE (LABIATAE)

Colebrookea oppositifolia Sm.

In moist to rocky – gravelly habitats, rare.

Fl. & Fr.: Jan. - June.

Specimens examined: STR: Naldeshwar Mahadev temple, *M.K. Singhadiya & Ravi Prasad* 32013, 32534, 32663 (BSJO).

Leucas urticifolia (Vahl) Sm.

In sandy-loam to gravelly habitats, common weed in open forest.

Fl. & Fr.: Sept. – Oct.

Specimens examined: STR: Karna ka Bass-Anicut, Pandupole forest block, *M.K. Singhadiya & Ravi Prasad* 32087, 32187 (BSJO).

AMARANTHACEAE

Alternanthera paronychioides A. - St. - Hill.

In moist habitats, common in waste places.

Fl. & Fr.: Almost throughout the year

Specimens examined: STR: Near Tahla talab, Sarsa Devi temple-Dam area, *M.K. Singhadiya & Ravi Prasad* 32039, 32471 (BSJO).

Nothosaerva brachiata (L.) Wight

In moist to sandy-loam habitats, frequent in water bodies.

Fl. & Fr.: Sept. – Dec.

Specimen examined: STR: Talvriksh forest block, *M.K. Singhadiya & Ravi Prasad* 32277 (BSJO).

EUPHORBIACEAE

Chrozophora rottleri (Geis.) Juss. ex Spreng.

In moist habitats, frequent.

Fl. & Fr.: Almost throughout the year.

Specimen examined: STR: Tahla talab, *M.K. Singhadiya & Ravi Prasad* 32548 (BSJO).

Croton bonplandianus Baill.

In rocky-gravelly habitats, common in waste places.

Fl. & Fr.: March – Aug.

Specimen examined: STR: Kakwadi Fort, *M.K. Singhadiya & Ravi Prasad* 32255 (BSJO).

Euphorbia dracunculoides Lam.

In moist – loamy soil, common weed in open places.

Fl. & Fr.: Oct. – Feb.

Specimen examined: STR: Silishade-Doba Bhagatpura, *M.K. Singhadiya & Ravi Prasad* 32620 (BSJO).

E. heterophylla L.

In moist to rocky – gravelly habitats, not common.

Fl. & Fr.: Almost throughout the year.

Specimens examined: STR: Talgate forest chowki, Karna ka Bass chowki, M.K. Singhadiya & Ravi Prasad 32151, 32207 (BSJO).

Flueggea leucopyrus Willd.

In gravelly habitats, frequent.

Fl. & Fr.: April – July.

Specimen examined: STR: Near Sadar gate, M.K. Singhadiya & Ravi Prasad 32447 (BSJO).

***CANNABACEAE**

Trema orientalis (L.) Blume

In gravelly habitats, occasional.

Fl. & Fr.: June – Dec.

Specimen examined: STR: Naldeshwar, M.K. Singhadiya & Ravi Prasad 32530 (BSJO).

HYDROCHARITACEAE

Ottelia alismoides (L.) Pers.

In aquatic habitats, rare in ponds, slow running water.

Fl. & Fr.: Almost throughout the year.

Specimen examined: STR: Sarsa Devi temple, M.K. Singhadiya & Ravi Prasad 32301 (BSJO).

***PONTEDERIACEAE**

Eichhornia crassipes (Mart.) Solms

In aquatic habitats, occasional.

Fl. & Fr.: Sept. – Dec.

Specimens examined: STR: Silishade, M.K. Singhadiya & Ravi Prasad 32384, 31993 (BSJO).

LEMNACEAE

Lemna perpusilla Torr.

In aquatic habitats, occasional in lake.

Fl. & Fr.: July – Oct.

Specimen examined: STR: Silishade, M.K. Singhadiya & Ravi Prasad 32389 (BSJO).

POTAMOGETONACEAE

Potamogeton nodosus Poir.

In aquatic habitats, frequent.

Fl. & Fr.: Nov. - June.

Specimen examined: STR: Tehla-Dabakan road, M.K. Singhadiya & Ravi Prasad 32509 (BSJO).

CYPERACEAE

Bulbostylis barbata (Rottb.) Clarke

In sandy to moist habitats, frequent in open forests.

Fl. & Fr.: Sept. – Dec.

Specimens examined: STR: Near Pacca Kunda, Thanagazi-Alwar by pass, M.K. Singhadiya & Ravi Prasad 32106, 32319 (BSJO).

B. densa (Wall.) Hand.-Mazz.

In gravelly habitats, occasional in open places.

Fl. & Fr.: Aug. – Dec.

Specimen examined: STR: Near Sadar gate, M.K. Singhadiya & Ravi Prasad 32078 (BSJO).

Fimbristylis ferruginea (L.) Vahl

In marshy habitats, frequent.

Fl. & Fr.: June – Dec.

Specimen examined: STR: Tehla-Dabakan road, M.K. Singhadiya & Ravi Prasad 32501 (BSJO).

Kyllinga bulbosa P. Beauv.

In rocky-gravelly habitats, fairly common in the open forest.

Fl. & Fr.: Aug. – Nov.

Specimen examined: STR: Karna ka Bass-Anicut, M.K. Singhadiya & Ravi Prasad 32085 (BSJO).

K. brevifolia Rottb.

In marshy to gravelly habitats, frequently in dam.

Fl. & Fr.: Aug. – Dec.

Specimen examined: STR: Silishade lake area, M.K. Singhadiya & Ravi Prasad 32383 (BSJO).

Schoenoplectiella roylei (Nees) Lye

In marshy habitats, occasional in open forest.

Fl. & Fr.: Sept. – Dec.

Specimen examined: STR: Kishori by pass, M.K. Singhadiya & Ravi Prasad 32285 (BSJO).

POACEAE

Aristida funiculata Trin. & Rupr.

In sandy to rocky-gracelly habitats, common in open forests.

Fl. & Fr.: Aug. –Dec.

Specimen examined: STR: Near Pacca Kunda, M.K. Singhadiya & Ravi Prasad 32108 (BSJO).

Cenchrus pennisetiformis Steud.

In gravelly habitats, frequent in waste land.

Fl. & Fr.: Almost throughout the year.

Specimen examined: STR: Sariska Thank You Board, M.K. Singhadiya & Ravi Prasad 31945 (BSJO).

Crypsis schoenoides (L.) Lam.

In moist habitats, rare.

Fl. & Fr.: June - Nov.

Specimen examined: STR: Tahla talab, M.K. Singhadiya & Ravi Prasad 32545 (BSJO).

Dichanthium foveolatum (Del.) Roberty

In sandy to rocky-gravelly habitats, fairly common in wasteland, open forest.

Fl. & Fr.: Aug. – Nov.

Specimen examined: STR: Near Pacca Kunda, M.K. Singhadiya & Ravi Prasad 32105 (BSJO).

Digitaria bicornis (Lam.) Roem. & Schult.

In gravelly habitats, frequent.

Fl. & Fr.: Aug. – Oct.

Specimen examined: STR: Sariska-Thank You Board, Thanagazi-Alwar By pass, M.K. Singhadiya & Ravi Prasad 32600 (BSJO).

Eragrostis gangetica (Roxb.) Steud.

In moist habitats, frequent.

Fl. & Fr.: Aug. – Nov.

Specimen examined: STR: Sarsa devi temple-river belt, M.K. Singhadiya & Ravi Prasad 32631(BSJO).

E. pilosa (L.) P. Beauv.

In sandy-loam to rocky habitats, common in waste land.

Fl. & Fr.: Aug. – Jan.

Specimens examined: STR: Karna Ka Bass-Anicut, Tarunda Forest Chowki, M.K. Singhadiya & Ravi Prasad 32092, 32102 (BSJO).

Paspalidium geminatum (Forssk.) Stapf

In moist-gravelly habitats, rare in the forest.

Fl. & Fr.: Sept. – Feb.

Specimen examined: STR: Karna ka Bass-Anicut, M.K. Singhadiya & Ravi Prasad 32086 (BSJO).

Phalaris minor Retz.

In moist to gravelly habitat, frequent.

Fl. & Fr.: Dec. - March.

Specimen examined: STR: Silishade, M.K. Singhadiya & Ravi Prasad 32000 (BSJO).

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