

NOTE ON EXTENDED DISTRIBUTION OF *SOLANUM VIARUM* (SOLANACEAE) TO THE STATE OF MAHARASHTRA, INDIA

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ABSTRACT

Solanum viarum Dunal (Solanaceae) popularly called as 'Tropical soda apple or Sodom apple' widely distributed in tropical and subtropical countries. The present study reports the occurrence of *S. viarum* in the state of Maharashtra.

Keywords: Maharashtra, Solanaceae, *Solanum viarum*, Taxonomy, Tropical soda apple

INTRODUCTION

Solanaceae, popularly known as potato or nightshade family, includes 103 accepted genera (POWO, 2025) and over 2000 species spread across tropical and subtropical regions of Africa, Australia, and sections of Asia, including China, India, and Japan (Kaunda and Zhang, 2019). Most of the genera are agriculturally important, and several of these are cultivated as fruit for humankind. (Knapp, 2002).

The genus *Solanum* L. is a cosmopolitan genus (Saha and Datta, 2017) and economically important (Frodin, 2004). It is economically important genus, comprising globally significant and widely cultivated crops such as *Solanum melongena*, *Solanum lycopersicum*, and *Solanum tuberosum* (Saha and Datta, 2017). It includes 1237 accepted species (POWO, 2025), representing about 75% of the solanaceae family. Most species occur in tropical regions, with only a few extending into colder parts of the world. Species of *Solanum* commonly grow well in moist habitats and along drainage lines (Zhang *et al.*, 2019). About 48 species of this genus are reported from India (Kumari, 2004).

Solanum viarum commonly called 'tropical soda apple' is a tiny, South American shrub that has spread to Florida's pastures and conservation zones (Diaz *et al.*, 2014). It flourishes in overgrazed or drought-affected pastures and invades plantation crops as well as natural environments such as forests and riverbanks. Plant is valued for solasodine, an alkaloid used to produce steroid hormones for treating diseases such as cancer, Addison's disease, and arthritis, and for making contraceptives (Satyabrata *et al.*, 2000). The leaves are generally avoided by animals, the fruits are readily eaten and dispersed by cattle and other mammals (Wunderlin *et al.*, 1993). Due to the rapid population explosion in Florida and the concerns of livestock producers, tropical soda apple was placed on the Florida Noxious Weed List in late February 1994 and was placed on the Federal Noxious List in 1995 (Welman, 2023). The authors collected a few *Solanum* specimens from Shendi village in the Bhandardara, Harishchandragad ranges of Maharashtra. The present communication reports the occurrence of *Solanum viarum* Dunal., an invasive species previously unfamiliar to the flora of Maharashtra. Detailed morphological observations and ecological information are provided in the manuscript.

MATERIALS AND METHODS

The specimens of *Solanum* were collected from Bhandardara range, district Ahilyanagar, Maharashtra and their identification and distribution were confirmed using relevant taxonomic literature (Xavier & Knapp 2022) Herbarium specimens were prepared following Sharma and Rao (1990). The photographs of all the morphological parts were captured using a Canon EOS 500D camera. The photoplate was designed using Microsoft Office PowerPoint Presentation (2019).

Solanum viarum Dunal Prodr. 13(1): 240 (1852).

Common names: ‘Tropical soda apple’, ‘Sodom apple’.

Annual or perennial 1-2 m high under shrubs, stems erect, branched, densely hairy with single or multi cellular glandular hairs and evenly pubescent with, simple hairs, with two type prickles, acicular and recurved prickles. Leaves solitary or in pairs, membranous, blades broadly ovate to ovate-triangular, base subcordate, 5-15 × 5-13 cm long, sinuate-lobed, lobes 4-6, base at sub-obtuse, apex at sub-acute to acuminate, lower surface also with 4 or 5 rayed stellate hairs, rays nearly always in one plane, one ray longer than rest, up to 0.5 mm long; armed on midrib and minor veins with straight, acicular, laterally compressed, broad-based, whitish to yellowish prickles up to 2 cm long; petioles 3-8 cm long, armed with similar prickles. Inflorescence’s axillary, 4 or 5 flowered; peduncles stout, 1.5-2 cm long, peduncle obsolete or short. Flowers andromonoecious, only basal ones fertile; pedicel 5–10 mm long. Calyx campanulate, ca. 5-7 mm, long, green, 5 lobed; each lobe 0.6–1.2 mm long, oblong, deltoids, glandular hairs with prickles. Corolla cream white, 1.5-2 cm diam., 5 lobed; each lobe 1-1.5 cm long, lanceolate, recurved, apex acute to mucronate, outer surface pubescent with glandular and eglandular and hairs. Stamens 5, 7-9 mm long, epipetalous, adnate to the base of petals; filaments 1–1.5 mm long, glabrous; anther 6-7 mm long, lanceolate, pale whitish yellow, basifixed, apically pores dehiscent. Ovary globose, 1-2 mm diam., glabrous with densely and minutely puberulent hairs ca. 2 mm long; style glabrous, slender, erect, 7-8 mm long; stigma capitate, green. Berries globose, 1.5-3 cm diam., when mature, minutely puberulent when young, later smooth and glabrous, immature fruit pale and dark green with white mottling, yellow at maturity with leathery skin surrounding thin-layered, pale green, mucilaginous scented pulp. Seeds suborbicular, 2 mm diam., concave, compressed, brown.

Flowering and Fruiting: Almost throughout the year.

Ecology: Grows in shady along roadside, in association with *Alternanthera ficoidea* (L.) P. Beauv., *Xanthium strumarium* L. and *Alternanthera sessilis* (L.) DC.

Distribution:

Global: Native of South America, the species has been introduced all over the tropical and subtropical country.

India: Odisha, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Madhya Pradesh, Himalaya, Meghalaya and Assam.

Specimen examined: INDIA: Maharashtra, Ahmednagar district, Bhandardara entry check post point Road, 16/12/2025, S. Shinde & S.S. Kambale 113 (Deposited in Herbarium, Department of Botany, K.T.H.M. College, Nashik).

Aliens Status: The species is Native of South America and can be considered invasive in India.

RESULTS AND DISCUSSION

According to a review of the relevant literature, *Solanum viarum* Dunal has been reported from a few Indian states, including Tamil Nadu, Kerala, Andhra Pradesh, and Odisha, but not from Maharashtra. The present record represents the first report of this species from Maharashtra and constitutes a new distributional record for the state.

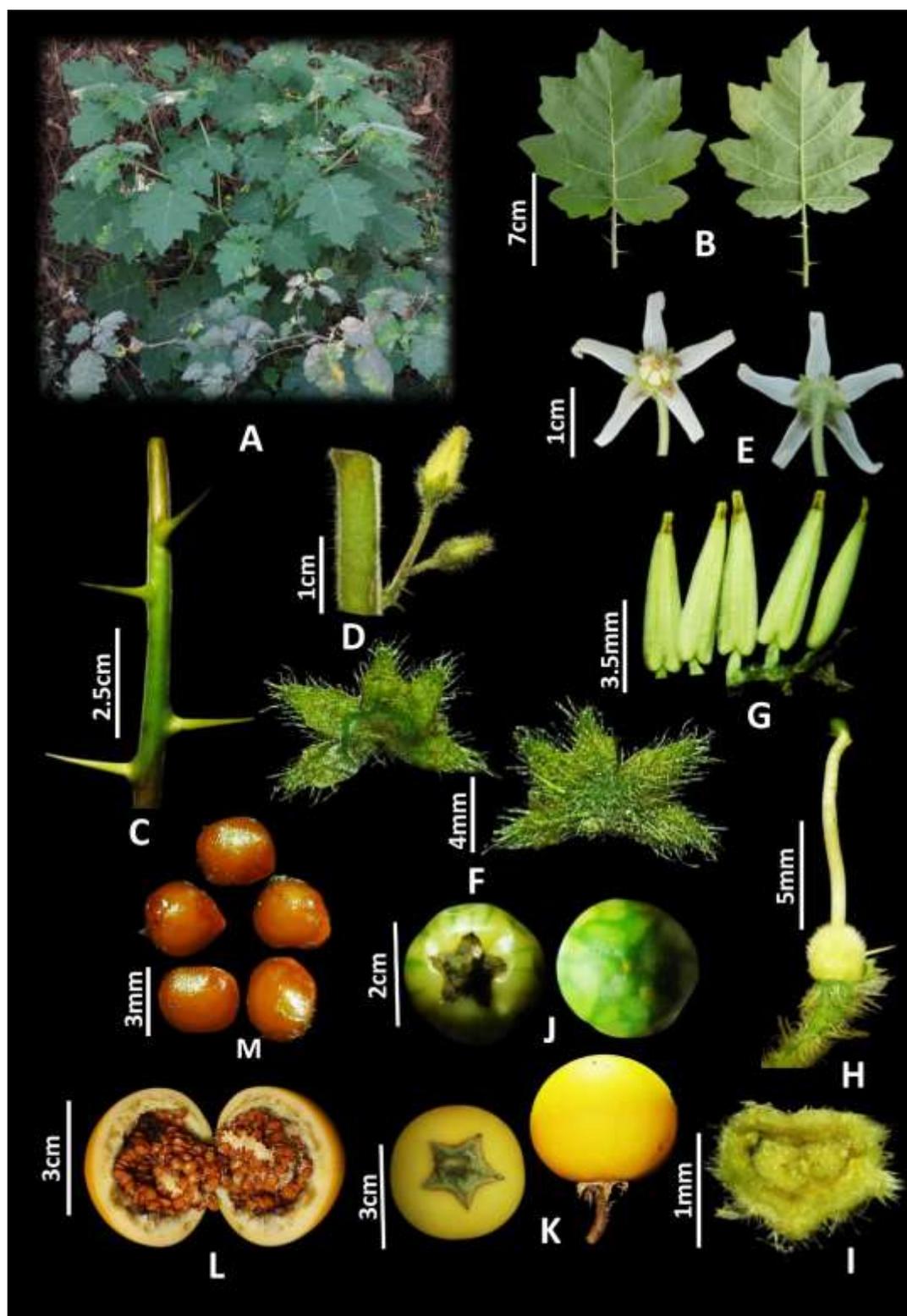


Figure 1. *Solanum viarum* Dunal A-habit & habitat; B-leaves (adaxial & abaxial); C-petiole D-bud; E-open flower (front & back); F-calyx; G-stamens; H-gynoecium; I-T.S. of ovary; J-immature fruit; K-mature fruit; L-cut fruit; M: seeds.

CONCLUSION

During a floristic survey in Ahmednagar District of the Western Ghats, Maharashtra, *Solanum viarum* Dunal (Solanaceae) was recorded for the first time from the state. This finding represents a new addition to the flora of Maharashtra. The present record extends the known geographical distribution of the species in India and highlights the need for continued floristic exploration and monitoring of invasive plant species in the region.

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