

A NEW BHUTANESE *GASTROCHILUS* (ORCHIDACEAE), AND ANOTHER TRANSFER IN INDIAN *CYLINDROLOBUS*

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Abstract. *Gastrochilus pearcei* is described as new from Bhutan, and *Eria khasiana* is transferred to *Cylindrolobus*.

Keywords: India, Bhutan, *Cylindrolobus*, *Gastrochilus*, new species, generic transfer

Ongoing literature and herbarium studies of various orchids found in Bhutan and India have revealed a new *Gastrochilus* species and the need to transfer *Eria khasiana* to *Cylindrolobus*, as part of continuing studies of the latter genus begun by the first author in 2014.

Cylindrolobus Blume, Fl. Javae Praef.: 6. 1828.

Type species: *Ceratium compressum* Blume.

This genus of tribe Podochileae, subtribe Eriinae, has about 80 species distributed from Sri Lanka and India, through Malesia to Papua New Guinea. They are caulescent plants with stems up to 3 m long, but generally shorter, the flowers are borne in short axillary racemes, usually with prominent and showy peduncular bracts. The relatively attractive flowers are often in shades of white, yellow, or pink, sometimes with spotting. Key identification characters lie in the labellum, which may be ornamented with various keels, the latter often pubescent. Taxonomy of the group is hampered by the tenderness of the flowers, the parts of which when pressed can adhere to each other, rendering it difficult to separate them without causing damage.

Previously, Ormerod and Kumar (2018) transferred *Eria lindleyi* Thwaites to *Cylindrolobus* for nomenclatural reasons, since the name *C. bicolor* (Lindl.) Rauschert had been wrongly used for that species. The combination below is made for taxonomic reasons, since it seems obvious to us that *Eria khasiana* is a distinct species, worthy once more of recognition.

Cylindrolobus khasianus (Lindl.) Ormerod & C.S. Kumar, *comb. nov.*

Basionym: *Eria khasiana* Lindl., J. Proc. Linn. Soc., Bot. 3: 59. 1858.

TYPE: INDIA. Khasia, W. Griffith *s.n.* (Holotype: K-L, not seen).

Distribution: India.

Hooker (1890) united *Eria khasiana* with *E. clavicaulis* Wall. ex Lindl., and this reduction has been accepted ever since. In view of our studies of the genus *Cylindrolobus*, it seems that two outwardly similar taxa have been confounded

and that Lindley's original position is correct. Hooker (1895) depicted flowers from the type of *E. khasiana* showing it to have a labellum with two lamellate keels near the apex of the hypochile, between which is a short, obovate, medially sulcate callus. The aforementioned figure also depicts a plant and a flower of the true *E. clavicaulis*, showing its distinctive pink-margined labellum sidelobes and lanceolate medial keel on the epichile. Seidenfaden (1982) published a more-detailed sketch of the flowers, which shows the thick medial keel on the hypochile terminated by two tubercles, and then continuing onto the epichile as a lanceolate keel. This is in agreement with Lindley's description in the protologue of *E. clavicaulis*.

There are also further important differences in the shape of the lip that distinguish the two. *Cylindrolobus clavicaulis* (Lindl.) Rauschert has almost truncate lateral lobes that spread at right angles, and therefore the epichile is unflanked by them when the lip is flattened. In *C. khasianus* the sidelobes are more rounded, and when the lip is flattened the sidelobes are subequal with the apex of the epichile.

Gastrochilus D. Don, Prodr. Fl. Nepal.: 32. 1825.

Type species: *Aerides calceolaris* Buch.-Ham. ex J.E. Sm.

This is a genus of Aeridinae with about 63 species and one natural hybrid distributed from Sri Lanka and India to Indonesia and the Philippines. The center of diversity is China, where about 40 species have been found, about half of which are endemic. The plants are epiphytic herbs with short to elongate stems, with axillary inflorescences of one to several flowers, the flowers are variously colored, often in shades of yellow to green, usually variously spotted with brown or red, the lip usually has a large bowl-shaped to conical hypochile, and at its front is a variously shaped and adorned epichile, the column is short and broad.

Tsi (1996) published a preliminary revision of *Gastrochilus*, dividing it into three sections, section *Gastrochilus*, section *Caespitosi* Tsi, and section *Microphyllae* (Benth. & J.D. Hook.) "Seidenf." Subsequent molecular studies (Liu et al., 2019) show that there may be at least five sections, two of which appear to be undescribed.

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The same study also indicated that section *Microphyllae* needed recircumscribing and that taxa with a pubescent (vs. glabrous) labellum epichile were better placed in section *Caespitosi*.

Gastrochilus D. Don section *Microphyllae* (Benth. & J.D. Hook.) Tsi, *Guihaia* 16, 2: 143. 1996.

Basionym: *Saccolabium* Blume series *Microphyllae* Benth. & J.D. Hook., *Gen. Pl.* 3: 579. 1883.

Type species: *Saccolabium distichum* Lindl.

Homotypic synonyms: *Saccolabium* Blume section *Microphyllae* (Benth. & J.D. Hook.) Pfitz., in Engler & Prantl, *Nat. Pflanzenfam.* 2, 6: 213. 1889.

Saccolabium Blume section *Distichophyllae* J.D. Hook., *Fl. Brit. Ind.* 6: 55. 1890 *nom. illeg.*

Type species: *Saccolabium distichum* Lindl.

Saccolabium Blume section *Disticha* J.D. Hook., *Fl. Brit. Ind.* 6: 64. 1890 *nom. illeg.*

Type species: *Saccolabium distichum* Lindl.

Tsi (1996) credited the transfer of section *Microphyllae* to *Gastrochilus* to Seidenfaden (1988), but no such transfer was made in that publication. The combination should be attributed to Tsi (1996), since he fully cites the basionym with a minor error in rank (section instead of series). According to Lui et al. (2019), section *Microphyllae* is defined by its pendent habit, leaves less than 5 cm long, flowers mostly with sepals about 5 mm long or less, and the lip with a glabrous epichile. The new species belongs to section *Microphyllae*, which in its revised circumscription contains about 14 species, namely, *G. affinis* (King & Pantl.) Schltr., *G. alatus* X.H. Jin & S.C. Chen, *G. corymbosus* A.P. Das & Chand, *G. distichus* (Lindl.) Kuntze, *G. dulongjiangensis* Q. Liu & J.Y. Gao, *G. fargesii* (Kraenzl.) Schltr., *G. fuscopunctatus* (Hayata) Hayata, *G. kadooriei* P. Kumar et al., *G. matsuran* (Makino) Schltr., *G. nepalensis* Raskoti, *G. pearcei* Ormerod & C.S. Kumar, *G. prionophyllus* H. Jiang, D.P. Ye & Q. Liu, *G. pseudodistichus* (King & Pantl.) Schltr., and *G. sonamii* Lucksom.

Gastrochilus pearcei Ormerod & C.S. Kumar, *sp. nov.*

TYPE: BHUTAN. Eastern part, Dongala, west side, 2590 m, 23 April 1949, F. Ludlow, G. Sherriff & J. H. Hicks 20512 (Holotype: A; Isotypes: BM, E, images seen). Fig. 1.

Related to *Gastrochilus distichus* (Lindl.) Kuntze but the flowers differ in having a labellum with broadly rounded (vs. truncate), raised hypochile sidelobes, and a bilobed (vs. entire) epichile.

Epiphytic herb. Roots emerging from base of stem, semi-applanate, white, glabrous, 0.5–1.7 mm wide. Stem terete,

simple to occasionally branching, subdensely leafy, 145–163 mm long, 0.8–1.5 mm thick; internodes 4 mm long. *Leaves* obliquely lanceolate, apex variably tridentate, tips acute to obtuse, thinly fleshy, 13–20 × 3–5 mm; leaf sheaths tubular-infundibuliform, truncate. *Inflorescence* axillary, 11–25 mm long; peduncle 8–21 mm long, 0.5 mm thick, widening to 1.2 mm wide below rachis; peduncular bract one, about midway on peduncle, short, ca. 1.8 mm long; rachis 2- to 3-flowered, 3–4 mm long; *floral bracts* ovate to ovate-lanceolate, acute to subacute, 1.2–2.8 × 1.5–1.8 mm. *Flowers* “green, lip white, spotted purple.” *Pedicel with ovary* clavate, 3.2 mm long. *Dorsal sepal* ovate-elliptic, obtuse-subacute, concave, 5 veined, 4.75 × 3.00 mm. *Lateral sepals* obliquely ovate-elliptic, subacute, saccate at base, midvein with a lamellate keel that becomes thicker toward the apex, 5 veined, 5.75 × 3.00–3.10 mm. *Petals* obliquely oblong-oblancheolate, subacute, 3 veined, 4.5 × 1.5 mm. *Labellum* 5 veined, trilobed, joined to column for ca. 2 mm, ca. 7.5 × 7.2 mm spread; hypochile broadly and relatively shallowly subglobose, each side with an erect, shortly and broadly elliptic, broadly rounded sidelobe (sides asymmetric, one 3 × 2 mm wide, the other 4.2 × 2.5 mm wide); epichile transversely elliptic, deeply obtusely bilobed, medially with a triangular, obtuse, bipartite callus that arises from the apex of the hypochile margins, 2.5–2.7 × 4.5–4.7 mm, lobules to 2.7 × 2.5 mm. *Column* stout, 3.3 mm long, 1.9 mm wide laterally; anther cap with a minutely serrate front edge.

Distribution: Bhutan.

Habitat: dense rainforest, 2590 m.

Etymology: named after Dr. Nicholas R. Pearce, for his contributions to Bhutanese orchidology as co-author of the *Orchids of Bhutan*.

This species is seemingly indistinguishable vegetatively from *Gastrochilus distichus*, and indeed the type number was listed as that taxon in the *Orchids of Bhutan* (Pearce and Cribb, 2002). However, *G. pearcei* can be distinguished from *G. distichus* and most other taxa in section *Microphyllae* by its labellum having raised sidelobes on the hypochile (vs. truncate hypochile sides without lobes). *Gastrochilus nepalensis* also has raised sidelobes but these are subquadrate and the hypochile is conical (not subglobose). *Gastrochilus pearcei* further differs from *G. distichus* in having the labellum hypochile relatively longer than wide (excluding lobes), whereas in *G. distichus* it is the opposite, the hypochile being shorter than wide. There are also other differences in epichile shape and ornamentation: that of *G. pearcei* is bilobed with two thick medial protrusions arising from the hypochile margins and forming a triangular extension, whereas *G. distichus* has an entire epichile with two well-separated conical calli.

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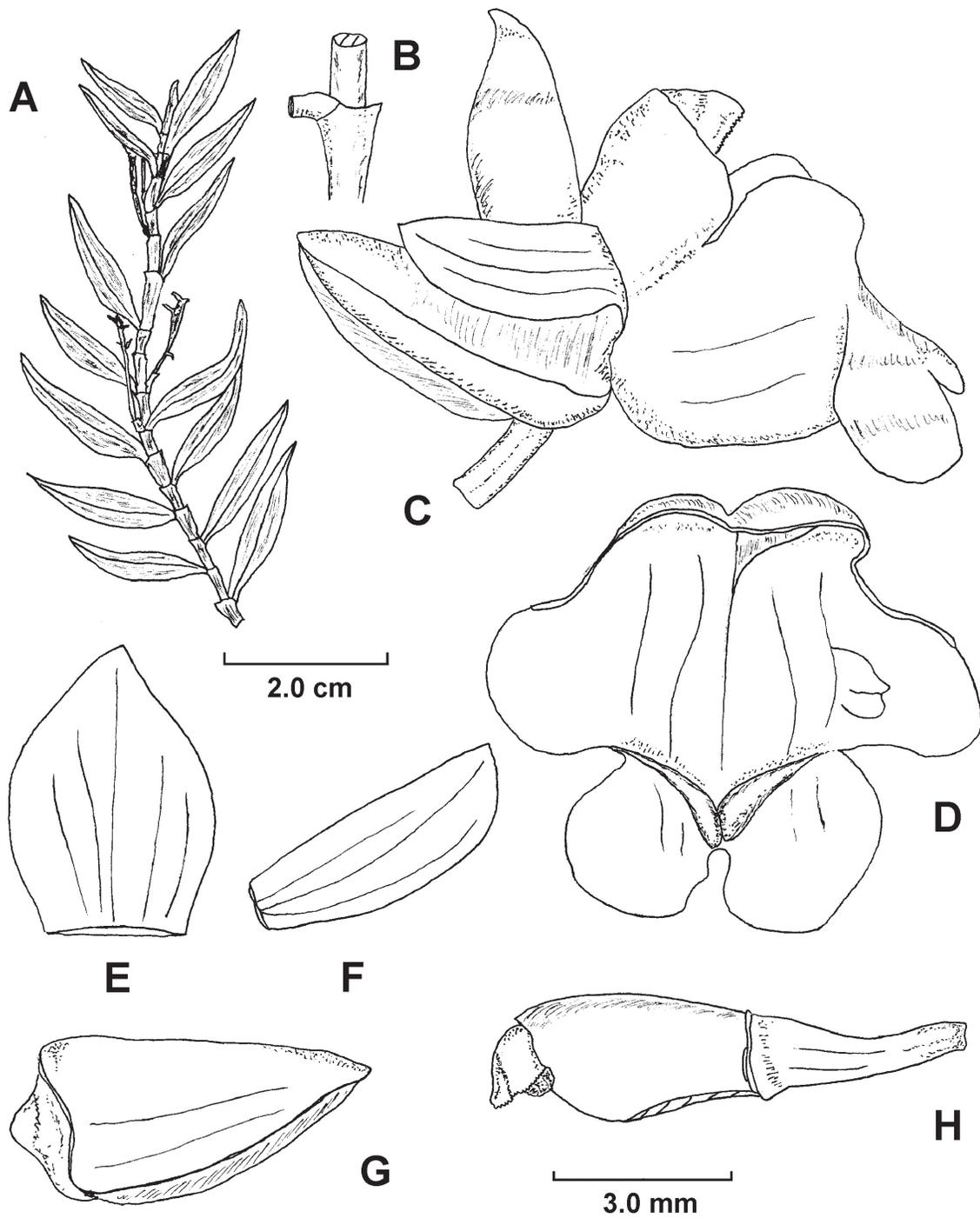


FIGURE 1. *Gastrochilus pearcei* Ormerod & C.S. Kumar. **A**, stem, upper part; **B**, stem section; **C**, flower; **D**, labellum; **E**, dorsal sepal; **F**, petal; **G**, lateral sepal; **H**, column. Drawn by P. Ormerod from the holotype.