

Three species of family Fabaceae addition for flora of Rajasthan from Todgarh-Raoli wildlife sanctuary

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Abstract

The present paper deals with three species reported here for the first time and addition for flora of Rajasthan from Todgarh-raoli wildlife sanctuary i.e. *Desmodium procumbens* (Mill.) Hitch. var. *longipes* (Schindl.) B.G. Schumb.; *Indigofera suffruticosa* Mill. and *Sesbania canabina* (Retz.) Pers.

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INTRODUCTION

Fabaceae or legume family is the third largest family of the flowering plants in the world, known for its global distribution and immense economic importance. Legumes are distributed throughout the New and Old Worlds to the deserts. It represent approx. 640 genera and 18,000 species, under three subfamilies (Mimosoideae, Caesalpinioideae, Papilionoideae), encompassing a wide variety of plants like peas, beans, lentils, peanuts, soybeans, and alfalfa. This family is crucial for agriculture and human nutrition, providing a major source of protein, and few are reported for its medicinal importance, dyes, etc. (Harris, 2004).

India has represented 1,368 taxa species belonging to 174 genera (Mao & Dash, 2020). Out of which, 173 species belonging to 49 genera from Rajasthan (Shetty & Singh, 1987); 111 species belonging to 38 genera from Aravalli range (Otaghvari et al., 2015); 18 species

belonging to 15 genera from Todgarh-Raoli wildlife sanctuary (Kanther, 2019). Many researchers (Katewa et al., 2003; Sharma et al., 2005; Sharma & Katewa, 2007; Singh & Shrivastava, 2007; Tiagi & Aery, 2007; Sharma & Khanna, 2010; Kanther & Gena, 2012; Kanther, 2013, 2018, 2019; Sharma & Purohit, 2013; Kumar & Purohit, 2015; Kumar et al., 2017, 2019, 2020; Sharma, 2019; Sharma & Khandal, 2019; Purohit, 2019; Purohit, 2020; Kulloli et al., 2019; Purohit et al. 2020; Kulloli & Purohit, 2020, 2022; Purohit & Kulloli, 2021; Singh et al., 2022; Purohit et al. 2022, 2023, 2024, 2025a, 2025b; Purohit & Meena, 2025) have been reported various plants belonging to different families from Todgarh-Raoli wildlife sanctuary and surrounding area.

STUDY AREA

Todgarh-Raoli Wildlife Sanctuary is situated in three districts, viz. Rajsamand, Pali and Ajmer and lies between 73°40'–74°10' East longitudes

and 25°20'–26°0' North latitudes. Its covering an area of 495.27 km².

MATERIAL & METHODS

During the field survey of Todgarh-Raoli Wildlife Sanctuary (Rajasthan) from year 2015 to year 2019, the author came across some interesting plant species of family Fabaceae and collected their plant samples of from different three locations. After completion of process of preparation of herbarium, deposited in the Botanical Survey of India, Jodhpur (BSJO). After critical study and scrutiny of relevant literature (Blatter & Hallberg, 1920; Sharma & Tiagi, 1979; Shetty & Singh, 1987; Bhandari, 1990; Tiagi & Aery, 2007) and herbaria (BSJO, BSA, RUBL, JAC, BLAT, DCH, CAL), these plant samples were identified and reported here.

Plant species of family Fabaceae of Todgarh-Raoli wildlife sanctuary:

1. *Desmodium procumbens* (Mill.) Hitch. var. *longipes* (Schindl.) B.G. Schumb. Contr. Gray. Herb. 129. 8. 1940.

Stem terete, striate, diffuse, glabrous. Leaves trifoliolate, stipulate, petiolate; stipules 4–6 × 3–3.5 mm, auriculate at base, attenuate, minutely pilose on both surface. Petioles 1–3.3 cm long, sulcate, puberulent, leaf rachis 0.4–0.7 cm long; leaflets pilose on both side, ciliate on margins; terminal leaflets 2.3–6 × 1–3.6 cm, ovate-rhombic, apex obtuse to acute, base cuneate, the lateral similar, 1.7–4.5 × 0.8–2 cm, slightly oblique. Inflorescence rachis densely puberulent; pedicels 12–27 mm long, elongate, slender, slightly puberulent. Calyx teeth ciliate, the central lobe 1.5–2 mm long, the lateral teeth 1.3–1.5 mm long, the upper bifid lobe 1.3–1.5 mm long; standard 2–3.5 × 1.5–3 mm, obovate to flabellate, apex slightly retuse, base cuneate; wings 2–2.5 × 1 mm, oblong, obtuse, scarcely auriculate, short unguiculate; keel 2.5–3.5 × 0.8–1 mm, scythe shaped, apex truncate, base unguiculate. Loment 3 × 2 mm, articles uncinulate puberulent. [Fig. 1: A to E]

Fl. & Fr.: July – Sept.

Specimen examined: Rajasthan, Todgarh-Raoli wildlife sanctuary, Raoli Range, Ganeshpura, 02 Sep. 2018, 25°46.504'N & 73°57.733'E, 492m, C.S. Purohit 33546.



Figure 1: *Desmodium procumbens* (Mill.) Hitch. var. *longipes* (Schindl.) B.G. Schumb.: (A)– Plant in natural location of Ganeshpura, Raoli range of sanctuary; (B)– Close-up of inflorescence; (C)– Flower arrangement on inflorescence axis; (D)– side view of flower; (E)– Flower buds & flowers

2. *Indigofera suffruticosa* Mill. Gard, Dict. ed. 8.

Indigofera no. 2. 1768.

An erect, woody, under shrubs, 2 m high. Stems grayish green with 2-branched trichomes. Leaves 10 cm long, 11-19-foliolate; leaflet 1-4 × 0.5-1 cm, oblanceolate, base cuneate, apex acute. Petiole 1.5 cm long. Stipules 4 mm long, triangular. Flowers in densely short axillary raceme, 3 cm long. Bracts 2 mm, linear, caducous. Calyx 1.5 mm long, hairy outside; teeth triangular. Corolla 5 mm long, red; standard 4.5 mm long, dense brown trichomes on outer surface; keel as long as wings, hairy. Stamens 10, diadelphous (9+1) condition, 3-4 mm long tube; anthers globose. Ovary densely hairy, style with capitate stigma. Legume 1.5 cm long, falcate on upper side, hairy. Seeds 6-8, 1.5 mm long, cylindric, brown. [Fig. 2: D to F]

Fl. & Fr.: July – November.

Distribution: Todgarh-Raoli wildlife sanctuary (Dana baba temple).

Specimen examined: Rajasthan, Todgarh-Raoli wildlife sanctuary, Bijajiguda Range, Dana Baba Temple, Pali, 08 Aug. 2016, 25°43.229'N & 73°55.794'E, 444m, C.S. Purohit 33122;

3. *Sesbania cannabina* (Retz.) Poir. in Lam., Encycl. 7: 130. 1806.

Annual herb, 3.5 m high. Stems green, smooth, with light greenish stripes, Stipules lanceolate, caducous. Leaves up to 60-foliolate; leaflet 1-4 × 0.3-0.6 cm, opposite, linear-oblong, base rounded, apex truncate, mucronate. Flowers in lax racemes, peduncle slender, sparsely appressed villous. Bract linear-lanceolate, caducous. Calyx 4 mm long, campanulate; teeth triangular, apex acute. Corolla yellow; standard 9-10 mm, with a ca. 2 mm claw, suborbicular, base subrounded; wings 10 mm long, oblong, base auriculate, middle with dark grayish brown spots; keel triangular, shorter than wings, apex obtuse. Anthers ovate to oblong. Pistil glabrous; stigma capitate. Legume 15 cm long, terete, slightly curved, dark brown stripes, 20-seeded. Seeds 4 mm long, greenish brown, terete. [Fig. 2: A to C]

Fl. & Fr.: Aug. – Nov.

Status: Rare.

Distribution: Todgarh-Raoli wildlife sanctuary (Dhareshwar Mahadev).

Specimen examined: Rajasthan, Todgarh-Raoli wildlife sanctuary, Jojawar Range, Dhareshwar Mahadev, 02 Sept. 2018, 25°47.823'N & 73°54.790'E, 365m, C.S. Purohit 33551.



Figure 2: *Sesbania cannabina* (Retz.) Poir.: (A)– Plant in natural location of Dhareshwar mahadev, Jojawar range of Sanctuary; Close-up of Flowers (C)– Back view of flower; *Indigofera suffruticosa* Mill.: (D)– Plant in natural location of Dana baba temple, Bijajiguda range of Sanctuary; (E)– Leaves with inflorescence; (F)– back view of flower & leaf

RESULT AND DISCUSSION

Dominant family of Todgarh-Raoli wildlife sanctuary represent is Poaceae where it also dominant in Rajasthan state. Family Fabaceae represent most dominant for Aravalli range and second dominant family for Rajasthan state as well as in Todgarh-Raoli wls. While working on the floristic diversity of Todgarh-Raoli wildlife sanctuary, Rajasthan during 2015 – 2019 author demarcated three population of 15 – 20 individuals each at different three new localities of genus *Desmodium* (Ganesh pura, Raoli range, Ajmer district), *Indigofera* (Dana Baba Temple, Bijajiguda range, Pali district) and *Sesbania* (Dhareshwar mahadev, Jojawar range, Pali district) and collected their herbarium samples. After critical study, scrutiny of literature and study in various herbaria, these specimens are identified as *Desmodium procumbens* (Mill.) Hitch. var. *longipes* (Schindl.) B.G. Schumb.; *Indigofera suffruticosa* Mill. and *Sesbania canabina* (Retz.) Pers. It reports these new distributional sites from rocky area with twenty individuals each in core zone of sanctuary. All three species also first time report and addition for flora of Rajasthan state.

CONCLUSION

Present paper deals with three specie i.e. *Desmodium procumbens* var. *longipes*; *Indigofera suffruticosa* and *Sesbania canabina* are reported first time and addition for flora of Rajasthan from Todgarh-Raoli wildlife sanctuary, Rajasthan.

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REFERENCES

- Bhandari M.M. (1990). Flora of the Indian desert. Scientific Publishers, Jodhpur.
- Blatter E. and Hallberg F. (1920). The flora of the Indian desert (Jodhpur and Jaisalmer). *J. Bomb. Nat. Hist. Soc.* 26 (4): 971.
- Jain S.K. and Rao R.R. (1976) A Hand Book of Field and Herbarium Methods. Today and Tomorrow's Printers and Publishers, New Delhi.
- Harris S. (2004). Tropical forests: Woody legumes (except Acacias). *Encyclopedia of Forest Sciences, Elsevier.* 1783 – 1797. DOI: 10.1016/b0-12-145160-7/00198-8.
- Kanther R.P. (2013). Traditional wound healing plants of Todgarh-Raoli Wild life Sanctuary Rajasthan, India. *Indian J. Env. Sci.* 17(2):105-107.
- Kanther R.P. (2018). Rare and Threatened medicinal plants of Todgarh-Raoli wildlife sanctuary, Rajasthan, India *J. India. Bot. Soc.* 97(3-4): 59 – 64.
- Kanther R.P. (2019). Dominant flora of Todgarh-Raoli wildlife sanctuary, Rajasthan, India. *J. Indian Bot. Soc.* 98(1-2): 59 – 70.
- Kanther R.P. and Gena D. (2012). Ethno-medico-botany of Todgarh-Raoli wildlife sanctuary, Rajasthan, India. *J. Phytol. Res.* 25 (2): 249 – 256.
- Katewa S.S., Chaudhary B.L., Jain A. and Galav P. (2003). Traditional uses of plant biodiversity from Aravalli hills of Rajasthan. *Ind. J. Trad. Knowl.* 2(1): 27 – 29.
- Kulloli R.N. and Purohit C.S. (2020). *Habenaria gibsonii* var. *foetida* (Orchidaceae) – An addition to the flora of Rajasthan. *Species* 21(67): 202 – 207.
- Kulloli R.N. and Purohit C.S. (2022). Assessment of IUCN threat category and present population status of *Ammannia desertorum* Blatt. & Hallb. in Indian desert. *International Journal of Agriculture Sciences*, 13(2): 102 – 108.
- Kulloli R.N., Purohit C.S., Kumar R. and Maina V. (2019). Notes on occurrence of *Anticharis glandulosa* Asch. var. *caerulea* Blatt. & Hallb. ex Sant. (Scrophulariaceae) a rare endemic plant of Indian desert. *PHYTOTAXONOMY* 18: 65–68.

- Kumar S. and Purohit C.S. (2015). Conservation of Threatened Desert Plants. pp-148, Scientific publishers, Jodhpur.
- Kumar S., Purohit C.S. and Kulloli R.N. (2017). Conservation of Threatened plants in Desert Botanical Garden, Jodhpur. In Book- Indian Botanic Gardens- Role in Conservation (Eds.: P Singh & SS Dash), BSI Publication, 406-425.
- Kumar R., Purohit C.S., Kulloli R.N. and Maina V. (2019). *Begonia picta* Smith (Begoniaceae) – new record for Rajasthan from Mount Abu Wildlife Sanctuary. The Begonian Nov./Dec.: 214-217.
- Kumar S., Purohit C.S. and Kulloli R.N. (2020). *Aloe trinervis* sp. nov. A new succulent species from Indian Desert (Asphodelaceae). *Journal of Asia Pacific Biodiversity* 13(2): 325 – 330. <https://doi.org/10.1016/j.japb.2020.03.001>.
- Mao, A.A. & Dash, S.S. (2020). Flowering plants of India: An annotated checklist (Dicotyledons), Botanical Survey of India 1: 165 - 176.
- Otaghvari A.M., Yadav S.R., Raina S.N. and Uniyal P.L. (2015). *Vegetational wealth of Aravalli Rajasthan*. Scientific Publishers, Jodhpur.
- Plants of the World Online, Kew Royal Botanic Garden, (2025). <https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:30000208-2#source-KB>; (assessed on October 30, 2025)
- Purohit C.S. (2019). A note on some rare plants of Rajasthan reported from Todgarh-Raoli wildlife sanctuary. *Int. J. Usuf. Mngt.* 20: 36 – 45.
- Purohit, C.S. (2020). Biodiversity of Todgarh-Raoli wildlife sanctuary with GIS mapping of EET species. Botanical Survey of India, Kolkata. 581pp. (In Press).
- Purohit C.S. and Kumar R. (2020). A review on genus *Calligonum* L. (Polygonaceae) from India and report *Calligonum crenitum* an addition for Flora of India. *Journal of Asia Pacific Biodiversity* 13(2): 319 – 324. <https://doi.org/10.1016/j.japb.2020.03.002>.
- Purohit C.S., Jain K., Bharti A., Ram R. and Prasad R. (2020). *Tephrosia pentaphylla* (Roxb.) G. Don.: Recollection from Todgarh-Raoli wildlife sanctuary, Rajasthan. *Indian Journal of Arid Horticulture* 2(1 & 2): 79 – 80. (Published on April 2022).
- Purohit C.S. and Kulloli R.N. (2021). *Indigofera jaisalmerica* sp. nov. (Fabaceae): A new species from Indian desert. *Journal of Asia Pacific Biodiversity* 14(4): 628 – 635. <https://doi.org/10.1016/j.japb.2021.09.006>
- Purohit C.S., Kumar R. and Kulloli R.N. (2022). Rediscovery of *Strobilanthes halbergii* Blatt. (Acanthaceae) and endemic species after a century from Mount Abu, Rajasthan, India. *PHYTOTAXONOMY*, 22 – 27. (Published online on Feb. 2023).
- Purohit C.S., Kumar A. and Meena S.L. (2023). GIS mapping and IUCN Assessment of the Threatened and Endemic species of Indian desert, Rajasthan. Abstracts published in Proceeding of 43INCA International Congress held on 06-08 Nov. 2023, page 72, organized by RRSC, ISRO at Jodhpur.
- Purohit C.S., Kumar A. and Meena S.L. (2024). Discovery of New Population of an Endemic species *Euphorbia jodhpurensis* Blatt. & Hallb. from Indian Desert, Rajasthan, India. *J. New. Biol. Rep.* 13(1): 9 – 12.
- Purohit C.S., Kumar A. and Meena S.L. (2025)a. Desert species *Tribulus cistoides* (Zygophyllaceae) rediscovery in India after 150 years. *Turczaninowia* 28, 3: 43–50.
- Purohit C.S., Kumar A., Meena S.L. (2025)b. A Note on Range Extension of *Mazus surculosus* D. Don from Indian Desert and Addition for Flora of Rajasthan, India. *International Journal on Emerging Technologies*, 17(2): 105–109.
- Purohit C.S. and Meena S.L. (2025). Reinstatement of the Name *Alysicarpus monilifer* var. *venosa* (Fabaceae) and their IUCN Red List Assessment. *Species*, 26: 1–10.
- Sharma A. and Khanna V. (2010). Tadgarh-Raoli Destination with immense potential for Eco-tourism. *South Asian Journal of Tourism and Heritage* 3(1): 152 – 157.

- Sharma S. and B. Tiagi (1979). *Flora of North-East Rajasthan*. 265 – 271. New Delhi.
- Sharma S.C. and Purohit C.S. (2013). Grasses of North west Rajasthan, pp- 234 Madhu Publication, Bikaner.
- Sharma S.K. (2019). Medicinal plant diversity in Aravallis. *Int. J. Phytocos. Nat. Ingrid.* 6: 1 – 3.
- Sharma S.K. and Khandal D. (2019). Reporting of New plant species to the flora of Rajasthan. *Indian J. Env. Sci.* 23(2): 51 – 52.
- Sharma S.K., Katewa S.S. and Bhatnagar C. (2005). New Records of plants from Rajasthan. *ZOO's PRINT journal* 20(9): 1984 – 1985.
- Sharma, S.K. and Katewa S.S. (2007). Addition to the Flora of Rajasthan from Southern Aravallis. *ZOO'S PRINT Journal* 22(10): 2867 – 2868.
- Shetty, B.V. & Singh, V. (1987). *Flora of Rajasthan* Vol-2, Botanical Survey of India, Howrah.
- Singh M., Bharti A., Purohit C.S. and Tanwar B. (2022). First time sighted two snake species from Todgarh-Raoli wildlife sanctuary, Rajasthan, India. *Indian Journal of Theoretical & Applied Science* 14(1): 16 – 18.
- Singh V. and Shrivastava A. (2007). *Biodiversity of Ranthambhore Tiger Reserve, Rajasthan*. Scientific Publishers, Jodhpur.
- Tiagi Y.D. and Aery N.C. (2007). *Flora of Rajasthan (south & south-east region)*. Himanshu Publications, Udaipur, India.