

The identity of *Periploca cordata* (Apocynaceae)

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ABSTRACT

While revising the genus *Cosmostigma* for the Flora of Thailand it became clear that *Cosmostigma cordatum*, based on *Periploca cordata*, is a synonym of *Pentatropis capensis*. Consequently, *Cosmostigma racemosum* is the name to be used for the only species of *Cosmostigma* occurring in Thailand. *Cosmostigma racemosum*, *Pentatropis capensis* and *Periploca cordata* are typified.

KEYWORDS: Asclepiadaceae, Asclepiadoideae, *Cosmostigma*, Marsdenieae, nomenclature, *Pentatropis*, taxonomy.

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INTRODUCTION

Cosmostigma Wight is a genus of three species of terrestrial climbers (Endress *et al.*, 2019) occurring in India, Sri Lanka, China, mainland South-East Asia and Java (Widodo *et al.*, 2014). The type of the genus is *Cosmostigma racemosum* Wight. Almeida (2001) established that *Periploca cordata* Poir. is an earlier name for *C. racemosum* and he established the new combination *Cosmostigma cordatum* (Poir.) M.R.Almeida. *Periploca cordata* was considered a possible synonym of *Hemidesmus indicus* (L.) R.Br. by Decaisne (1844) but the name was generally overlooked in the taxonomic literature. *Cosmostigma cordatum* has so far only been used in a Handbook of Asclepiads of Thailand by Thaithong *et al.* (2018). *Cosmostigma racemosum* instead has been used in numerous treatments, e.g. in Decaisne (1844); Hooker (1883); Costantin (1912); Jagtap & Singh (1999). If *Periploca cordata* and *Cosmostigma racemosum* were to be proven to be conspecific, a case could be built to conserve *C. racemosum* against *Periploca cordata*. This will not be necessary, however, because examination of type material of *Periploca cordata* has clarified that it is not an earlier name for *C. cordatum*, and instead should be treated as a synonym of *Pentatropis capensis* (L.f.) Bullock, without any disadvantageous nomenclature consequences.

The present paper is based on the examination of specimens at BK, BKF, BM, K, P and SING as well as on JSTOR Global Plants (<https://plants.jstor.org/>, accessed on 31 May 2019). All names have been compared with data published on the International Plant Names Index (IPNI; <http://www.ipni.org/>, accessed on 31 May 2019) and TROPICOS (<http://www.tropicos.org/>, accessed on 31 May 2019). All protologues and type citations have been checked on the Biodiversity Heritage Library website (<https://www.biodiversitylibrary.org/>, accessed on 31 May 2019), JSTOR (<https://www.jstor.org/>, accessed on 31 May 2019), or at the Singapore Botanic Gardens library and the Royal Botanic Gardens, Kew library. Lectotypes are designated for names where the protologue did not clearly mention a single type specimen with a reference to the institution in which it was deposited, strictly applying Art 9.1 & 9.3 of the ICN (Turland *et al.* 2018).

TAXONOMY

Pentatropis capensis (L.f.) Bullock, Kew Bull. 10(2): 284, in adnot. 1955.— *Cynanchum capense* L.f., Suppl. Pl. 168. 1782. Type: *Koenig s.n.* (lectotype LINN [LINN-HL308-8!], designated here).

— *Periploca cordata* Poir. in Lamarck Encycl. 5: 191. 1804, **syn. nov.**— *Cosmostigma cordatum* (Poir.) M.R.Almeida, Fl. Maharashtra 3A: 239. 2001. Type: *Sonnerat s.n.* (lectotype P [P00357009!], designated here).

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Notes.— *Cynanchum capense* was published based on material collected at “Cap. bonae spei” by Koenig and Sparrmann (Linnaeus, 1782: 168). Brown (1908: 752) clarified that the Koenig and Sparrmann specimens belong to two species and that only the Koenig collection, from India, agrees with the protologue of *C. capense*. He indicated that there is a Koenig duplicate in LINN herbarium, however without formally effecting a typification. The taxon is not included in Jarvis’ (2007) extensive publication on Linnean names as it does not cover the names published by Carl Linnaeus the Younger (Linnaeus filius). The specimen in LINN mentioned by Brown can be traced to LINN-HL308-8, that does not bear Koenig’s name but is penned “capense” in Linn. f. handwriting, and is designated here as lectotype. Two Koenig sheets of *C. capense* are present at BM (BM001014190 and BM001014189), and they can be considered syntypes.

Periploca cordata was described based on a specimen in Lamarck’s herbarium collected by Sonnerat. The Lamarck herbarium is now in P, and the only specimen fitting the protologue is P00357009, and is designated here as lectotype of *P. cordata*. The specimen has ovate leaves 1–2.5 by 0.8–1.5 cm, with barely visible secondary venation, inflorescences almost sessile bearing flowers with narrow corolla lobes. It is clearly not the same species as *Cosmostigma racemosum* that has larger leaves > 5 by 4 cm with prominent secondary venation, inflorescences with peduncles > 2 cm long bearing flowers with ovate corolla lobes. *Periploca cordata* is therefore not synonymous with *Cosmostigma racemosum* but is instead a new synonym of *Pentatropis capensis*, a species occurring in India and Sri Lanka. *Cosmostigma racemosum* belongs to tribe Marsdenieae, characterised by erect pollinia, while *Pentatropis capensis* belongs to tribe Asclepiadeae characterised by pendulous pollinia (Endress *et al.* 2019).

Cosmostigma racemosum Wight, Contr. Bot. India 42. 1834.— *Asclepias racemosa* Roxb., Hort. Bengal. 20. 1814. **nom. illeg.** non *A. racemosa* Jacq. Enum. Syst. Pl. 17. 1760 [= *Cynanchum racemosum* (Jacq.) Jacq., Select. Stirp. Amer. Hist. 81. 1763]. Type: India, cultivated at Calcutta botanic garden, without collector or number, *Wallich Asclep. no. 59.a* [Wall. Cat. no. 8177A] (lectotype **K-W** [K001129154!], designated here).

Notes. Wight based *Cosmostigma racemosum* on an illustration of Roxburgh’s illegitimate *Asclepias racemosa* in the India House collections “Roxb. fl. Ind. 2. p. 32 in coet. merc. Ind. or. mus. tab. 1818”, and on Wallich specimen “Herb. Wall.! n. 59”, cultivated in Calcutta, as well as from Silhet and Chittagong. The Wallich numbers associated with Apocynaceae (formerly Asclepiadaceae) described by Wight are usually Wallich Asclepiadaceae numbers that were assigned by Wallich to material given to Wight before Wallich Catalogue numbers were assigned (Noltie, 2005). Therefore “Herb. Wall.! n. 59” likely refers to Wallich Asclep. 59, as Wallich Catalogue 59 corresponds to a different taxon, *Meniscium deltigerum* Wall. (Thelypteridaceae). At the Linnean Society is kept the original manuscript list of Wallich Asclep. numbers (manuscript SP1284) (Noltie, 2005). In that list, taxon number 59 is indicated as “*Marsdenia?*” and includes three collections: (a) [illegible] H.B.C. (Calcutta Botanic Garden); (b) Silhet; (c) Chittagong, matching the protologue of *C. racemosum*.

The Roxburgh illustration, numbered 1813 instead of 1818, is extant at **K** (<http://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:20008971-1>), and three specimens of Wallich Asclep. 59 can be found with the following lettering: “A, Hort. Bot. Calc.” [Wall. Cat. no. 8177A] [K001129154]; “B, Silhet” [Wall. Cat. no. 8177B] [K001129155] and mounted on the same sheet “C, Chittagong” [Wall. Cat. no. 8177C] [K001129156]. A specimen of *C. racemosum* is also present in Wight’s personal working herbarium in the general **K** collection [K000895035] however without a reference to a Wallich Asclep. number. Specimen K001129154, cultivated at Calcutta botanic garden, is fertile and well preserved and is therefore selected as lectotype of *C. racemosum*.

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