



Taxonomic delineation of *Solanum exarmatum*, a new species from *Solanum capsicoides* All. in Southern Western Ghats, Kerala, India

V.S. ANIL KUMAR¹, MAYA C. NAIR², SOUMYA. M³. & K. MURUGAN⁴

¹Plant Biochemistry and Molecular biology Laboratory, Department of Botany, University College, Thiruvananthapuram, Kerala, PIN 695034, India.. Email: vsanilbotany@gmail.com

² Department of Botany, Govt. Victoria College, Palakkad, Kerala, PIN 678 001, India. Email: drmayadhoni@gmail.com

³Environmental Resources Research Centre, Peroorkkada, Thiruvananthapuram, Kerala, India. Email:soumyamurugan@gmail.com

⁴Plant Biochemistry and Molecular biology Laboratory, Department of Botany, University College, Thiruvananthapuram, Kerala, PIN 695034, India. Email:harimurukan@gmail.com

Abstract

A new species of *Solanum* from the Western Ghat region of Kerala, India is described and illustrated as *Solanum exarmatum* sp. nov. The species is dissimilar from its allied species *Solanum capsicoides* in terms of shape of the leaf, non spiny nature of stem and calyx in contrast to the thick armour of sharp spines in *Solanum capsicoides*. Spines are present occasionally on the petiole and the lower surface of the leaves but they are slender. Detailed description including distribution with relevant taxonomic notes along with colour photographs is provided.

Key words: New species, Solanaceae, *Solanum exarmatum*, Kerala, Western Ghats

Introduction

Solanum L. is a cosmopolitan genus containing almost 75% of the species in Solanaceae, distributed among all habitats, from arid to the thick wet tropical rainforests. Life forms in the family range from small trees to ephemerals, with many variations in size and form (Mabberley 2008, Frodin 2004, Edmonds & Chweya 1997). The genus is represented by 48 species in India (Reema Kumari 2004) and the family is ranked among the most important angiospermic families to mankind. Many species have been described particularly in the neotropics, the latest ones being *Solanum agnewiorum* from Kenya (Vorontsova 2010), *Solanum zoeae* from North Kimberly, Western Australia (Barrett 2013) and *Solanum junctum* from Peru (Stern 2014). Since there exists taxonomic notoriety within the genus – among the species-alternative strategies deviating from conventional taxonomy can find reliable application. Several phylogenetic studies were attempted in the family Solanaceae (Sarkinen *et al.* 2013) and the type genus *Solanum* (Weese & Bohs 2007, Stern *et al.* 2011). The section *Acanthophora* of the subgenus *Leptostemonum* had been the concern of several researchers in *Solanum* biology as well as its phylogeny. A taxonomic treatment of sect. *Acanthophora* was provided by Nee (1979 a) which was subsequently revised (Nee, 1979 b, 1991). The sect. is represented by nearly 20 neotropical species, both herbs as well as small shrubs. Studies on the molecular phylogenetic relationships among the species concludes that the sect. *Acanthophora* is not monophyletic (Levin *et al.* 2005). Recently, a new species belonging to the sect. has been reported from Argentina and Brazil (Chiarini & Mentz 2012). In India, the sect. *Acanthophora* is represented by ca. 10 species. Thirty *Solanum* species were reported from Kerala and show wide ambiguities in the taxonomic status of many of the species. Morphometric and taxonomic characterization of the genus *Solanum* in Southern Western Ghats revealed intra specific variations within the accessions of *Solanum capsicoides* All. under the sect. *Acanthophora*. Though the genus exhibits phenotypic plasticity, the variability exhibited by the new species from the Palakkad gap region of the Southern Western Ghats to the extreme South was stable. Hence, a new taxon *Solanum exarmatum* under the sect. *Acanthophora*, allied to *Solanum capsicoides* is here being named and illustrated.