



Plant Archives

Journal homepage: <http://www.plantarchives.org>
 DOI Url : <https://doi.org/10.51470/PLANTARCHIVES.2021.v21.no2.132>

A NEW COMBINATION IN THE GENUS *LYCIANTHES* (SOLANACEAE: SOLANOIDEAE: CAPSICEAE)

Madhusmita Mallia, Chinnamadasamy Kalidass* and Pratap Chandra Panda

Taxonomy & Conservation Division, Regional Plant Resource Centre, Bhubaneswar-751015, Odisha, India

*Email: kalidassindia@gmail.com

(Date of Receiving : 22-07-2021; Date of Acceptance : 24-09-2021)

ABSTRACT

During the verification of nomenclature in connection with the preparation for 'Studies of Solanaceae in Eastern Ghats' the authors came across a species *Solanum uncinellum* Lindl. that need to be updated in accordance with the changing generic characters for the genus *Lycianthes*. Accordingly the required new name and new combination is proposed here.

Keywords: *Lycianthus*, *Solanum uncinellum*

INTRODUCTION

Dunal (1852: 29, 156) published *Solanum* sect. *Pachystemonum* Dunal, which included five subsections (*Solanum* subsect. *Lycianthes* Dunal) and several unranked infrageneric names. In later, the status of subsect. *Lycianthes* varied: *Solanum* Sect. *Lycianthes* (Dunal) Wettst. (Wettstein, 1891: 22); *Solanum* subgen. *Lycianthes* (Dunal) Bitter (1917: 424, 442) and gen. *Lycianthes* (Dunal) Hassl. Based on the occurrence of reduced inflorescences and the presence of large stone cells in fruits, Hassler (1917: 89) justified the distinctness of *Lycianthes* from *Solanum* L. Subsequently, the genus name *Lycianthes* was conserved (Wiersema, 2015). According to Mabberley (2017: 545), *Lycianthes* is distributed in Tropical America (ca. 150 species) and East Asia (ca. 20 species). Some works recognize 200 species, with ca. 40 taxa native to Mexico (Hunziker, 2001; Villasenor, 2016; Barboza and Hunziker, 1992; Rojas and D'Arcy, 1997). For India, Deb (1980) recorded seven *Lycianthes* species. Molecular studies of the Solanaceae family by Olmstead *et al.* (1999) and have shown that the tribe Capsiceae include a group identified by chloroplast DNA data consisting of the genera *Capsicum* and *Lycianthes*. Distinctive calyx morphology, shared by these two genera (D'Arcy, 1986; Barboza & Hunziker, 1992) gives further support for this group. It has been concluded that *Capsicum* is derived from *Lycianthes*. Currently the most widely accepted taxonomic position recognizes *Lycianthes* as a separate genus (Mc Vaugh, 1973; Bitter, 1914 & 1919; Danert, 1969; D'Arcy, 1986; Barboza and Hunziker, 1992; Rojas and D'Arcy, 1997; Olmstead *et al.*, 1999; Hunziker, 2001; Villasenor, 2016).

The genus *Lycianthes* is distinct within the tribe *Capsiceae* by its free portion of the stamina-filaments being

markedly unequal, one filament 2-5 mm long, the other four filaments 1-2 mm long and cup-shaped calyx, often with 5 or 10 sub-apical teeth arising near base of apical rim, rotate corolla and anthers dehiscing by apical pores. Lindley (1840) described *Solanum uncinellum* and noted the species, uncertain generic placement and furthermore, the character states of *S. uncinellum* conflict with what currently define *Solanum*. While revising the family Solanaceae, it was observed that the species *S. uncinellum* was found to be coming under the genus *Lycianthes* because of the distinguishable characters, such as the presence of unequal anthers, hooked petals, and calyx with 10 sub-apical teeth. The purpose of this paper is to assign a correct placement for this species formerly placed in *Solanum*. As there is no combination in the genus *Lycianthes* for this species, we propose the new combination (Art. 41.2 of the ICN; Turland *et al.*, 2018), based on morphological analysis of the species *Solanum uncinellum* Lindl., it is transferred to the genus *Lycianthes* (Dunal) Hassler, and the new combination *Lycianthes uncinella* (Lindl.) Kalidass and Madhusmita Mallia are made.

Nomenclature and Taxonomy

Lycianthes uncinella (Lindl.) Kalidass & Madhusmita Mallia, *comb. nov.*

Basionym: *Solanum uncinellum* Lindl., Edwards's Bot. Reg. 26: t.15. 1840.

Type: This plant flowered in the year 1837 in the garden of the Horticultural Society [Chiswick, England], in the month of July 1837, Lectotype, designated here (or perhaps holotype): Anonymous *s.n.* (CGE).

Homo-synonyms:

Solanum pensile Sendtn. in Mart., Fl. Bras. 10: 50. 1846. *Solanum scandens* L., Pl. Surin. 6 [5?]. 1775, non *Solanum scandens* Miller, 1768. *Solanum laetum* Miq., Stirp. Surin. Sel. 135. 1851. *Solanum sempervirens* Dunal, Prodr. [A.P. de Candolle] 13(1): 88. 1852. *Solanum styracioides* Rusby, Mem. Torrey Bot. Club 4: 230. 1895. *Solanum miquelii* C.V.Morton, Contr. U.S. Natl. Herb. 29:43. 1944. *Solanum scandens* L. var. *laetum* (Miq.) Bitter ex Amshoff, Bull. Torrey Bot. Club 75: 655. 1948. *Solanum granelianum* D'Arcy, Ann. Missouri Bot. Gard. 60:758. 1974 [1973]. *Solanum palenquense* D'Arcy, Selbyana 2(1): 63. 1977.

Solanum ipomoea Sendtn. in Mart., Fl. Bras. 10: 50. 1846. *Solanum ipomoeoides* Chodat & Hassl., Bull. Herb. Boissier sér. 2, 4: 80. *Solanum ipomoea* Sendtn. var. *angustifolium* Witasek, Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 79: 333. 1910. *Solanum ipomoea* Sendtn. var. *ipomoeoides* (Chodat & Hassl.) Hassl., Repert. Spec. Nov. Regni Veg. 15: 119. 1918. *Solanum ipomoea* Sendtn. var. *macrostachyum* Hassl., Repert. Spec. Nov. Regni Veg. 15:120.1918.

Solanum volubile Rusby, Bull. Torrey Bot. Club 26: 194. 1899, non *Solanum volubile* Sw., 1797, non *Solanum volubile* Sw., 1797. *Cyphomandra yungasense* Rusby, Bull. Torrey Bot. Club 26: 195. 1899.

Hetero-synonyms: *Solanum leucosporum* Dunal, Prodr. [A.P. de Candolle] 13(1): 99. 1852. *Solanum ipomoeum* St.-Lag., Ann. Soc. Bot. Lyon 7: 135. 1880, nom. illeg. Superfl. *Solanum penduliflorum* Rusby, Descr. S. Amer. Pl. 113. 1920, non *Solanum penduliflorum* Dammer, 1912. *Solanum ipomoea* Sendtn. var. *macrostachyum* Hassl., Repert. Spec. Nov. Regni Veg. 15:120.1918. *Solanum tinctum* C.V.Morton, Contr. U.S. Natl. Herb. 29: 43. 1944.

Notes: It is uncertain whether Lindley (1840) based his description of *Solanum uncinellum* solely on the single specimen housed at the CGE. Therefore, the CGE specimen is designated as the lectotype. Alternatively, it may be the holotype. Bitter treated three *Solanum* species, viz., *S. rantonnettii* Carriere, *Lycianthes dombeyi* Dunal, and *S. laevis* Dunal as *Lycianthes* species, viz., *L. rantonnettii* (Carriere) Bitter, *L. dombeyi* (Dunal) Hassl., and *L. laevis* (Dunal) Bitter. Likewise, now we also treat *Solanum uncinellum* Lindl. as a *Lycianthes* taxon and make the new combination *L. uncinella*.

Acknowledgement

Authors are grateful to the Forest & Environment Department, Government of Odisha for financial support and to the Chief Executive, Regional Plant Resource Centre, Bhubaneswar for facilities. I (C. Kalidass) also wish to thank the Prof. K. N. Gandhi for providing helpful suggestions and comments on the manuscript.

REFERENCES

- Barboza, G.E. and Hunziker, A.T. (1992) Estudios sobre *Solanaceae*, XXXIII. El genero *Lycianthes* en la Argentina, *Darwiniana* 31: 17-34. <https://www.jstor.org/stable/23222555>
- Bitter, G. (1919) Die Gattung *Lycianthes*. *Abhandlungen herausgegeben vom Naturwissenschaftlichen Verein zu Bremen* 24:292-520.
- D'Arcy, W.G. (1986) The calyx in *Lycianthes* and some other genera, *Annals Missouri Botanical Garden* 73: 117-127. <https://www.jstor.org/stable/2399143>
- Deb, D.B. (1980) Enumeration, synonym and distribution of the *Solanaceae* in India. *Journal of Economic and Taxonomic Botany* 1: 33-54.
- Hunziker, A.T. (2001) Genera *Solanaceae*: The genera of *Solanaceae* illustrated, arranged according to the new system, Gantner verlag K-G., Ruggell, Germany.
- Mabberley, D.J. (2017) *Mabberley's plant-book: a portable dictionary of plants, their classification and uses*, Fourth edition. Cambridge, United Kingdom.
- Olmstead, R.G.; Sweere, J.A.; Spangler, R.E.; Bohs, L. and Palmer, J.D. (1999). Phylogeny and provisional classification of *Solanaceae* based on chloroplast DNA. pp. 111-137 in M.Nee, D.E. Symon, R.N Lester and J.P Jessop (editors), *Solanaceae IV: Advances in Biology and Utilization*. Royal Botanic Garden, Kew.
- Rojas, C.B. & D'Arcy, W.G. (1997) The genus of *Lycianthes* (*Solanaceae*) in Venezuela. *Annals of the Missouri Botanic Garden* 84: 167. <https://www.biodiversitylibrary.org/page/27280369#page/178/mode/1up>
- Turland, N.J.; Wiersema, J.H.; Barrie, F.R.; Greuter, W.; Hawksworth, D.L.; Herendeen, P.S.; Knapp, S.; Kusber, W.-H.; Li, D.-Z.; Marhold, K.; May, T.W.; McNeill, J.; Monro, A.M.; Prado, J.; Price, M.J. and Smith, G.F. (2018). International Code of Nomenclature for algae, fungi and plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017. *Regnum Vegetabile* 159. Glashutten: Koeltz Botanical Books. DOI <https://doi.org/10.12705/Code.2018>
- Villasenor, J. (2016). Checklist of the native vascular plants of Mexico. *Revista Mexicana de Biodiversidad* 87: 559-902. <https://doi.org/10.1016/j.rmb.2016.06.017>
- Wettstein, R. von. (1891) *Solanaceae*. In: Engler A, Prantl K. (Eds) *Die Natürlichen Pflanzenfamilien* 4, 3bVerlag von Wilhelm Engelmann, Leipzig 4–38.
- Wiersema, J.; McNeill, J.; Turland, N.J.; Barrie, F.R.; Buck, W.R.; Demoulin, V.; Greuter, W.; Hawksworth, D.L.; Herendeen, P.S.; Knapp, S.; Marhold, K.; Prado, J.; Prud'homme van Reine W.F.; Smith, G.F. (2015). *International Code of Botanical Nomenclature for algae, fungi and plants (Melbourne Code)* adopted by the Eighteenth International Botanical Congress, Melbourne, Australia, July 2011: *APPENDICES II – VIII*. *Regnum Vegetabile* 157. XIX, 492 p.