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Solanum violaceum ortega (Solanaceae): A new species for Rajasthan state, India

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Abstract
During botanical exploration of Mount Abu (Sirohi), a new species of Solanum has been reported. After studying allied literature, it has been found that the collected specimen belongs to *Solanum violaceum* Ortega (Solanaceae). This species has never been reported till date in the State of Rajasthan. The distinguishing morphological characters, phenological data, distribution photographs, and illustrations for easy identification of the species are discussed here.

Keywords: Mount abu, solanaceae, *solanum violaceum*, Rajasthan

Introduction

Rajasthan is the largest state of India and well known for its bio-geographical habitats *viz*. arid and semi-arid. The state of Rajasthan is located between 23º3' and 30º12' N latitude and 69º30' and 78º17' E longitude. Within these arid and semi-arid habitats, around 2412 different flowering plants are recorded. These unique habitats always attract plant lovers for its floral diversity. Hence various papers on plants diversity with their ecological and taxonomical information are available: Bhandari (1978) [1]; Puri *et al*. (1964) [2]; Sharma & Tiagi (1979) [3]; Shetty & Singh (1991) [4]; Sharma *et al*. (2005) [5]; Singh & Singh (2006) [6] and Singh & Srivastava (2007) [7]. Kotia (2008) [8] and Kotia *et al*. (2008) [9] has also published a detailed floristical account of the natural habitat in Rajasthan, India. Similarly, in recent years Kotia (2014) [10], Yadav & Meena (2016) [11], Tiwari *et. al*. (2016) [12], Dhakad *et al*. (2019) [13], Kumar *et al*. (2020) [16] and Solanki *et al*. (2020) [16] have further described more taxonomical research work for Rajasthan.

The members of Solanaceae family are distributed in tropical and sub-tropical regions. Solanaceae represent around 100 genera and 2500 species broadly distributed all over the world. Within India around 29 genera and 108 species are recorded (Kalidas & Panda, 2019) [14]. In India, the genus *Solanum* is represented by 49 species out of which Only 12 species have been reported from Rajasthan (Kumar *et al*., 2020 and Solanki *et al*., 2020) [16, 17].

Material and methods

During botanical excursion in different parts of Rajasthan, the plant specimens were collected from Mount Abu (Figure-1). Mount Abu is the highest peak of the Aravalli range within the state of Rajasthan. It is the South-Western part of Rajasthan. Geographical location of the city is between 24º36' north latitude and 72º42' east longitude. All the specimens were collected from the Guru-Shikhar and near the Javai pond. On detailed examination of the morphological characteristics of the specimen and with the help of various literature it has been concluded that these specimens belong to *Solanum violaceum* Ortega. For identification detailed morphological description, phenological data, field illustrations (Fig.-2) and photographs (Fig.-3) are mentioned. The specimens have been deposited in the RUBL.

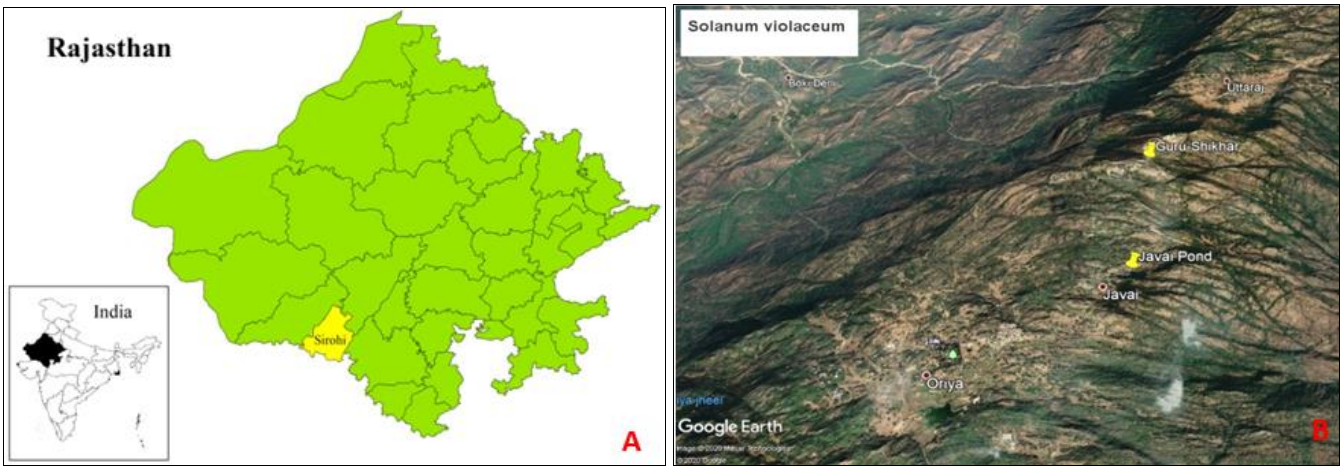

Fig 1: A. Showing the Map location of *Solanum violaceum* Ortega collection point from Rajasthan State B. Google Earth image showing plant collection point

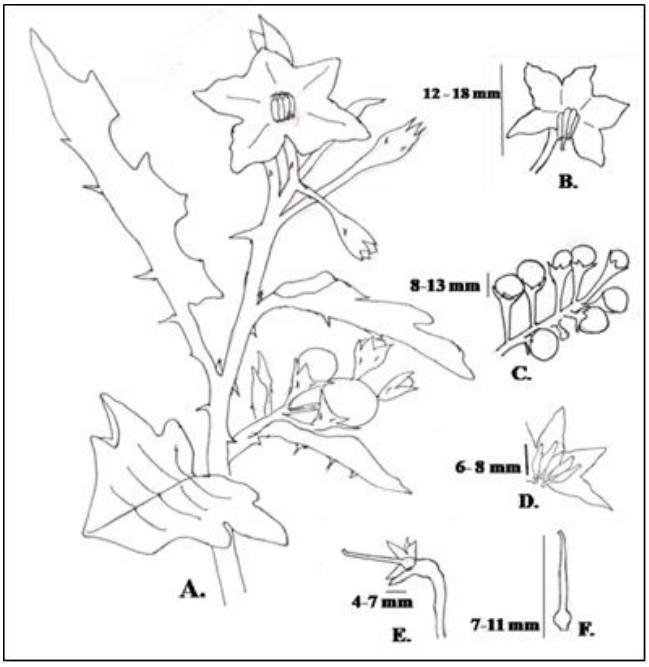

Fig 2: Illustrations of *Solanum violaceum* Ortega A. Twig B. Single Flower C. Inflorescence with developing fruits D. Corolla with epipetalous stamens E. Gynoecium with persistent calyx F. Gynoecium

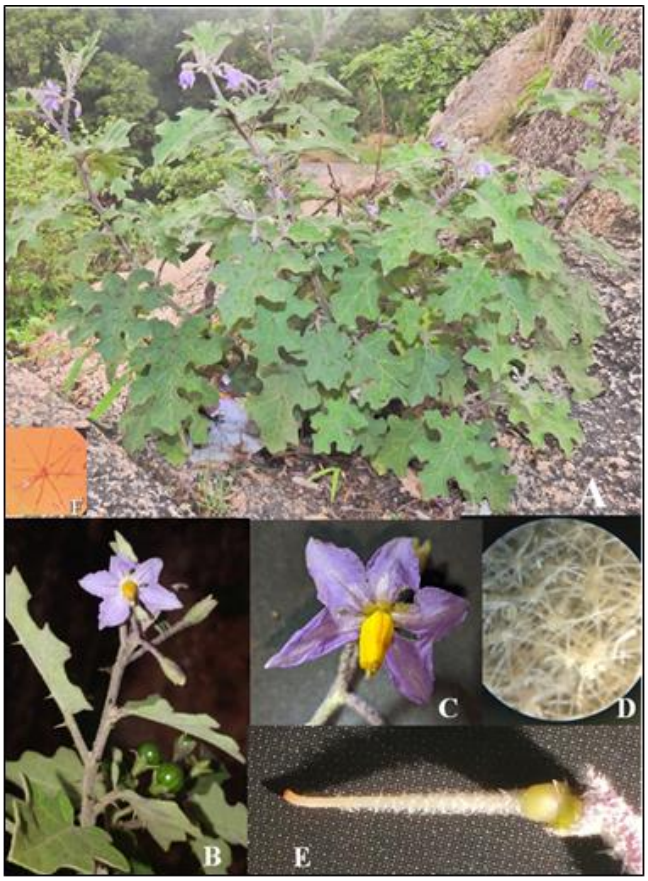

Fig 3: *Solanum violaceum* Ortega A. Plant in natural habitat, B. Twig, C. Single flower, D. Stellate hairs E. Gynoecieum F. Single stellate hair

Taxonomic description

Solanum violaceum Ortega

Perennial, under shrubs or shrubs, upto 0.5-1.5 m height. Stem- erect, branched, slender or terete, bluish pink, 5-11 rayed meticulous stellate hairs, recurved prickles with flatbase, 4-8 mm long and 1-7 mm wide at base. Leaves- simple, alternate1.5-15 × 1.5-10cm, leaf blade ovate or oblong, base oblique, apex acute, margin deeply lobed, 2-4 lobes on each side of the margin, lobes obtuse or rounded, abaxially tomentose with grey or white stellate hairs, sparsely stellate adaxially, straight needle like prickles 4-10 mm long on primary and secondary veins on both sides of the leaf. Petiole- 1-3cm long, prickles with stellate tomentose. Inflorescence- extra axillary scorpioid cymes, 2-7 cm long, the axes moderately stellate-pubescent with straight prickles, very short peduncle, 1-10 mm long, rachis 1-9 cm long, pedicels 1-2 cm long, stellate tomoentose with prickles. Flowers- 1.5-2 cm diam., 6-15 flowered; Calyx - 4-7 mm diam., pale green, densely whitish stellate tomentose with prickles, 5 lobed; 5-6 mm long, lanceolate, Corolla- blue-purple, 15-20 mm diam., 5 lobed; lobes ovate-lanceolate, 10-13 mm long, apex cunate to acute. Stamens- 5, 6-8 mm long, epipetalous, filaments ca. 1 mm long, anther 6-7 mm long, yellow, basifixed, apical pores (poricidal) dehiscent. Ovary- ovoid, less than 1.5 mm long, glabrous, Style -7-11 mm long, slender, slightly curved, glabrous with densely stellate hairs (mid to base), exserted 1.5-3 mm beyond the anthers; stigma capitate, green. Berries- globose, 0.8 - 1.3 cm diam., immature pale green to yellow, orange red at maturity, shining. Seeds - ca. 10-15 per berry, sub-orbicular (sub-discoid), 3 mm diam., pale brownish yellow, concave, compressed (Figure-2 and Figure- 3).

Flowering and Fruiting: July- December.

Specimens examined: Dr. Amit Kotiya; species collected from Mount Abu (Sirohi) (RUBL-211747, Date: 10/12/2019) from Rajasthan, India.

Acknowledgements

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