

## Lectotypification of *Habenaria dyeriana* King & Pantl. (Orchidaceae)

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A lectotype is designated for *Habenaria dyeriana* King & Pantl. (Orchidaceae) as an earlier typification is not in accordance with the Melbourne Code. A detailed description of *Platanthera dyeriana* (King & Pantl.) Kraenzl. ( $\equiv$  *Habenaria dyeriana*) is provided along with relevant photographs. Its conservation status in India and its affinity to some other species of *Platanthera* are discussed.

The genus *Platanthera* has 70–130 species (Jin & Efimov 2012) distributed mainly in temperate and subtropical areas of the northern hemisphere, in several mountain systems in tropical regions north of the equator, and sometimes south of the equator (in New Guinea and parts of Indonesia). To date, 15 species of *Platanthera* have been recorded from India, being mainly distributed in the Himalayan region and Western Ghats (Misra 2007). During a routine floristic survey in Khasi Hills in July 2010, Meghalaya, the authors Singh and Kumar collected a specimen of *Platanthera* which was identified as *P. dyeriana*, a narrowly distributed (India and China) and lesser known species. Further study revealed that there was also a need to typify its basionym *Habenaria dyeriana* King & Pantl. and therefore, a lectotype is here designated for that name. A detailed

description and photographs are provided to facilitate identification of the species.

King and Pantling (1896) described *Habenaria dyeriana* based on plants collected by Robert Pantling (no. 407) in August 1895 at 11 000 feet a.s.l. (ca. 3350 m, but given “12,000 feet” in the protologue) from Lachen Valley, Sikkim, India. Twelve specimens bearing those details and considered to be types of *H. dyeriana* are presently held in AMES, CAL, K, L, LE and W. There are five more specimens (labelled as ‘Type specimen’) preserved at BM, E, K, P, and LE with the same collection number (407) collected by Pantling in July 1897 from Tankra la, Sikkim but they do not belong to original material of *H. dyeriana* as they post-date the protologue. Pearce and Cribb (2002) cited the CAL-specimen (Pantling 407A) as the holotype

of *H. dyeriana*, and that was followed by Jin and Efimov (2012) as well as Efimov (2013).

Pantling frequently gave the same number to specimens of a particular species gathered at different times and places, thus Pearce and Cribb (2002) tried to distinguish between the two different sets of *Pantling 407* by listing the types as 407A. However there are 12 sheets of *Pantling 407* (407A *sensu* Pearce & Cribb 2002) known so far, none of which was specifically designated as type by King and Pantling (1896, 1898). Therefore, the term “holo.” used by Pearce and Cribb (2002) is not correct and also not correctable according to the Art. 9.9 of Melbourne Code (McNeill *et al.* 2012). Further, in CAL we found seven type specimens (CAL 741–CAL 747) of *H. dyeriana* instead of a single specimen as cited by Pearce and Cribb (2002). Art. 9.17 of the Melbourne Code (McNeill *et al.* 2012) defines that a designation of a lectotype or neotype that later is found to refer to a single gathering but to more than one specimen must nevertheless be accepted (subject to Art. 9.19), but may be further narrowed down to one of those specimens by way of a subsequent lectotypification or neotypification. Therefore, the earlier typification by Pearce and Cribb (2002) is not acceptable because they did not use the appropriate phrase essential for lectotypification, and in CAL there is more than one sheet of type material of *H. dyeriana*. Therefore, we are designating the CAL specimen (*Pantling 407*, CAL 744) as lectotype of *P. dyeriana* (Fig. 1C) as it fits best the description provided in the protologue. That specimen is also associated with two hand-written notes (Fig. 1D) by Robert Pantling, one of which strongly supports its selection as lectotype.

***Platanthera dyeriana* (King & Pantl.) Kraenzl. (Figs. 1 and 2)**

Orchid. Gen. Sp. 1: 636. 1899.

*Habenaria dyeriana* King & Pantl., J. Asiat. Soc. Bengal 65: 133. 1896. — LECTOTYPE (designated here): India. Sikkim, Lachen Valley, 11 000 ft, Aug. 1895, *Pantling 407* (CAL 744!); isolectotypes CAL 741!, CAL 742!, CAL 743!, CAL 745!, CAL 746!, CAL 747!; AMES, photo!; K, photo!; L, photo!; LE, photo!; W, photo!

ETYMOLOGY: The generic name is derived from the Greek words *platy* (broad) and *anthera* (anther) and the specific epi-

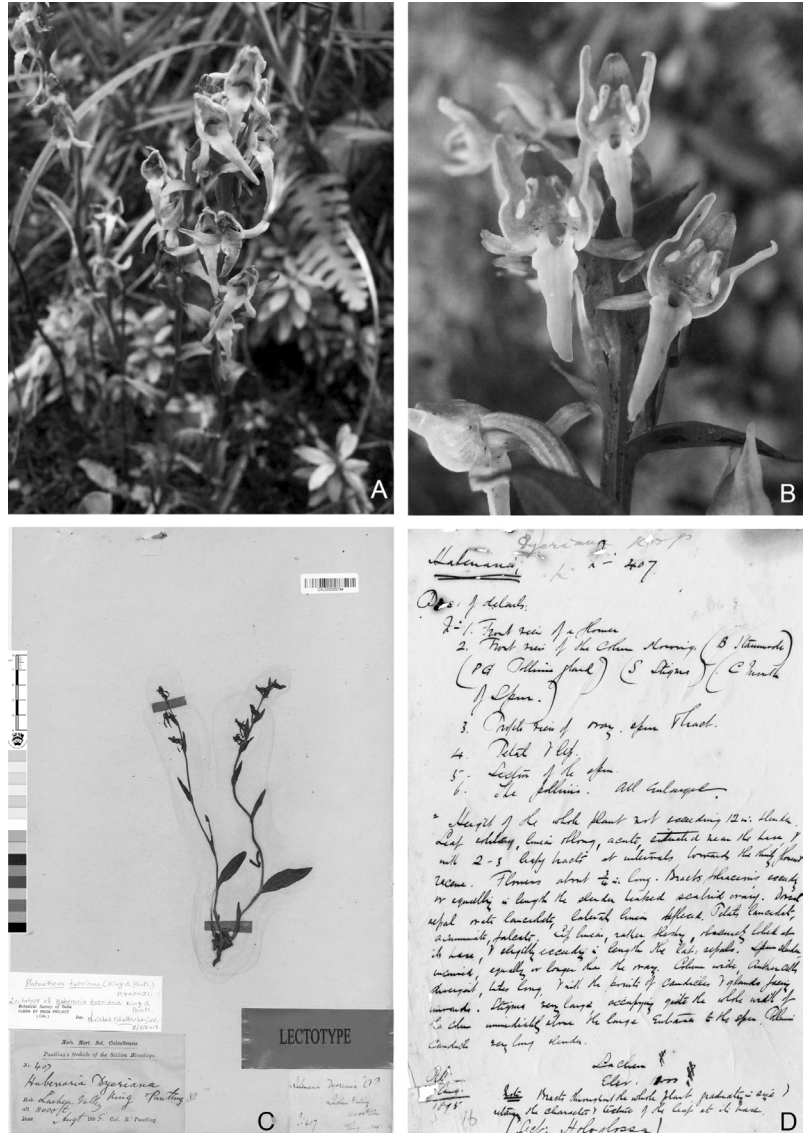
thet is after Sir William Turner Thiselton-Dyer (1843–1928), a British botanist, and the third director of the Royal Botanic Gardens, Kew.

Plant erect, 10–18(35) cm tall. Tuberoïd thick, fusiform, hairy. Stem slender, 6–9 cm long, 1–2 mm thick, with 1–2 overlapping basal sheaths. Leaves 3–4, scattered, distantly placed along stem, oblong-lanceolate, 1.5–4(4.5) × 0.3–1.6 cm, gradually decreasing in size towards apex, uppermost bract-like, subacute at apex, sessile, sheathing at base. Inflorescence 2–6(9) flowered, lax raceme; rachis 3–6(9) cm long; floral bracts foliose, ovate-lanceolate to elliptic-lanceolate, 0.4–1.5 × 0.2–0.3 cm, surface glabrous, finely hairy at margins. Flowers 1–1.5 cm long (including ovary), green. Dorsal sepals erect, ovate-lanceolate, 4–5 × 1.5–3 mm, forming a hood on column, obtuse at apex, green, glabrous, with 1 prominent median vein and 2 faint lateral veins; lateral sepals narrowly oblong, 5–6.5 × 1.2–1.5 mm, reflexed, green, glabrous, 1-veined. Petals erect, narrowly lanceolate, 5.5–7 × 1.4–2.2 mm, subacute to obtuse at apex, oblique at base, pale green, glabrous, 2-veined. Lip fleshy, simple, straight, deflexed, narrowly oblong-triangular, 7–9 × 1.3–2.2 mm (at base), subacute to acute at apex, apex sometimes shortly reflexed, 2-auriculate at base, inner margins weakly undulate, pale green, spurred; spur slender, 0.8–1.3 cm long, incurved, laterally compressed. Column ca. 1.5 mm long, ca. 3 mm broad, anther-cap clavate, ca. 1.5 mm long; pollinia 2, ovoid, ca. 1 × 0.8 mm, caudicles ca. 2 mm long, slightly curved, stigma conjoined, transversely elliptic-oblong, large, nearly as broad as column, placed above opening of spur, pale yellowish-green, brownish towards maturity; staminodes large. Flowering July–August.

HABITAT: The species thrives on moist slopes by forest edges between 1300–3900 m a.s.l.

DISTRIBUTION: India [Arunachal Pradesh (Chowdhery 1998), Meghalaya, Sikkim], China (Jin & Efimov 2012).

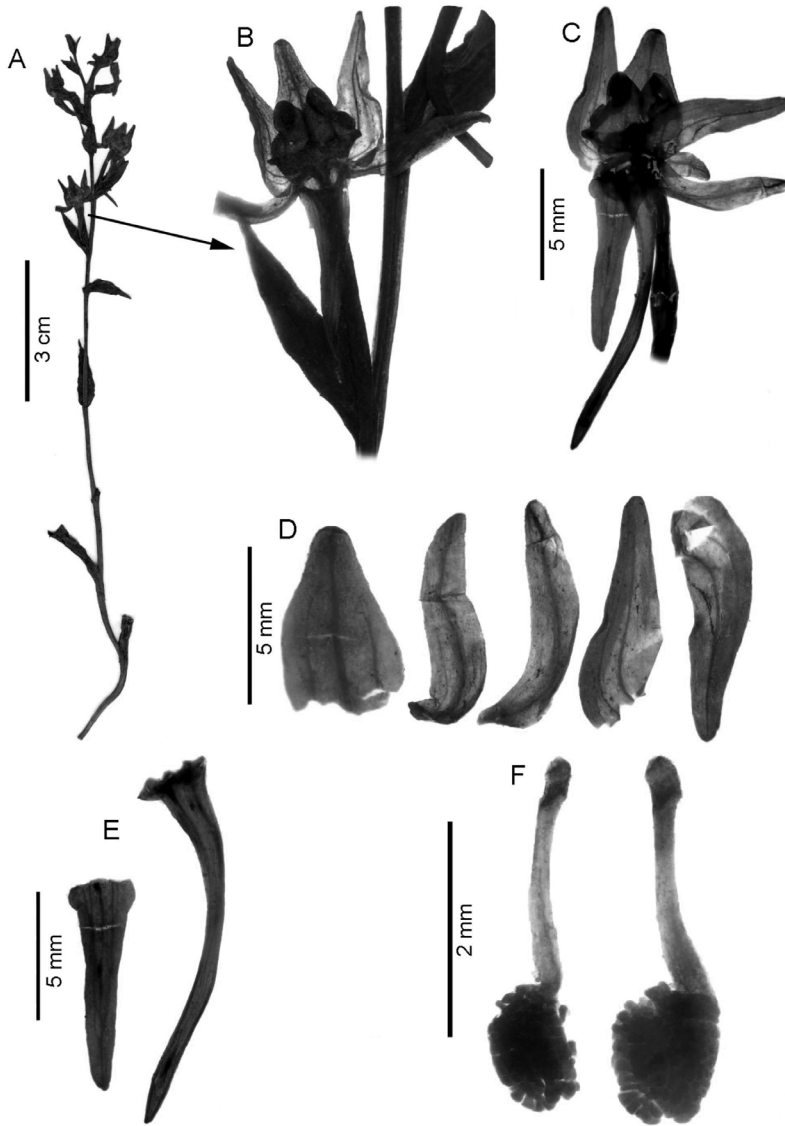
In India the species is known to occur only in Lachen Valley of North Sikkim and East Khasi Hills of Meghalaya. Pantling collected the species twice from two localities in North Sikkim, once in 1895, i.e. before describing *H. dyeriana* and again in 1897, i.e. after describing the species. Based on the specimens (including the types) in different



**Fig. 1.** *Platanthera dyeriana* (King & Pantl.) Kraenzl. — **A:** Habit. — **B:** Close-up of flowers. — **C:** Lectotype of *Habenaria dyeriana* King & Pantl. (CAL). — **D:** Hand-written note by Robert Pantling associated with the lectotype of *H. dyeriana*.

herbaria we can assume that Pantling collected no more than 20 specimens (mature individuals) from Sikkim. Pradhan (1976) followed King and Pantling (1896, 1898), but by mistake, cited the locality as “Lachung Valley of Sikkim”, instead of Lachen Valley. The occurrence of *P. dyeriana* in ‘Kameng, Siang and Subansiri’ districts of Arunachal Pradesh mentioned by Chowdhery (1998) could not be verified as no specimens were cited in Chowdhery’s work. Further, Chowdhery (1998) included the species in the flora of Arunachal Pradesh but Rao (2007) excluded it.

We have found ten mature individuals in Meghalaya belonging to a single population. We can assume that *P. dyeriana* may be treated as Critically Endangered (CR)/Endangered (EN) in India. However, due to insufficient information we are unable to determine the reduction of population size, EOO (Extent of Occurrence), AOO (Area of Occupancy), total number of mature individuals in all populations etc., needed for convincingly assigning the species under any threat category of IUCN (2012). Therefore, we are presently recognizing *P. dyeriana* as a ‘Data



**Fig. 2.** *Platanthera dyeriana* (King & Pantl.) Kraenzl. (from S.K. Singh & Ramesh Kumar 104025, CAL; dissected from a dry specimen). — **A:** Habit (without tuberoids). — **B:** Flower with bract (front view). — **C:** Flower (side view). — **D:** Dorsal sepal, lateral sepals and petals (from left to right). — **E:** Lip (left) and spur (right). — **F:** Pollinaria.

Deficient (DD)' species in India. It is worth mentioning that most of the reported localities of *P. dyeriana* in India are greatly affected due to anthropogenic activities such as road construction, settlement, mining, tourism, etc., and therefore the species is under considerable threat, at least in Meghalaya.

*Platanthera dyeriana* can be easily identified by its reduced leaves, a character rare in the genus. Judging from morphology, the species is most closely related to *P. concinna*, which is known from Khasi Hills, India. The two species are similar in having reduced leaves, but *P.*

*concinna* is more robust (the stem in herbarium specimens is not curved and not as thin as in *P. dyeriana*), the inflorescence is denser, the flowers are more numerous [(7)10–30 vs. 2–6(9) in *P. dyeriana*] and 4–6(8) bract-like leaves (vs. 2–4 in *P. dyeriana*) are present below the inflorescence (Jin & Efimov 2012). *Platanthera dyeriana* also resembles *P. sikkimensis*, but can be easily distinguished by having smaller leaves 1.5–4(4.5) cm long, the lower bracts not exceeding the flowers, and smaller flowers with sepals 4–6.5 mm long and lip ca. 8 mm long. *Platanthera sikkimensis* has the leaves 5–8 cm long, the

lower bracts exceeding the flowers, and larger flowers with sepals 8–10 mm and lip ca. 11 mm long (Jin & Efimov 2012).

ADDITIONAL SPECIMENS EXAMINED: — **India.** Meghalaya: East Khasi Hills district, Laitlynkot, *R.C. Thakur 1768* (K); East Khasi Hills district, near Mawsynram, *S.K. Singh & Ramesh Kumar 104025* (CAL); Sikkim: North District, below Tamkra Ia, *R. Pantling 407* (BM, photo; E, photo; K, photo; P, photo; LE, photo).

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