

Two new synonyms in *Phlogacanthus* (Acanthaceae)

Maity R.¹ & S.S. Dash^{2*}

¹Botanical Survey of India, AJC Bose Indian Botanic Garden, Howrah, West Bengal – 711 103, India

²Botanical Survey of India, CGO Complex, 3rd MSO Building, Salt Lake, Sector – I, Kolkata, West Bengal –700 064, India

E-mail: ssdash2002@gmail.com

Abstract: *Phlogacanthus changlangensis* P.Lungphi, A.V.Singh & A.P.Das and *P. curviflorus* var. *menchanensis* Barnali Dutta & Borthakur are reduced here as synonyms of *P. curviflorus* (Wall.) Nees and *P. tubiflorus* Nees respectively.

Keywords: Andrographideae, Nomenclature, *Phlogacanthus*.

Introduction

Phlogacanthus Nees (Acanthaceae: Andrographideae) comprises of about 35 species worldwide (Deng, 2020), distributed mainly in South and Southeast Asian countries (Hu *et al.*, 2011; Mabberley, 2017; Hai *et al.*, 2018). The genus comprises of 13 taxa in India (Arisdason *et al.*, 2020; Maity & Dash, 2020; Maity & Dash, 2021a; Maity *et al.*, 2022), with the highest concentration of species in northeastern states (Maity & Dash, 2021b). Due to high morphological variability, the identification of *P. curviflorus* (Wall.) Nees and *P. tubiflorus* Nees belonging to the section *Phlogacanthus* were often interchangeably documented in the Indian literature (Phurailatpam *et al.*, 2014; Dutta & Borthakur, 2016; Dutta *et al.*, 2016; Lungphi *et al.*, 2021; Mehmud *et al.*, 2023). However, *P. curviflorus* can be readily distinguished from *P. tubiflorus* by its 6–15(–20) mm long pedicels and up to 50 mm long red to purplish-red (-lilac-mauve) corolla against 2–4(–6) mm long pedicels and 15–30 mm long crimson to brick-red corolla in *P. tubiflorus*.

Based on detailed studies including critical examination of the protologue and type specimens, *P. curviflorus* var. *menchanensis* Barnali Dutta & Borthakur (Dutta & Borthakur, 2016) and *P. changlangensis* P.Lungphi, A.V.Singh & A.P.Das

(Lungphi *et al.*, 2021), recently described from Northeast India, are synonymized here with *P. tubiflorus* Nees and *P. curviflorus* (Wall.) Nees respectively.

Taxonomic Treatment

Phlogacanthus curviflorus (Wall.) Nees in Wall., Pl. Asiat. Rar. 3: 99. 1832. *Justicia curviflora* Wall., Pl. Asiat. Rar. 2: 9. t.112. 1830. *Lectotype* (designated by Deng, 2020): INDIA, “Crescit in montosis Silet propinquis, indeque a De Silva in Hortum Calcuttensem missa..” October 1828, Wall. Cat. No. 2429A (K [K001115916 digital image!]).

Phlogacanthus changlangensis P.Lungphi, A.V.Singh & A.P.Das, Pleione 15(3): 449. 2021. **syn. nov.** *Type:* INDIA, **Arunachal Pradesh**, Changlang, Kharsang, Longtom-II, N 27°24'06”, E 96°00'49”, 197–206 m, 19.11.2021, *P. Lungphi* 0382A (holo CAL!, CAL0000234425!).

Notes: Lungphi *et al.* (2021) described *P. changlangensis* and differentiated it from *P. curviflorus* based on stem vestitures, petiole length, size and vestitures of leaf lamina (both surfaces glabrous); inflorescence length, pedicel length; floral part vestitures and corolla colour. The protologue including the type of *P. changlangensis* and specimens from Arunachal Pradesh were thoroughly studied. It was found that there were discrepancies in the description, photo plate and diagnosis provided by Lungphi *et al.*, (2021) at some places, such as: in the diagnosis it was stated that the calyx of *P. changlangensis* is glabrous whereas the photo plate clearly showed that the calyx is densely pubescent on the outer surface and the same was mentioned in the comparative table provided

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by them. Other distinguishing characters mentioned were found to be insignificant in separating it from *P. curviflorus*. All characters are well within the range of variations of the same. Hence, *P. changlangensis* is reduced to a synonym of *P. curviflorus*.

Phlogacanthus tubiflorus Nees in Wall., Pl. Asiat. Rar. 3: 99. 1832. *Lectotype* (designated by Deng, 2020): INDIA, Assam, "In montibus Camrupae ad Goalparam [Goalpara] d. 12 Novembris a. 1808 legit cl. Hamilton". "Justicia tubiflora Hamilt. Herb., Wall. Cat. n. 2428" (K [K001115915] digital image!).

Phlogacanthus curviflorus (Wall.) Nees var. *menchanensis* Barnali Dutta & Borthakur, Bangladesh J. Plant Taxon. 23 (1): 71. 2016. **syn. nov.** Type: INDIA, Assam, Nagaon, Menchan Gaon, N 26°34.049', E 093°03.871', 04.01.2014, 72 m, B. Dutta & S.K. Borthakur 55 (holo GUBH [Acc. no. 018766!]; iso ASSAM n.v.).

Notes: Dutta and Borthakur (2016) described *P. curviflorus* var. *menchanensis* from Northeast India and compared it with *P. curviflorus*. However, the characters given for "*P. curviflorus* var. *curviflorus*" by Dutta and Borthakur (*l.c.*) are identical to *P. tubiflorus*. Mehmud *et al.* (2023) synonymised it under *P. curviflorus*. The authors, however, misapplied the name *P. curviflorus* and the correct identity of their "*P. curviflorus*" is also *P. tubiflorus*. The synonymization of *P. curviflorus* var. *menchanensis*, under *P. curviflorus* by Mehmud *et al.* (2023) is thus incorrect. Detailed studies on the type specimen of *P. curviflorus* var. *menchanensis* at GUBH, revealed no significant differences with *P. tubiflorus*, therefore it is reduced here as a new synonym of the latter.

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