



Notes on the typification of *Hemigymnia macleodii* Griff. (Boraginaceae)

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Abstract

The nomenclature of *Hemigymnia macleodii* Griff. (Boraginaceae) is revisited and the typification of the name is justified.

Key words: *Cordia macleodii* (Griff.) Hook.f. & Thomson, IUCN, Holotype, Lectotype, Neotype

Cordia macleodii (Griff.) Hook.f. & Thomson of the family Boraginaceae occurs in India, Pakistan and Bangladesh (Clarke 1883; Sanyal 1994; Mostaph & Uddin 2013; Pal 2016; Sanjappa & Sringswara 2019). It is prominent among the other species of the genus by its mostly suborbicular-cordate alternate leaves which are greenish gray and velvety beneath. Moreover, the flowers are white or yellowish white with the outer surface of the calyx pubescent and the inside of the corolla hairy.

In India *C. macleodii* is widely distributed in the forests of Bihar, Chhattisgarh, Jharkhand, Gujarat, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Odisha, Rajasthan, Tamil Nadu, Uttarakhand and West Bengal (Clarke 1883; Sanyal 1994; Sanjappa & Sringswara 2019). *C. macleodii* was originally described by Griffith (1843) as *Hemigymnia macleodii* Griff. based on material sent to him by D. Macleod from then Jubbulpore (Jabalpur, Madhya Pradesh), where it was growing abundantly. With regard to the original material of *H. macleodii* and its type, there is no evidence that in 1843 Griffith knew of the species except from Macleod's material growing in woods of teak near Jubbulpore (Jabalpur, Madhya Pradesh). In 1845 Griffith died and the species is discussed in his *Notulae* published posthumously (Griffith, *Not. Pl. Asiat.* 4: 184–185. 1854). This included an illustration but only of what looks like a portion of the ovary (Griffith, *Ic. Pl. Asiat.* 4: t. 448, fig. vi. 1854). The only other possible original material, a specimen deposited at K (K000998063) is under question.

The Kew specimen has a printed label headed “Herbarium of the late East India Company No.” (with “5996” then written in) and with “East Bengal”; “Herb. Griffith.” and “Distributed at the Royal Gardens, Kew, 1862-63”. The printed “East” in “East Bengal” (Bangladesh) has been deleted in ink and this seems to have been done at an early time, probably at the same time as the name “*Cordia macleodi* H. f. & T.” was entered on the label. It is clear from the label that it was affixed to the specimen long after the publication of *Hemigymnia macleodii*. The reference to “the late East India Company” shows that it was produced after 1858, the year in which the East India Company was liquidated under the provisions of the Government of India Act 1858. This is also reflected in *C. macleodii*, published only in 1858, being given as the name and the distribution not being until 1862–1863. All one can say about it is that it is claimed as a Griffith specimen and as he only lived for two or three years after describing the plant from Jabalpur, he may well never have collected it again so it could be original material, but, for that to be the case, the “Bengal” must be erroneous and should have

been deleted along with the “East”. Lacking “Jubbulpore” and “Macleod” it cannot be a syntype, and, as Griffith was an outstanding taxonomist and would have referred to any other specimen in his publication, it seems very unlikely that it was in his possession in 1843. Notably, *C. macleodii* has been recorded as also growing in the then undivided Bengal (now comprising West Bengal, Bangladesh and part of Chhotanagpur plateau), and so it is possible that Griffith collected it in Bengal or Chhotanagpur area close to Bengal after 1843. Furthermore, in the Chhotanagpur area of Jharkhand state (then Bihar), adjoining West Bengal, this species was not uncommon (Haines, 1910:474).

In this context the publication of Deb *et al.* (2018) is important. In their publication they stated that “Although Griffith (1843) did not explicitly designate a type collection, the protologue (Griffith 1843) is obviously based on Griffith’s own collection (sent to him by D. Macleod). In the absence of any older specimen, we choose to designate this specimen (Griffith 5996 K!) as the holotype of the name *Hemigymnia macleodii* (which Griffith placed, curiously, under Verbenaceae family). However, in view of the fact that Hooker (1858, p. 128) mentioned several syntypes collected after Griffith (1843), Griffith 5996 (K) may also be designated as lectotype of the name *Cordia macleodii*. Importantly, only the original author can designate a holotype; otherwise a holotype can only exist if it was the one specimen used by the author (Art. 9.1 of the ICN, Turland *et al.*, 2018) and given the information (and lack of it) on the label of K000998063, it is virtually certain that this is not the holotype of *H. macleodii*. However, the statement by Deb *et al.* (2018) “we choose to designate this specimen (Griffith 5996 K!) as the holotype of the name *Hemigymnia macleodii*” is the use of the word holotype “in a sense other than that in which it is so defined” and, because, unusually in the case of a holotype citation, they explicitly designated the specimen as holotype, they have met the requirement of Art. 7.11 for a typification on or after 1 January 2001 that their “typification statement includes the phrase “designated here” (hic designatus) or an equivalent” (Turland *et al.*, 2018). It is therefore to be treated as an error to be corrected (Art. 9.10, Turland *et al.*, 2018) either to lectotype or neotype, depending on whether or not the specimen was original material.

Deb *et al.* (2018), perhaps unaware of Art. 9.10, also designated Griffith 5996 (K) as lectotype of the name! As a lectotype can only be selected from original material and it seems certain K000998063 is not the original material as it must have been collected after 1843 because Griffith never mentioned this specimen in his publication. This designation is also an error to be corrected under Art. 9.10, in this case to neotype. As discussed above, the plant was more or less common in the Chhotanagpur area and Bengal (undivided), so this specimen is almost certainly a later collection. Recently, four specimens were located at CUH collected by Rev. Dr. Andrew Campbell under the “Flora of Chutia Nagpur (Chhotanagpur)” program, two of which were referred by George Watt in relation to his documentation of medicinal plants. It is worth mentioning that the type collections at CAL include the specimen *Beddome s.n.* (CAL0000071622) which was mentioned by Hooker & Thomson (1858, p. 128) in their publication of new combination, *Cordia macleodii* (Griff.) Hook.f. & Thomson. Besides other two specimens, possibly of this species, viz. CAL0000071620 and CAL0000071621 are also traced at the same repository. However, these were certainly not associated with the protologue and hence not original material. Griffith, in the protologue, only reported *Hemigymnia macleodii* from “Jubbulpore” and this place has never been included under Bengal. Therefore, Griffith 5996 K (K000998063) is clearly not the holotype, and, if indeed from Bengal as stated on the label, it is also not original material, then, under Art. 9.10 (Turland *et al.* 2018) Deb *et al.*’s uses of “holotype” and of “lectotype” are corrected here to “neotype.” As this neotype designation meets the requirements of Art. 7.10 & 7.11 (Turland *et al.* 2018) then under Art. 9.19 (Turland *et al.* 2018) this designation must be followed and no further

typification is needed—unless, of course, original material [necessarily from around “Jubbulpore” (Jabalpur)] is found.

Taxonomic treatment:

Cordia macleodii (Griff.) Hook.f. & Thomson, J. Proc. Linn. Soc. Bot. 2: 128.1858; C. B. Clarke in Hooker, J. D., Fl. Brit. India 4: 139. 1883.

Hemigymnea macleodii Griff., Calcutta J. Nat. Hist. 3: 363.1843.

Gerascanthus macleodii (Hook. f. & Thomson) Borhidi, Acta Bot. Hung. 34: 405. 1988.

Neotype: India, East Bengal, *Herb. Griffith* 5996 (K, K000998063, digital image seen), designated by Deb *et al.* 2017, **affirmed here.**

Flowering & Fruiting: March - June

Distribution: BANGLADESH; INDIA (Bihar, Chhattisgarh, Jharkhand, Gujarat, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Odisha, Rajasthan, Tamil Nadu, Uttarakhand, West Bengal); PAKISTAN.

Note: *Cordia macleodii* is widely distributed in India and medicinally important (Dubey *et al.* 2008; Bhide *et al.* 2011; Oza & Kulkarni 2017). The use of bark of this species in jaundice is mentioned by G. Watt on one herbarium sheet (*Campbell* 9403-CUH). Population of the species is decreasing gradually and to ascertain the threat/conservation status of the species a rigorous survey is needed throughout its distributional range following IUCN guidelines (IUCN Standards and Petitions Subcommittee, 2019). The occurrence of *C. macleodii* in West Bengal and its adjoining areas has been recorded by Prain (1903), Haines (1910:474), Sanyal (1994: 277), Pal (2016: 453) and Deb *et al.* (2018).

Exsiccatae: India: Central India, Malwah, *Beddome s.n.*, acc. no. 304651, barcode CAL0000071622, dated 1857; without locality, *s.d.*, without collector's name, *s.n.*, acc. no. 304639, barcode CAL0000071620; without precise locality, *s.d.*, *Hab. Royle s.n.*, acc. no. 304647, CAL0000071621; Maharashtra: Bombay, *G. S. Puri 2372*, dated 16.06.1956; Kolaba, Alibag, *S. K. Jain 35770*, dated 23.05.1958; Poona Decan, *Mr. M. Woodrow 48*, acc. no. 304649, dated 1882; Madhya Pradesh: Heura & Semol, Khandua district, *J. F. Duthie 8344*, acc. no. 304642, dated 21.12.1888; Bheraghat Manpur, *A. K. Sastry 87555*, dated 22.04.1963; Shahpur, *G. Panigrahi & C. M. Arora 8502*, dated 13.04.1965 (2 sheets); Rajasthan: *Dr. Brandis s.n.*, dated December 1878; Arand Sagar, *V. Singh 4612*, dated 29.03.1977; without collector's name, *s.n.*, acc. no. 304653, dated 1878; West Bengal: Kankorajhora forest, *G. Sengupta s.n.*, acc. no. 2252, dated 21.05.1963; Kankorajhora forest (Midnapore district), *G. Sengupta s.n.*, acc. no. 2250, dated 21.05.1963; Kankorajhora forest (Midnapore district), *G. Sengupta s.n.*, acc. no. 2251, dated 21.05.1963; Kankorajhora forest (Midnapore district), *G. Sengupta s.n.*, acc. no. 2248, dated 21.05.1963; Uttarakhand: without collector's name, *1550*, acc. no. 304652; Karnataka: Dhubarebetta, *A. S. Rao 80116*, dated 20.04.1962; Hosa of north Canara, *W. A. Talbot 422/360*, acc. no. 304648, *s.d.*; Malligebanihalla, Mysore district, *A. S. Rao 80279*, dated 23.04.1962; without collector's name, *s.n.*, 304650, *s.d.*; Huligundu Bedguli, Mysore, *A. S. Rao s.n., s.d.*; Bihar: West Duars, *N. H. Heims s.n., s.d.*; without collector's name, *s.n.*, acc. no. 304641, *s.d.* (all at CAL); Jharkhand: Chutia Nagpur (Chhotanagpur), Pukhuria, *Rev. A. Campbell 9403*, dated April 1885; Chutia Nagpur (Chhotanagpur), Pukhuria, 1000 ft., *Rev. A. Campbell 9403*, dated April 1886; Chutia Nagpur, Tuardi, 1000 ft., *Rev. A. Campbell, s.n.*, dated April 1886 (two specimens) (all at CUH); Chota Nagpur, *J. S. Gamble 8783*, acc. no. 304643; Singbhum, *H. H. Haines 620*, acc. no. 304493, dated January 1903; Pinderabela area watch tower, *C. R. Nagesh 48885*, dated 14.04.2010; Pinderabela area watch tower, *C. R. Nagesh 48885*, dated 19.04.2010 (2 sheets); Betala, *L. K. Banerjee s.n., s.d.* (all at CAL).

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