



RESEARCH ARTICLE

# Type designation of five Lindley's names in the Genus *Habenaria* (Orchidaceae)

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## Abstract

The present study highlights the type designation on 5 species of the genus *Habenaria* Willd. (Orchidaceae) namely *H. cephalotes* Lindl., *H. heyneana* Lindl., *H. longicornu* Lindl., *H. macrostachya* Lindl. and *H. plantaginea* Lindl.

## Keywords

Endemic, Lindley, Orchidinae, typification

## Introduction

The genus *Habenaria* Willd. was described by Willdenow (1) in Species Plantarum. It is the largest genus in the tribe Orchideae (Orchidaceae - Orchidoideae) distributed in Pantropical and Subtropical comprising more than 800 species (2). The Indian *Habenaria* is reported with 67 species with an endemism of 29 species (3, 4). The Western Ghats, one of the biodiversity hotspots contains 39 species of *Habenaria* of which 22 species are endemic (5). As a part of Orchidaceous studies in the Southern Western Ghats, the authors collected 5 species of *Habenaria* which remained untypified. Hence, these names are lectotypified here for nomenclatural stability as per Art. 9.3 of the ICN(9).

## Materials and Methods

The present study includes a thorough literature review, including the protologue of each name, as well as examination of herbarium specimens. We traced and analysed herbarium specimens from several herbaria, including BM, CAL, E, G, GH, GOET, M, MH, NY, P, K, and W. In addition, other web source viz. BHL, IPNI, JSTOR Global Plants, Plant List, POWO, TROPICOS and WCSP were examined for supplementary information. Finally, 5 Lindley names are lectotypified based on their original descriptions and matching with specimens.

## Results and Discussion

*Habenaria cephalotes* Lindl., Gen. Sp. Orchid. Pl. 322. 1835.

**Lectotype** (designated here): INDIA. Peninsular India Orientalis, locality and date not indicated, *Wight* 2085 (E00383619, digital image! Fig. 1; isolectotype G00165848, digital image!). Additional syntypes: India, locality and date not indicated, *Wight* Kew Distrib. No. 3003 (CAL0000000787, GH00099744, GOET013928, M0225911, P00370550, P00439675, digital images!).

## Notes

The species was described based on Robert Wight's collections from Peninsula Indiae orientalis. We traced eight collections of *H. cephalotes* by Wight at CAL, E, G, GH, GOET, M and P. Of these, two sheets at E and G are labelled with *Herb. Wight. Propr.* and label no. 2085. The remaining 6 sheets at CAL, GH, GOET, M and P are bearing Kew Distribution number 3003. The sheet E00383619, bearing 3 twigs exactly matching with original description and a hand written label by Lindley with "*Habenaria cephalotes* Wight sp. n.". and the same is selected here as the lectotype.



**Fig. 1.** Lectotype of *Habenaria cephalotes* Lindl. (E00383619, © copyright of The Royal Botanic Garden Edinburgh; <https://data.rbge.org.uk/herb/E00383619>).

***Habenaria heyneana*** Lindl., Gen. Sp. Orchid. Pl. 320. 1835.

**Lectotype** (designated here): INDIA. locality and date not indicated, B. Heyne in *Wallich* 7044 (K001126642, digital image! Fig. 2; isolectotype K000061927, digital image!).

## Notes

Of the two sheets available at K, the better profusely flowering material is selected here as the lectotype.

***Habenaria longicornu*** Lindl., Gen. Sp. Orchid. Pl. 322. 1835 (as *longicornis*).

**Lectotype** (designated here): INDIA. locality and date not indicated, B. Heyne in *Wallich* 7027 (K000061922, digital image! Fig. 3; isolectotype K001126606!).



**Fig. 2.** Lectotype of *Habenaria heyneana* Lindl. (K001126642, © copyright of the Board of Trustees of the Royal Botanic Gardens, Kew; <http://specimens.kew.org/herbarium/K001126642>).



**Fig. 3.** Lectotype of *Habenaria longicornu* Lindl. (K000061922, © copyright of the Board of Trustees of the Royal Botanic Gardens, Kew; <http://specimens.kew.org/herbarium/K000061922>).

## Notes

Of the two original materials available at K, the better specimen is selected here as the lectotype.

***Habenaria macrostachya*** Lindl., Gen. Sp. Orchid. Pl. 307. 1835.

**Lectotype** (designated here): SRI LANKA. locality not indicated, 1829, *Macrae 51* (K000061928, digital image! Fig. 4; Additional syntypes: Sri Lanka, locality and date not indicated, *Macrae s.n.* (K000247417, K000247418, digital images!).

## Notes

The material bearing pencil drawings of dissected parts has been selected here as the lectotype.



**Fig. 4.** Lectotype of *Habenaria macrostachya* Lindl. (K000061928 © copyright of the Board of Trustees of the Royal Botanic Gardens, Kew; <http://specimens.kew.org/herbarium/K000061928>).

***Habenaria plantaginea*** Lindl., Gen. Sp. Orchid. Pl. 323. 1835.

**Lectotype** (designated here): INDIA. Monghir (now Munger in Bihar), 10<sup>th</sup> September 1811, Buchanan-Hamilton in *Wallich 7053 C* (K001126661 digital image! Fig. 5; isolectotype K001126659 digital image!; Additional syntype: India, Tinnevely and Travancore, October 1814, *Wallich 7053 A* (P00439667 digital image!).

## Notes

Of the three original materials available at K and P, the better specimen at K is selected here as the lectotype.



**Fig. 5.** Lectotype of *Habenaria plantaginea* Lindl. (K001126661 © copyright of the Board of Trustees of the Royal Botanic Gardens, Kew; <http://specimens.kew.org/herbarium/K001126661>).

## Conclusion

The type designation for each name of a species is crucial to avoid nomenclature confusion; as there may be several collections on same name for different species or different name for same species. Hence, validating the proper type for a name enhances the protologue.

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## Authors contributions

MS addressed the issue on untypified species of *Habenaria* and collected pertinent source of literature. KK drafted the manuscript. The authors read and approved the final manuscript.

## Compliance with ethical standards

**Conflict of interest:** Authors do not have any conflict of interests to declare.

**Ethical issues:** None.

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