

Notes on a new geographic record, recollection and lectotypification of some Indian *Didymocarpus* (Gesneriaceae)

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Abstract: *Didymocarpus cinereus* D.Don, previously known only from Nepal and Bhutan, is recorded here for the first time in India from Arunachal Pradesh. A detailed description along with colour photographs and notes on taxonomy and lectotypification of the species is provided. *Didymocarpus triplotrichus* Hilliard, a close relative of *D. cinereus* and a narrow endemic species confined to Darjeeling Himalaya in West Bengal, has been recollected from its type locality after a collection gap of 138 years. Taxonomic description and colour photographs of *D. triplotrichus* as well as the important distinguishing characters of *D. triplotrichus* and *D. cinereus* are given. Additionally, lectotypes for another East Himalayan species, *Didymocarpus albicalyx* C.B.Clarke have also been designated.

Keywords: *Didymocarpus albicalyx*, *D. cinereus*, *D. triplotrichus*, India, Lectotype, Recollection.

Introduction

Didymocarpus Wall. (Subtribe Didymocarpaceae, Tribe Trichosporeae, Subfamily Didymocarpoideae) has recently been remodelled to include perennial caulescent herbs with capitate or obscurely bilobed stigma, enantiostyly and bivalved capsules (Weber & Burtt, 1998[“1997”]; Weber *et al.*, 2011, 2013). The genus comprises over 100 species distributed in India, Bangladesh, Nepal, Bhutan, Myanmar, South and Southwest China, and southwards to Vietnam, Thailand, Laos, Cambodia, Malay Peninsula and northern Sumatra (Möller *et al.*, 2017; Möller, 2019; Yang *et al.*, 2019; Souvannakhommane *et al.*, 2019; Adhikari &

Möller, this issue; Prasanna *et al.*, this issue). In India, it is represented by 24 species distributed mainly in the mid-elevation mountain forests of western and eastern Himalayas, and Northeast India (Sinha & Datta, 2016; Möller *et al.*, 2017; Prasanna *et al.*, this issue).

Among the known species of *Didymocarpus* on the Indian subcontinent, two very closely related species, *D. cinereus* D.Don and *D. triplotrichus* Hilliard, have been often misidentified in herbaria and in some recent revisionary works (Mukherjee *et al.*, 2008; Sinha & Datta, 2016; Roy, 2017). Consequently, it is found necessary to revisit the taxonomic identity and geographic distribution of these two little known species through further field and herbarium studies. During the taxonomic reappraisal of Indian *Didymocarpus* it was also realized that two names, *D. cinereus* and *D. albicalyx* C.B.Clarke, needed lectotypification. Based on comparative studies of freshly collected specimens of *Didymocarpus* from the eastern Himalaya of India along with relevant taxonomic literature and authentic specimens deposited in various herbaria, we report here the following findings: 1) A new geographic record of the long confused *D. cinereus* for India, 2) Recollection of the endemic *D. triplotrichus* from its type locality after more than a century, and 3) Lectotypification of *D. cinereus* and *D. albicalyx*.

Materials and Methods

Fresh plant materials of *Didymocarpus* were collected during field surveys conducted in Tawang

and West Kameng forest ranges in Arunachal Pradesh and Darjeeling Himalayas in West Bengal in 2018 and 2019. The habit, habitat features and the geo-coordinates (latitude/longitude/elevation) of each specimen were recorded. The specimens were processed and herbarium vouchers were prepared following standard methods. Macro and micro-morphological characters in each of the species were examined critically in the freshly collected as well as herbarium specimens. The plant parts were carefully studied under a Stereo microscope (Leica S8APO, Wetzlar, Germany). Comparative studies were made by examining the relevant taxonomic literature (Don, 1825; Candolle, 1845; Clarke, 1874, 1883, 1885[“1884”]; Hilliard & Burtt, 1995; Weber & Burtt, 1998[“1997”]; Weber *et al.*, 2000; Hilliard, 2001; Hara, 2008; Sinha & Datta, 2016). Specimens including types of *Didymocarpus* housed in ASSAM, BSD, BSHC, CAL, DD, LWG, MH and Herbarium, Lloyd Botanic Garden (Darjeeling) were studied and digital specimen images were accessed from virtual herbaria of BM, E, G, K, L, M, P, S, and W. The Shenzhen Code (Turland *et al.*, 2018) was followed for nomenclature updates and lectotypification of the plant names.

For Scanning Electron Microscopic (SEM) studies, cleaned and alcohol-dehydrated leaf samples of *D. cinereus* and *D. triplotrichus* were first critical point dried (CPD-Quorum K850 Model, East Sussex, UK) using liquid CO₂ as transitional fluid for 30 minutes. The samples were later mounted on double-adhesive tape on stubs, and coated with gold for 10–15 minutes in a Coating Instrument (Quorum Q150T ES Model, East Sussex, UK). Photomicrographs of leaf samples were taken at different magnifications in high vacuum at 15 kV with a SEM (QUANTA 250 Model, Thermo Fisher Scientific, Oregon, USA) at CSIR-National Botanical Research Institute (NBRI), Lucknow. Geo-referenced distribution maps for *D. cinereus* and *D. triplotrichus* were composed using QGIS 3.8.2 Zanzibar (2019).

Didymocarpus cinereus D.Don, Prodr. Fl. Nepal. 122. 1825; C.B. Clarke in Hook.f., Fl. Brit. Ind. 4: 346. 1885[“1884”]; Weber *et al.*, in Ann. Naturhis. Mus. Wien 102B: 455. 2000; Hilliard in A.J.C. Grierson & D.G. Long, Fl. Bhutan 2(3): 1313. 2001. *Henckelia cinerea* (D.Don) Spreng., Syst. Veg., ed. 16, 4(2): 14. 1827. *Lectotype* (designated here): Nepal, *s.loc.*, *s.d.*, *Wallich s.n.* (BM [BM000521817 digital image!]).

Didymocarpus obtusa Wall., Numer. List 786. 1829, *nom. nud.*

Didymocarpus obtusus Wall. ex R.Br., Cyrtandreae 118. 1839, *nom. illegit.* Figs. 1 & 2

Deciduous, perennial, lithophytic herbs, to 30 cm tall. Primary stem stout, cylindrical, 1–4 cm long, terminating in 2–6, opposite, long-petiolate leaves; 1–4 slender stems from apex of primary stem, each terminating in 2 or 4 reduced sessile leaves with a peduncle arising from each axil; stems covered with short appressed acute hairs, long spreading acute hairs and yellow sessile globose glands; petioles 6–21 cm long, hairy; lamina broadly elliptic, ovate or suborbicular, 5–18 × 4–15 cm, base cordate to cuneate, sometimes oblique, margins crenate to serrate, subacute to obtuse or sometimes rounded at apex, green above, pale green beneath, dotted with yellow sessile globose glands on both surfaces, upper surface pubescent with short acute appressed hairs, lower surface glabrescent with short acute hairs only along the veins; secondary veins 4–8 pairs, slightly impressed above, raised beneath. Inflorescences axillary, corymbose cymes, not overtopping the leaves; peduncles slender, 2–6 cm long, sparsely glandular pilose; pedicels slender, 2–8 mm long, sparsely glandular pilose. Bracts broadly ovate, 3–6 × 2–7 mm, minutely toothed, green, dotted with yellow sessile glands on both surfaces, glandular and eglandular hairy outside, glabrous inside. Calyx campanulate, *c.* 6 mm long, 5-lobed, purplish, with yellow sessile glands and glandular hairs outside, glabrous inside; tube *c.* 4 mm long; lobes triangular, 2–3 mm long, acute or obtuse at

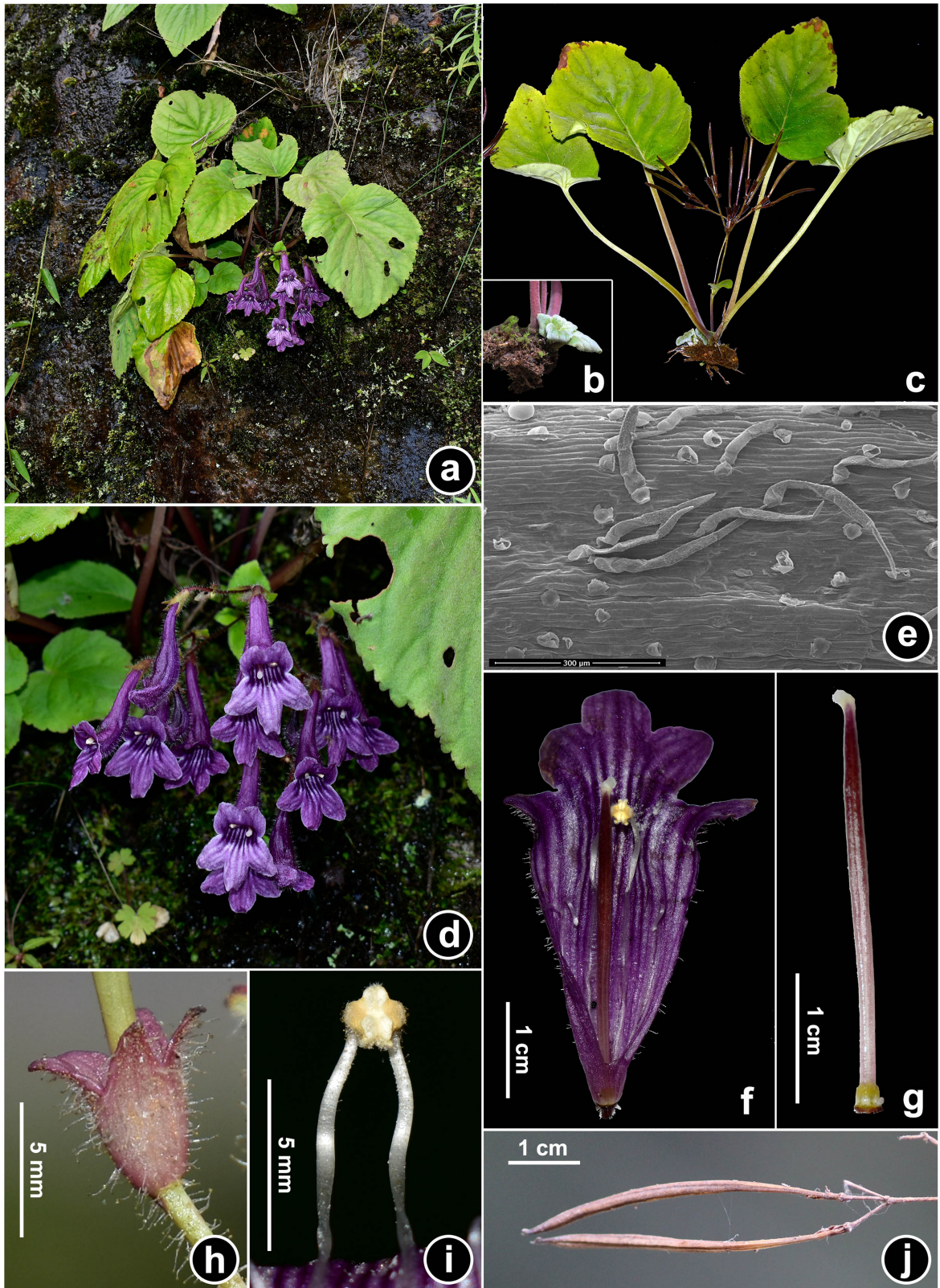


Fig. 1. *Didymocarpus cinereus* D.Don: **a.** Habit and habitat, **b.** New shoot sprouting from base of an adult plant, **c.** Habit, leaves overtopping inflorescence, **d.** Closer view of flowers **e.** SEM image of leaf surface showing short acute hairs, **f.** Corolla split open, showing stamens, staminodes and pistil, **g.** Pistil, **h.** Calyx, **i.** Stamens with coherent anthers, **j.** Mature capsules (photos **a** & **c-i** by A.S. Kanthraj; **b** & **j** by Jahnabi Gogoi).



Fig. 2. Lectotype of *Didymocarpus cinereus* D. Don (BM000521817). © The Natural History Museum, England. Reproduced with permission.

apex. Corolla funnelform, *c.* 5 cm long, glandular hairy outside, glabrous inside; tube *c.* 3 cm long, purplish; limb bilabiate, posterior lip (upper) 2-lobed, rounded, *c.* 6 × 8 mm, anterior lip (lower) 3-lobed, oblong-rounded, *c.* 9 × 6 mm, purple or bluish-purple with white striations on throat and lobes. Fertile stamens 2, inserted above the middle of corolla tube, enantiostylous, stamens and style deflected reciprocally towards left or right side away from each other; filaments slender, *c.* 8 mm long, whitish, sparsely glandular puberulent; anthers oblong, *c.* 2 mm long, coherent, creamy, bearded with short moniliform hairs, with a brownish patch and a few glandular hairs near connectives; staminodes 3, reduced to minute filaments of unequal length, 2–3 mm long, whitish, glabrous. Disc cupular, *c.* 2 mm high, minutely lobed, yellow, glabrous. Ovary cylindrical, *c.* 3 cm long, sessile,

whitish-brownish-purple, glabrous; style *c.* 2 mm long, not clearly demarcated, brownish, glabrous; stigma capitate, whitish, papillose. Capsules linear, slightly falcate, *c.* 5 × 0.2 cm, brown, glabrous, stipitate, stipe 0.5–1 cm long. Seeds numerous, unappendaged, ellipsoid-oblong, 0.2–0.5 × 0.1–0.2 mm, testa reticulate.

Flowering & fruiting: Flowering from July to September and fruiting from August to October.

Habitat: Grows on mossy rocks in moist tropical and wet montane temperate forests at an elevation ranging from 900 to 2400 m.

Distribution: Bhutan, Nepal, India (Fig. 3).

Specimens examined: INDIA, Arunachal Pradesh, Tawang district, Jung to Tawang, N 27°34'51.456", E 91°58'26.148", 2148 m, 13.09.2019, A.S. Kanthraj 321064; Sera Village way to Lumla, N 27°34'3.36", E 91°52'10.2", 2373m, 13.09.2019, A.S. Kanthraj 321065 (LWG); West Kameng district, Dirang MTB node, Sapper Army Camp, N 27°23'22.632", E 92°11'43.368", 1728 m, 07.09.2018, A.S. Kanthraj 319872; Dirang to Sella Pass, 5 km before Nyukmadung War Memorial, N 27°23'37.968", E 92°9'30.42", 1836 m, 07.09.2018, A.S. Kanthraj 319873; Mohankem Army Camp, N 27°25'14.16", E 92°7'27.12", 2112 m, 07.09.2018, A.S. Kanthraj 319874 (LWG).

Notes: When Don (1825) originally described *D. cinereus* in his 'Prodromus Florae Nepalesis', he based it on an unnumbered collection attributed to "Wallich, Nepal". Don's Prodromus was based on specimens from Nepal sent to Aylmer Bourke Lambert (1761–1842) by Francis Buchanan-Hamilton (1762–1829) and Nathaniel Wallich (1786–1854) in 1818 and 1819 (Stearn, 1945; Weber *et al.*, 2000). Wallich also had suggested several manuscript names for his Nepal specimens distributed to several herbaria, including the Lambert herbarium. Don had adopted some of these Wallichian names, but not all, in his Prodromus. After Lambert's death in 1842, his herbarium was sold in parts to many European institutions (Miller, 1970). Wallich's Nepal plants in Lambert

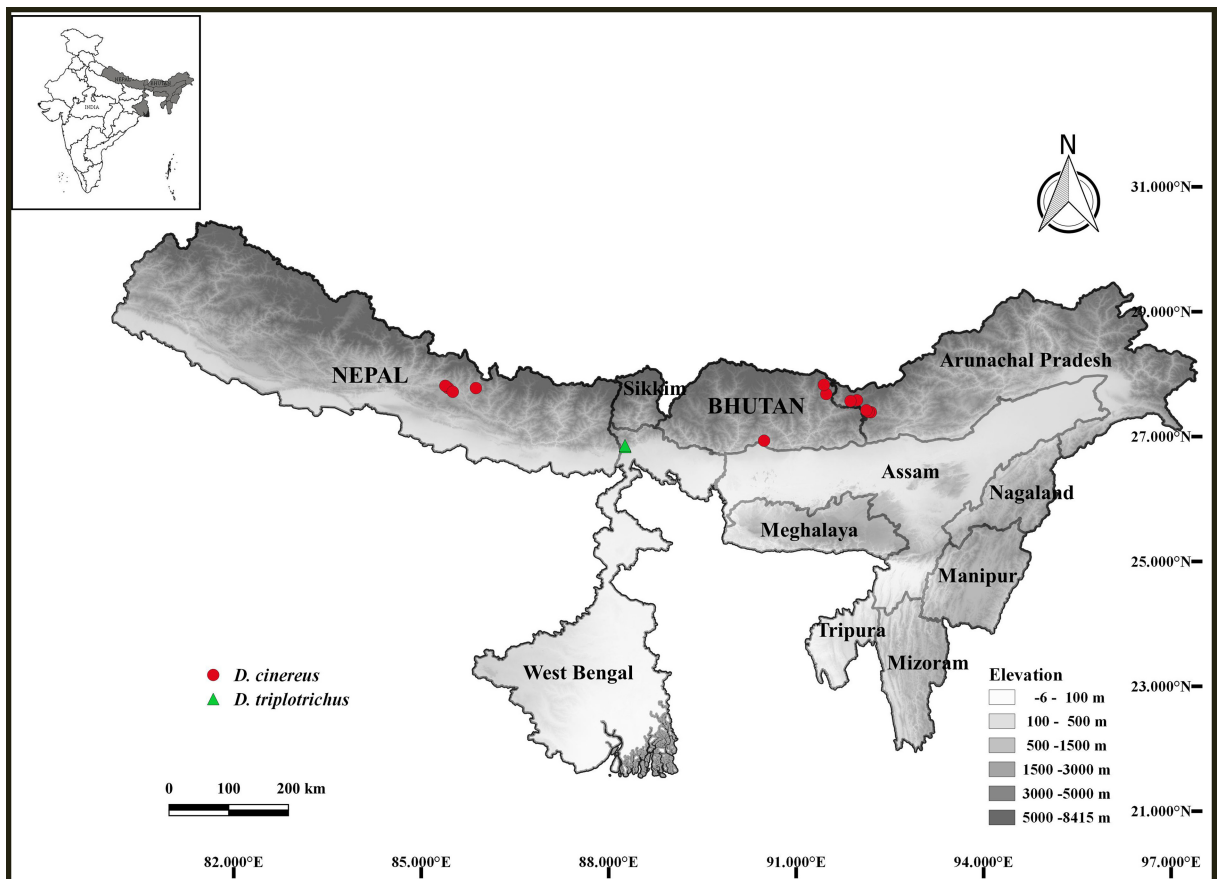


Fig. 3. Map showing the distribution of *D. cinereus* D.Don (red circle), and *D. triplotrichus* Hilliard (green triangle) [drawn using the software QGIS 3.8.2 Zanzibar (QGIS Development Team, 2019)].

herbarium, including the types of Don’s Prodrum are now in BM, duplicates in LINN (in Smith’s herbarium), now transferred to K, and other material is in BR, P-JU and CGE (Stafleu & Cowan, 1988). Our search for the original material associated with *D. cinereus* resulted in locating two Wallichian sheets in BM (BM000521817 and BM000948600). Both sheets were part of the Lambert herbarium acquired in 1842 and were determined and stored as *D. cinereus* in BM (Ranee Prakash, pers. comm.).

The sheet, BM000521817, contains eight fragments, with three flowering specimens mounted in the upper half, and five fragments (in vegetative and flowering stages) in the lower half. The sheet carries the labels, “INDIA WALLICH” (in print) and “*Didymocarpus obtusa*” (in hand), below the upper row of specimens, and “*Didymocarpus cinerea* D.Don” (in Don’s own

handwriting) at the right hand bottom of the lower row of specimens. It seems that the label INDIA, instead of NEPAL, might have been wrongly printed on the sheet. The other sheet (BM000948600) bears eight fragments in flowering and fruiting stages. The label at the lower bottom on the left hand side of the sheet shows: “*Didymocarpus obtusa* Wall., Nepal 1819, Wallich”, and C.B. Clarke’s annotation “*D. cinerea* D.Don is same as *D. obtusa* Wall.” on the right hand side. Both sheets represent true *D. cinereus* and match perfectly with Don’s original description. Among the two, BM000521817, which bears Don’s original annotation, is designated here as the lectotype for *D. cinereus*.

The occurrence of *D. cinereus* in India has long been disputed. The confusion began with Clarke’s (1874) misinterpretation of some of the Sikkim Himalayan specimens as ‘*D. obtusa* DC.’ [= *D. obtusus* Wall. ex

R.Br.], now an avowed synonym of *D. cinereus*. Hilliard and Burt (1995) segregated the Sikkim Himalayan elements of Clarke (1874) into a new species, *D. triplotrichus* Hilliard, very closely allied to *D. cinereus* but distinct from it primarily in the indumentum and floral characters (Table 1). Mukherjee and Parai (1995), Mukherjee *et al.* (2008) and Roy (2017) overlooked the above and erroneously reported the occurrence of *D. cinereus* for the gesneriaceous flora of the eastern Himalaya of India. These reports not only misinterpreted Clarke's (1874) description and illustration of *D. obtusus* (now *D. triplotrichus* Hilliard) as *D. cinereus*, but also included an exsiccata of misidentified, misinterpreted or missing specimens. Mukherjee and Parai (1995) and Mukherjee *et al.* (2008) cited a solitary specimen from Sikkim [Great Rangeet, 1200 m, YHB 974 (CAL)] under *D. cinereus*. This specimen is not traceable either in CAL (V.P. Prasad, pers. comm.) or any other herbaria.

Roy (2017) included *D. cinereus* based on two specimens from Jalpaiguri and Darjeeling area of West Bengal: i) *Mrs Prabha & Miss Ramola* 6343, and ii) *G. King s.n.* As evident from the herbarium label, the first specimen was collected from Nagarkot, a place in Nepal on 29 August 1966 (CAL, accession number 552006). Another specimen with the same collection number is also available in BM (BM000832926). Both the specimens represent the true *D. cinereus*. However, Roy (2017) wrongly cited the place of collection of *Mrs Prabha & Miss Ramola* 6343 as 'Nagrakot-Jalpaiguri (West Bengal)' and the date of collection as '23.4.14'. Roy (2017) cited the second specimen under *D. cinereus* with the following collection data: 'Pankabaree-Darjeeling, 2500 ft., 30.8.1877, *G. King s.n.* (CAL)'. In CAL there is no such specimen of *G. King s.n.* collected in 1877. King's specimen that matches with the collection data given in Roy (2017) is *G. King* 4043 (CAL, accession number 332123), which shows short petiolate leaves not overtopping the inflorescence, and belongs to *D. triplotrichus*, but not *D. cinereus*. Nevertheless, Roy (2017) misidentified *G. King* 4043 and included it under *D. andersonii* C.B. Clarke, a species

distinguishable from *D. triplotrichus* and *D. cinereus* by its purplish connate bracts concealing the pedicels and shorter sessile capsules with an acute tip. Moreover, Roy (2017) reproduced Clarke's (1874) illustration (t. 61) under *D. cinereus*, which also indicated that she was probably confused with the actual identities of *D. triplotrichus* and *D. cinereus*. Interestingly, Sinha and Datta (2016) did not include *D. cinereus* in their taxonomic account on the Gesneriaceae of North East India. *D. cinereus* thus remained elusive until this new report of the species from the Eastern Himalaya of India.

Didymocarpus triplotrichus Hilliard, Edinburgh J. Bot. 52: 218. 1995; Weber *et al.*, Ann. Naturhis. Mus. Wien 102 B: 467. 2000; Hilliard in A.J.C. Grierson & D.G. Long, Fl. Bhutan 2(3): 1311. 2001. *Type*: INDIA, **West Bengal**, Darjeeling distr., Pankhabari, 2000 ft., August 1880, *J.S. Gamble* 8322 (holo K [K000820532 digital image!]; iso CAL [CAL0000019194!, CAL0000019196!]).

Didymocarpus obtusus auct., non [Wall. ex] R.Br.; C.B. Clarke, Commelyn. Cyrtandr. Bengal. 91, t. 61. 1874. **Fig. 4**

Deciduous, perennial, lithophytic herbs, to 20 cm tall. Primary stem stout, cylindrical, 1–2 cm long, terminating in 2 opposite petiolate leaves; 1 slender stem from apex of primary stem, terminating in 1 or 2 pair of sessile leaves with a peduncle arising from each axil; stems covered with short appressed acute and long acute patent hairs and yellow sessile globose glands; petioles 2–8 cm long, hairy; lamina broadly ovate to suborbicular, 4–16 × 3–11 cm, base cordate to cuneate, sometimes slightly oblique, margins crenate to serrate, obtuse to rounded at apex, green above, pale green beneath, dotted with yellow sessile globose glands on both surfaces, upper surface with short acute appressed and longer acute patent hairs, lower surface glabrescent with short acute and long spreading hairs only along veins; secondary veins 4–8 pairs, slightly impressed above, raised beneath. Inflorescences axillary, corymbose cymes, overtopping the leaves; peduncles slender, 4–10 cm long, sparsely glandular pilose; pedicels slender, 4–15 mm long, sparsely glandular pilose.

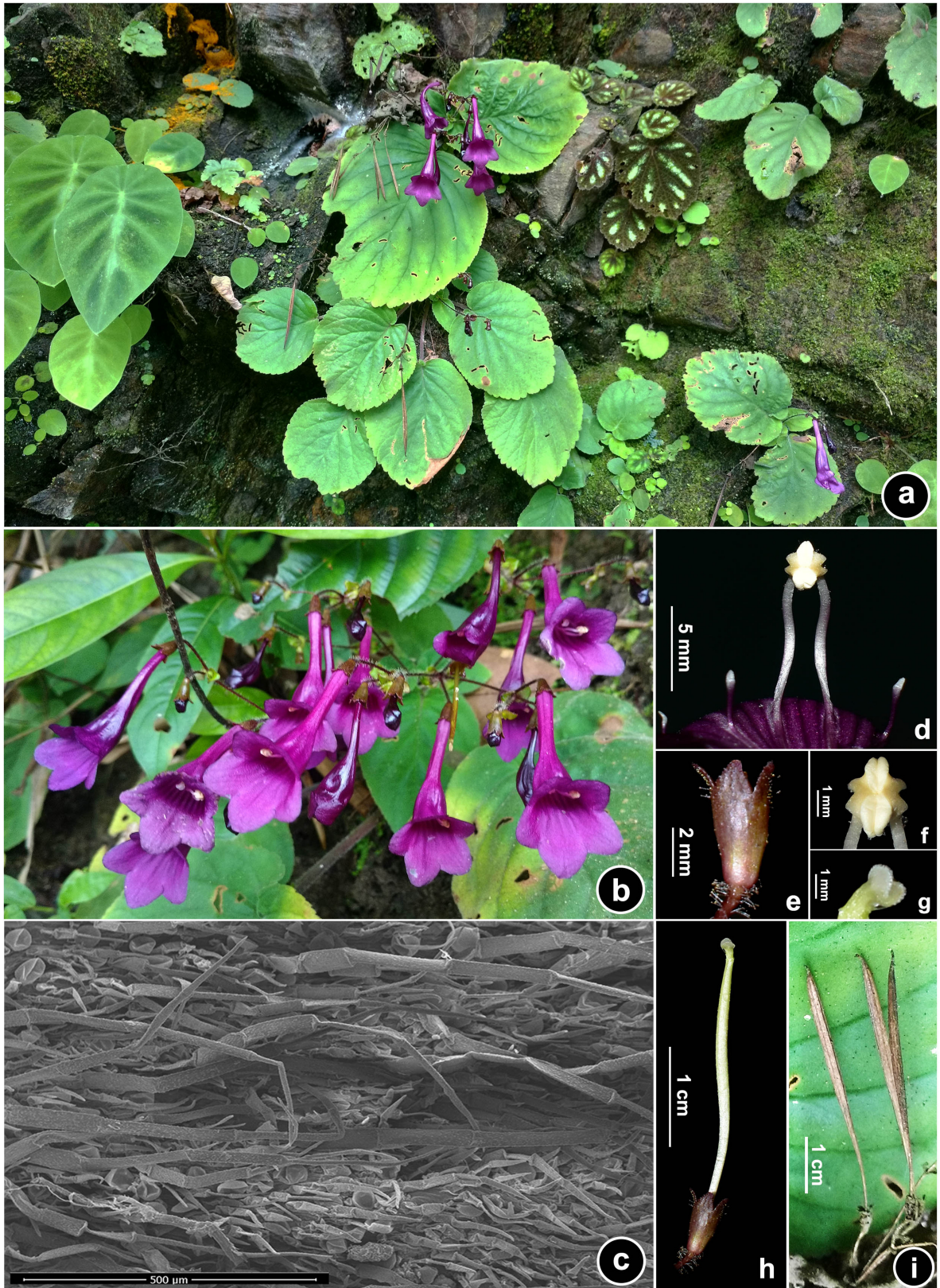


Fig. 4. *Didymocarpus triplotrichus* Hilliard: **a.** Habit, **b.** Closer view of flowers, **c.** SEM image of leaf surface showing long spreading and short acute hairs, **d.** Stamens with coherent anthers and staminodes, **e.** Calyx, **f.** Coherent anthers, **g.** Stigma, **h.** Pistil with calyx, **i.** Mature capsules (photos by A.S.Kanthraj).

Bracts broadly ovate, 3–6 × 4–7 mm, green, strigose, dotted with yellow sessile glands on both surfaces, eglandular and glandular hairy outside, glabrous inside. Calyx campanulate, 4–6 mm long, 5-lobed, purplish-brown often with green tinge, sparsely glandular hairy with yellow sessile globose glands outside, glabrous inside; tube *c.* 4 mm long; lobes triangular, *c.* 1.5 mm long, subacute to obtuse. Corolla *c.* 5 cm long, funnellform, purple, glabrous; tube *c.* 3 cm long; limb bilabiate, posterior lip (upper) 2-lobed, rounded, *c.* 6 × 8 mm, anterior lip (lower) 3-lobed, ovate-rounded, *c.* 8 × 10 mm, without prominent striations on lobes, with mild white striations on the throat. Fertile stamens 2, inserted above the middle of corolla tube, enantiostylous, stamens and style deflected reciprocally towards left or right side away from each other; filaments slender, *c.* 1 cm long, whitish, glabrous; anthers oblong, *c.* 3 mm long, coherent, creamy, glabrous, with a brownish patch and a few glandular hairs near connectives; staminodes 3, reduced to minute filaments of unequal length, *c.* 3 mm long, whitish, glabrous. Disc cupular, *c.* 1 mm high, pale green, glabrous. Ovary cylindrical, slightly narrowed towards base, *c.* 25 × 1 mm, green, glabrous; style *c.* 2 mm long, green, glabrous; stigma capitate, concave, whitish, papillose. Capsules linear, erect, *c.* 5 × 0.2 cm, brown, glabrous, stipitate, stipe 1–1.5 cm long. Seeds numerous, unappendaged, ellipsoid-oblong, 0.2–0.4 × 0.1–0.2 mm, testa reticulate.

Flowering & fruiting: Flowering from July to September and fruiting from August to October.

Habitat: Grows on moist mossy rocks on mountain slopes in tropical moist deciduous forests between 950 and 1065 m elevation.

Distribution: India (Eastern Himalaya), endemic (Fig. 3).

Specimens examined: INDIA, **West Bengal**, Darjeeling district, above Pankhabari, 2500 ft, 30.08.1877, *G. King* 4043 (CAL [Acc. no. 332123]); Between Kurseong and Pankhabari, 30.08.1857, *T. Thomson s.n.* (CAL [Acc. no. 332130]); Makaibari to Pankhabari Road, 1 km after Makaibari, N 26° 51' 8.28", E 88° 15' 33.12", 1065 m, 11.08.2018, *A.S. Kanthraj* 319846; Makaibari to Pankhabari Road, 3 km before Pankhabari, N 26° 50' 57.48", E 88° 15' 47.16", 950 m, 11.08.2018, *A.S. Kanthraj* 319847 (LWG); Pankhabari, 10.1868, *S. Kurz s.n.* (CAL [Acc. no. 332131]); Pankhabari, 2500 ft, *s.d.*, *s.coll. s.n.* (CAL [Acc. no. 332121]); *s.loc.*, 1878, *G. King s.n.* (CAL [Acc. nos. 332125, 332126]); *s.loc.*, *s.d.*, *s.coll. s.n.* (CAL [Acc. nos. 332132, 332133]).

Notes: Hilliard and Burtt (1995) originally described *D. triplotrichus*, based on specimens collected by J.S. Gamble from Pankhabari in Darjeeling of West Bengal state (previously in Sikkim) in August 1880. Besides the types, seven more sheets of *D. triplotrichus* were located in CAL. Of these, four sheets contained specimens collected in and around Pankhabari, by Thomas Thomson in 1857, Wilhelm Sulpiz Kurz in 1868, George King in 1877 & 1878, and the fifth one by an unknown collector without collection date. These were earlier identified and stored as '*D. obtusa* Wallich'. The

Table 1. Comparison of distinguishing characters between *Didymocarpus cinereus* and *D. triplotrichus*.

Characters	<i>D. cinereus</i> D. Don	<i>D. triplotrichus</i> Hilliard
Length of petiole	6–21 cm long	2–8 cm long
Leaf surface	Long spreading hairs absent on both surfaces	Long spreading hairs present on upper surface and also confined to veins on lower surface
Inflorescence	Not over-topping the leaves; peduncle shorter than petioles	Always over-topping the leaves; peduncle longer than petioles
Corolla	Purple or bluish-purple with prominent white striations on lobes; glandular hairy outside	Purple without white striations on lobes; glabrous outside
Stamen	Filaments sparsely glandular puberulent; anthers bearded	Filaments and anthers glabrous

remaining two sheets in CAL (determined wrongly as '*D. cinerea* D. Don' by K. Biswas in 1937) are without any information on the locality, collector, and date of collection.

Didymocarpus triplotrichus is hitherto represented only from the types and the few older specimens in CAL. Other than the protologue and a brief description provided by Hilliard (2001) in Flora of Bhutan (with reference to Darjeeling material only), *D. triplotrichus* has not been dealt with finer details in any taxonomic treatises. The report of *D. triplotrichus* by Sinha and Datta (2016) is ambiguous as the sole specimen cited by them, N.R. Mondal & P. Singh 13484 (BHSC) collected in Sikkim, East District, Machong, Rikep, Barapathling on 7 July 1991, actually represents *D. andersonii*. Interestingly, they cited the same specimen under *D. andersonii*. Roy (2017) also wrongly included N.R. Mondal & P. Singh 13484 (BHSC) under *D. triplotrichus*.

During a field survey conducted in Darjeeling Himalaya in August 2018, one of the authors (KAS) collected *D. triplotrichus* from Pankhabari. The present collections, made at two locations along the Pankhabari road at 950–1065 m elevation range, represented a recollection of this narrow endemic species 138 years after the type collections.

Didymocarpus triplotrichus is characterized by the presence of three types of hair on the plant, *i.e.*, short acute, long spreading and glandular hairs. The species exhibits reciprocal enantiostyly, where the style and stamens are deflected to the left or right in opposite directions. Like in the closely allied *D. cinereus*, monomorphic enantiostyly is observed in *D. triplotrichus*, in which both left- and right-styled flowers are found in the same inflorescence of a plant. This species was found in small populations represented by about 20 mature individuals. It faces a high risk of becoming extinct and therefore needs urgent threat status assessment and conservation measures.

Lectotypification of *Didymocarpus albicalyx*

Didymocarpus albicalyx C.B. Clarke in A. DC. & C. DC., Monogr. Phan. 5(1): 78. 1883. *Lectotype* (designated here): INDIA, East Himalaya, Sikkim,

s.d., Griffith 3839 (K [K00858157 digital image!], isolectotypes CAL [Acc. no 332191!], G [G0041 8553, G00492372 digital images!], K [K000939456 digital image!], M [M0185736 digital image!], P [P04060362, P04060367 digital images!], S [S110576 digital image!], W [W0050224 digital image!]).

Fig. 5

Notes: *Didymocarpus albicalyx* was originally described by Clarke (1883) with the following diagnostic characters: "leaves ovate, serrate, and villous above; cymes many flowered, glabrous or sparsely pilose; calyx small, deeply lobed, white, with obovate, obtuse lobes; capsule 15 mm long, sub-sessile". According to Clarke (1883, 1885 ["1884"]), the Sikkim Himalayan specimens described and illustrated as *Didymocarpus villosus* D. Don (as "*villosa*") by Clarke (1874) belonged to *D. albicalyx*, whereas *D. villosus* D. Don (1825) represented a distinct species presently known to occur only in Nepal and China.

In the protologue of *D. albicalyx*, Clarke (1883) cited three specimens: (i) Himalaya centralis, Sikkim, alt. 2000 m, Griffith 3839 (K, DC, G-BOISS); (ii) *J.D. Hooker, s. n.* (K, DC, P, W, G-BOISS, etc.), and (iii) Nepal, prope flumen Tambur, *J.D. Hooker, s. n.* (K). In addition to these, Clarke (1883) cited "*Didymocarpus* sp. n. 17 in Herbarium Indiae orientalis of J.D. Hooker & T. Thomson", which also would qualify as the original materials of *D. albicalyx*. All the above specimens represent the syntypes of *D. albicalyx* (ICN Art. 9.6; Turland *et al.*, 2018). The authors traced 25 sheets of these syntypes in nine herbaria (BM, CAL, G, K, M, MH, P, S and W). Amongst these, Griffith 3839 (K [K00858157]), with four fragments mounted on one sheet, the two upper left and right specimens with fruits, and the lower left and right ones with flowers and young fruits, was found a good match with Clarke's original diagnosis and description of *D. albicalyx*. This sheet also carried Clarke's annotation in his own handwriting: "*Didym. albicalyx* C.B. Clarke, D. Don says *inter alia* that his *villosa* was large flowered and his type of *villosa* at the Mus. Brit. totally differs from this". The sheet



Fig. 5. Lectotype of *Didymocarpus albicalyx* C.B. Clarke (K000858157). © The Board of Trustees for the Royal Botanic Gardens, Kew. Reproduced with permission.

Griffith 3839 in K is designated here as the lectotype and its duplicates in CAL, G, K, M, P, S and W as isolectotypes of *D. albicalyx*.

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