



RESEARCH ARTICLE

# Notes on the status of *Limnophila micrantha* (Benth.) Benth. and *L. glandulifera* Philcox (Plantaginaceae)

Edathumthazhe Kuni Sinisha, Valiya Thodiyil Jaseela & Nediaparambu Sukumaran Pradeep\*

KSCSTE-Malabar Botanical Garden and Institute for Plant Sciences, Kozhikode 673 014, India

\*Email: drnspradeep@gmail.com



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## Abstract

The taxonomic status of 3 species of the genus *Limnophila* viz., *L. micrantha* (Benth.) Benth., *L. glandulifera* Philcox and *L. repens* (Benth.) Benth. were examined. *L. micrantha* and *L. glandulifera* is found to be conspecific with *L. repens*. Hence, these 2 names are reduced here into the synonymy of the earlier name, *L. repens* (Benth.) Benth.

## Keywords

India; *Limnophila*; synonymy

## Introduction

The genus *Limnophila* R. Br. (1) comprises of ca. 45 species distributed in the tropical and subtropical regions of the world (2). The genus is represented by 21 species in India (3). During the revisionary studies on the genus *Limnophila* in India, the authors found *L. repens* (Benth.) Benth. (4) as highly variable with respect to the size of the stem, leaves and length of pedicels. It is widely distributed in India and due to its wide variation, it can hardly be distinguished from the already known species, *L. micrantha* (Benth.) Benth. (4) and *L. glandulifera* Philcox (5). A study in consultation with protologue and type specimens revealed that *L. micrantha* and *L. glandulifera* are conspecific with *L. repens* and hence, the former 2 names are reduced into the synonymy of *L. repens*.

***Limnophila repens*** (Benth.) Benth. in DC., Prodr. 10: 387 (1846); Philcox in Kew Bull. 24(1): 154. 1970; C.D.K. Cook. Aq. Wetl. Pl. India. 349.1996.

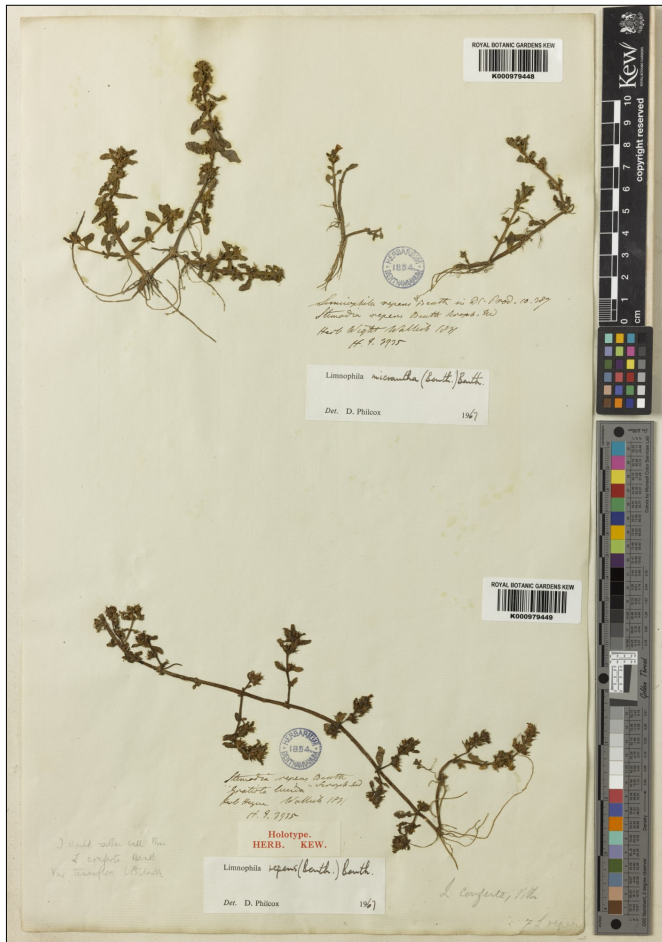
***Stemodia repens*** Benth. in Lindl., Bot. Reg. 17, sub t. 1470 (1831) & Scroph. Ind. 24 (1835); G. Don, Gen. Syst. 4: 540 (1837).

**Type** (lectotype, designated by Philcox 1970: 154): INDIA, Tamil Nadu ("Tranquarium"), B. Heyne in Wallich, Numer. List No. 3935C (K000979449, digital image! Fig. 1); isolectotypes K001117658, digital image!, BM000997891, digital image!, G not seen.

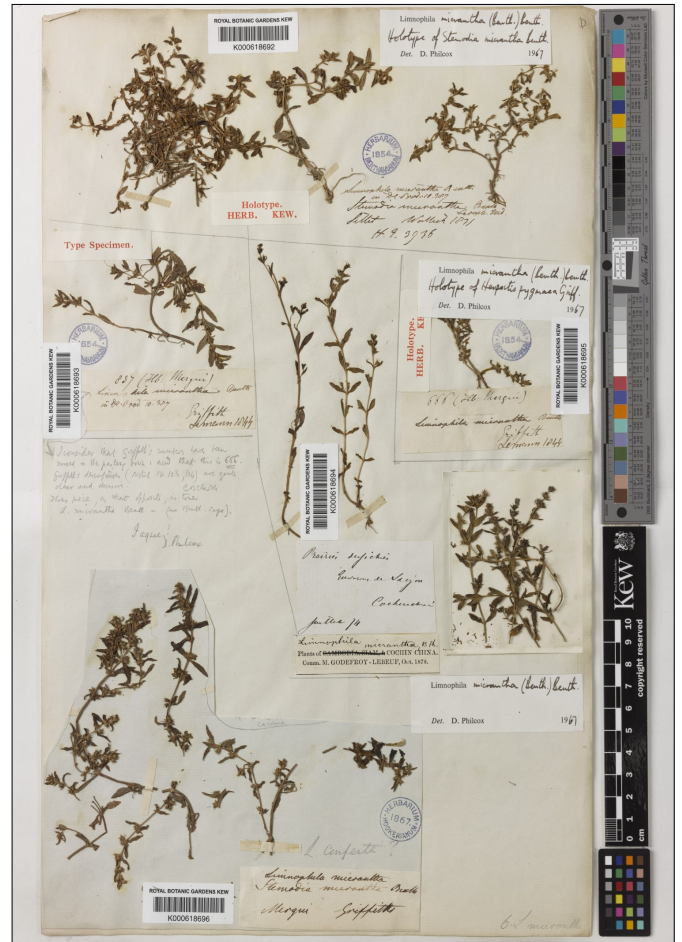
***Limnophila micrantha*** (Benth.) Benth. in DC., Prodr. 10: 387 (1846), *syn. nov.*

***Stemodia micrantha*** Benth. in Lindl., Bot. Reg. 17, sub t. 1470 (1831); Benth., Scroph. Ind. 23 (1835); G. Don, Gen. Syst. 4: 540 (1837).

**Type** (lectotype, designated by Philcox 1970: 144): BANGLADESH, Sylhet, *De Silva* in Wallich, Numer. List No. 3936 (K000618692, digital image! Fig. 2; iso-



**Fig. 1.** Lectotype of *Stemodia repens*. [Wallich Numer. List No. 3935 (K000979449). © The Board of Trustees of the Royal Botanic Garden, Kew.



**Fig. 2.** Lectotype of *Stemodia micrantha*. [Wallich Numer. List No. 3936 (K000618692). © The Board of Trustees of the Royal Botanic Garden, Kew.

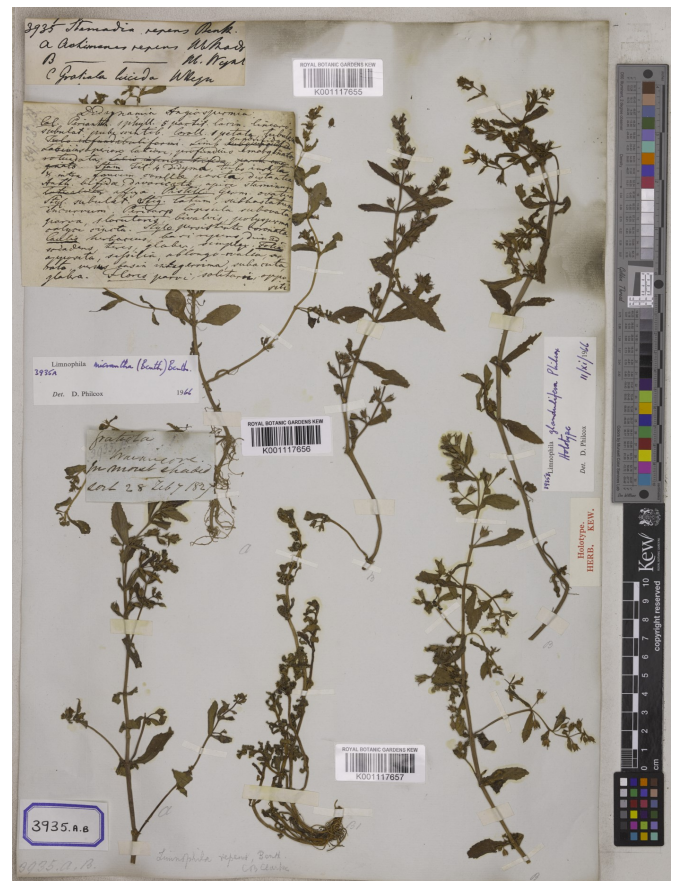
lectotypes K000899658, digital image!, K001117659, digital image!, BM000997895, digital image!, E00313971, digital image!, G00672789 Not seen).

***Limnophila glandulifera*** Philcox in Kew Bull. 21(1): 157 (1967), *syn. nov.*

**Type** INDIA, Kerala (Travancore), 'in locis humidis argillo-sis', *Wight* in *Wallich Numer. List No. 3935B* (holotype K001117656, digital image!, Fig. 3; isotype K000979439, digital image!).

***Specimens examined***

INDIA. Assam: South Kamrup district, North west of Roni, 23.10.1965, *A.S. Rao 39177*(ASSAM). Chattisgarh: Raigarh district, Kunkuri, 29.12.1964, *C.M. Arora 7307*(BSA). Goa: Taulim, 25.11.21, *E.K. Sinisha 16468*(MBGS). Jharkhand: Singhbhum district, Bhadura, 15.01.2001, *Debabrata Das 28636*(CAL). Karnataka: Hassan district, 13.05.1969, *C. saldanha 13400*(JCB); South Canara, Jahlsur, 19.11.1900. *C.A. Barber 2461*(MH); South Canara, Karkal, 23.11.1920, *C.E.C Fischer. 4641*(CAL); Utharakannada, 25.11.2021, *E.K. Sinisha 16464*(MBGS). Kerala: Idukki, Meenmutty, 18.02.1982, *C.N. Mohanan 73335*(MH); Kasargod, Kakadavu, 11.05.1982, *V.J. Nair 73839*(MH); Kannur, Kadavathur, 14.12.2018, *E.K. Sinisha 16405*(MBGS); Muzhuppilangadu, 13.12.1979, *V.S. Ramachandran 64091*(MH); Kollam district, Pamba, 24.03.1978, *C.N. Mohanan 54368*(MH); Pulimath, 25.05.1979, *M. Mohanan 59387*(MH); Santhankode, 26.11.1982, *K. Ramamoorthy 75550*(MH); Kottayam district, Athirampuzha, 07.12.1984, *V.J. Antony*



**Fig. 3.** Holotype of *Limnophila glandulifera*. [Wallich Numer. List No. 3935B (K001117656). © The Board of Trustees of the Royal Botanic Garden, Kew.



1050(MH); Kanjirappalli, 29.10.1961, *C. saldanha* 7889 (BLAT); Kozhikode, Kinaloor-Kurumboyil road, 05.12.2020, *E.K. Sinisha* 16434(MBGS); Thiruvanthapuram, Kottur, 29.09.1973, *J. Joseph* 44466(MH), Mukkolakkal, 04.07.2017, *Shintu & Prasannakumari*, 87273(TBGT); Thrissur, Anthikkad, 26.12.1995, *Dhruvan T.* 26644(TBGT); Chalakkudi, 09.12.1965, *K.M. Sebastian* 26686(MH); Idukki, Kudayathur, 06.10.2021, *E.K. Sinisha* 16453(MBGS). Madhya Pradesh: Baster district, Keske, 19.11.1958, *K.S. Subramanyam* 7219(MH); Bilaspur district, Kathgora, 15.12.1960, *C.M. Arora* 3970(BSA); Kalhgora, 15.12.1964, *C.M. Arora* 3986(BSA). Maharashtra: Munavale, 00.11.1994, *M.P. Bachulkar-Cholekar* 6092(SUK); Sindudurgh, 26.11.2021, *E.K. Sinisha* 16469(MBGS); Ramghat, 00.19.1991, *A.S. Narvekar* 70(SUK). Orissa: Kendrapara district, Bhitarkanika R.F., 06.02.1961, *G. Panigrahi* 23743 (ASSAM); Mayurbhanj District, Balijora, 20.02.1964, *G. Panigrahi* 23969(ASSAM); Sundargarh district, Koira, 12.10.198 A. *Mukherjee & D. Namhata* MN2435(CAL). Tamil Nadu: Chengalpetu, 04.03.2020. *E.K. Sinisha* 16429(MBGS); Pudukkottai District, Kudimiyamalai, 05.02.01985, *C. Arulappan* 336(MH). Tripura: Agartala, Kumjaban hill, 01.01.1915, *P.M. Debbarman* 6474(CAL). West Bengal: Jalpaiguri, 24.03.1910, *Riba* 3755(CAL); Santhiniketan, 26.12.2022, *E.K. Sinisha* 16486(MBGS); Singhijhora, 05.01.10, *Ribu & Rhomoo* 3320(CAL); Sonajuri, 24.12.2022, *E.K. Sinisha* 16493(MBGS).

The name *Limnophila repens* (Benth.) Benth. was based on *Stemodia repens*, originally described by Benth (6). The name was based on a single gathering by Wallich, Wall. Cat. No. 3935, consisting of 3 specimens mounted on a single sheet - Wallich 3935 A - "*Achimens repens*" (Herb. Madras), 3935 B - "*Achimens repens*" (Herb. Wight) and 3935 C - "*Gratiola lucida*" (Herb. Heyne), which according to Philcox (5) is "a mixture of three distinct species". Among them, Philcox considered 3935 B - "*Achimens repens*" (Herb. Wight) as distinct and described it as a new species *L. glandulifera*. He also annotated Wallich's specimen 3935 A - "*Achimens repens*" (Herb. Madras) as *L. micrantha* (Benth.) Benth. Meanwhile, Benth (6) described *Stemodia micrantha* based on Wall. Cat. No. 3936 (K000618692!, holotype) which was later transferred to *Limnophila* as *L. micrantha* (Benth.) Benth. However, the authors during the revision of the genus *Limnophila* in India collected a number of specimens of *Limnophila repens* from all over India and also examined herbarium specimens deposited in various Indian herbaria (CAL, MH, BSI, BSID, BSA) and found that the size of the stem, leaf, flower and pedicel are highly variable and also the flowers may vary from solitary axillary to racemose inflorescence. Hence, *L. micrantha* and *L. glandulifera* are treated here as conspecific to *L. repens*.

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## Authors contributions

All the authors contributed equally to the work presented in this paper.

## Compliance with ethical standards

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

**Ethical issues:** None.

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