

A NEW SPECIES OF *DENDROBIUM* SECT. *CRINIFERA* (DENDROBIEAE) FROM THAILAND

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ABSTRACT. A new species of *Dendrobium* sect. *Crinifera* is described from Thailand. The late Peter O’Byrne is appropriately credited for his important preparatory work for our study and for coining the name of the new species, *D. krabiense*. Apparently endemic to southern Thailand, *D. krabiense* is similar to *D. pardalinum* but differs in the lip mid-lobe being distinctly clawed and in the lip ornaments only consisting of two lateral keels that extend from near lip base to claw of mid-lobe. *Dendrobium krabiense* is also similar to *D. phuketense* but differs in having larger, spotted flowers with a proportionally longer mentum. The material here referred to *D. krabiense* was previously misidentified as *Flickingeria pallens* (now considered a synonym of *D. pardalinum*).

KEYWORDS / PALABRAS CLAVE: *Dendrobium krabiense*, endemism, endemismo, *Flickingeria*, Orchidaceae, sistemática, systematics, taxonomía, taxonomy

Introduction. *Dendrobium* sect. *Crinifera* Pfitzer of 1889 (Pfitzer 1888–1889) was first described as *Desmotrichum* Blume in 1825 (Blume 1825–1826). However, noting that Blume’s name was illegitimate, Hawkes (1961) proposed the new generic name *Flickingeria* A.D.Hawkes for this group of species that are distributed from India to Samoa (Lavarack *et al.* 2000). For the next many years, the group was almost consistently recognised as genus *Flickingeria*, but following a series of DNA-based phylogenetic studies demonstrating *Flickingeria* to be nested in *Dendrobium* Sw. (e.g., Burke *et al.* 2008, Yukawa *et al.* 1993, 2000), Schuiteman (2011) advocated the resurrection of *Dendrobium* sect. *Crinifera* to accommodate all the species previously treated under *Flickingeria*. This solution was implemented in Genera Orchidacearum (Pridgeon *et al.* 2014).

Ridley (1896) published a description and proposed the name *Dendrobium pallens* Ridl. for a new species based on material in SING, probably originating from Thailand (for details, see O’Byrne 2019: 55). The species name was illegitimate due to the existence of *D. ×pallens* Lawr. ex B.S.Williams of 1894, but Kränzlin (1910) legitimised the epithet when formally recognising Ridley’s species as *Desmotrichum pallens* Kraenzl. Hawkes (1961:

457) published the new combination *Flickingeria pallens* (Kraenzl.) A.D.Hawkes. This name became widely accepted for many years, but the true taxonomic identity of Ridley’s plant remained unresolved until O’Byrne (2019), based on a thorough morphological analysis of comprehensive material from Peninsular Malaysia, convincingly referred it to *Dendrobium pardalinum* Rchb.f. of 1885.

However, O’Byrne (2019) also realised that Seidenfaden’s (1980) interpretation of *F. pallens* was in conflict with the type material and the protologue. He concluded that the more recent collections from Thailand on which Seidenfaden (1980) had based his description and illustrations should be described as a new species. We discussed this issue with Peter O’Byrne shortly before his passing in 2018, and during our correspondence, O’Byrne proposed the name *Dendrobium krabiense* for the new species. Based on our discussion with O’Byrne and our own examination of relevant herbarium material, we agree in his taxonomic finding, considering the undescribed species most morphologically similar to *D. pardalinum* and *D. phuketense* Schuit. & Peter B.Adams. Consequently, we here describe the new species, appropriately crediting O’Byrne for his important preparatory work and for coining the name.

Materials and methods. We examined all material of *Flickingeria pallens* sensu Seidenf. in herbaria BK, BKF, C and K. For checking and characterising the delimitation of the newly described species, we also examined material of *Dendrobium pardalinum* in the same range of herbaria and *D. phuketense* in C and K. Using a ruler and an object micrometer under a low-power binocular microscope for measuring vegetative and floral organs, respectively, we prepared a morphological description of the new species. As a supplement to the herbarium studies, we consulted Seidenfaden's unpublished sketches of relevant taxa in the archive of the Natural History Museum of Denmark.

TAXONOMIC TREATMENT

Dendrobium krabiense P.O'Byrne ex H.A.Pedersen & Suddee, *sp. nov.* (Fig. 1–2).

TYPE: THAILAND. Krabi province: Laem Nang, 16 February 1966, flowering in cultivation 25 June 1977, Seidenfaden & Smitinand GT 6465 (holotype: C).

DIAGNOSIS: *Dendrobium krabiense* is similar to *D. pardalinum* but differs in the lip mid-lobe being distinctly clawed (*vs.* sessile) and in the lip having two lateral keels extending from near lip base to claw of mid-lobe (*vs.* one median and two lateral keels extending from near lip base to near mid-lobe apex). *Dendrobium krabiense* is also similar to *D. phuketense*, but differs in having larger, spotted flowers with a mentum that is proportionally longer in relation to the dorsal sepal.

Plant lithophytic or epiphytic; rhizome creeping, 1.5–3.2 mm in diameter, with 1–2 internodes, each 3–4 mm long; stems branched, glabrous. *Pseudobulbs* oblong to fusiform, slightly compressed, 2.5–5.5 cm long, 0.5–1.2 cm in maximum diameter, sometimes longitudinally furrowed. *Foliage leaves* subsessile, oblong-lanceolate to lanceolate, 6.5–9.0 × 1.5–2.5 cm, coriaceous, glabrous, apex obtuse and minutely retuse. *Inflorescence* arising adaxially, 1-flowered; peduncle 4–6 mm long, glabrous, enveloped by several scale-like sheaths. *Flower* lasting less than a day; sepals, petals and mentum pale greenish yellow, with purplish markings near base on the dorsal surface, lip white with small purple markings scattered on disk and side lobes, column pale

yellow with red dots around the stigmatic cavity, ovary and pedicel yellow. *Sepals* spreading, recurved; dorsal sepal oblong, subacute to obtuse, 10.0–12.5 × 2.5–3.0 mm, glabrous; lateral sepals ovate-lanceolate, subacute to obtuse, 11–13 × 3–4 mm, glabrous, base oblique and broad; mentum at a right angle to ovary, 5–6 mm long, *ca.* 0.5 times as long as dorsal sepal, obtuse. *Petals* spreading, recurved, linear-lanceolate, (sub)acute, 8–10 × 1.5–2.0 mm, entire, glabrous. *Lip* porrect, trilobed, 10–12 mm long, glabrous; disk ornamented with a pair of lateral keels extending from near lip base to claw of mid-lobe where they become undulate lamellae; side lobes erect, incurved, obliquely triangular-ovate, obtuse, entire, apices 6.0–6.5 mm apart when folded down; mid-lobe distinctly clawed (claw broader than long), 7.5–8.0 mm in maximum width, bilobulate with obliquely obovate-oblong lobules measuring 2.9–3.2 × 2.6–3.0 mm, entire, basal margins strongly undulate. *Column* subterete, slightly incurved, *ca.* 3.0 mm long; column foot *ca.* 5.0 mm long. *Ovary* with pedicel semi-fusiform-terete, 3–5 mm long, glabrous.

ADDITIONAL MATERIAL EXAMINED: THAILAND. **Krabi province:** Koh Ngai. 11 February 1966, flowering in cultivation 26 February 1980, Seidenfaden & Smitinand GT 6430 (C). Koh Jum. 14 February 1966 (flowering in cultivation 2 October 1966, 26 October 1979), Seidenfaden & Smitinand GT 6461 (C). Laem Nang. 16 February 1966 (flowering in cultivation 23 June and 26 October 1979, 22 March 1980), Seidenfaden & Smitinand GT 6465 (C). **Nakhon Si Thammarat province:** Khao Luang. 750–1000 m, 25 January 1966, flowering in cultivation 16 May and 26 October 1979, Seidenfaden & Smitinand GT 6276 (C). 1000–1350 m, 26 January 1966, flowering in cultivation 30 January 1980, Seidenfaden & Smitinand GT 6327 (C). Thung Song. 13 February 1929, Put 2375 (BK, C, K). **Phangnga province:** Takua Pa. 400–500 m, 26 September 1963, Smitinand & Sleumer 1293 (K). **Satun province:** Satun. *ca.* 50 m. 27 December 1927, Kerr 464 (BK, K). **Surat Thani province:** Khao Rahu. 1 July 1966, Sakol 1175 (BK). Tha Kanon. *ca.* 300 m, 15 March 1927, Kerr 0394 (C, K).

DISTRIBUTION: Apparently endemic to peninsular Thailand and small nearby islands (Fig. 3). However, as *D. krabiense* occurs close to Thailand's southern border in Satun province, it should also be searched for in the northern part of Peninsular Malaysia.

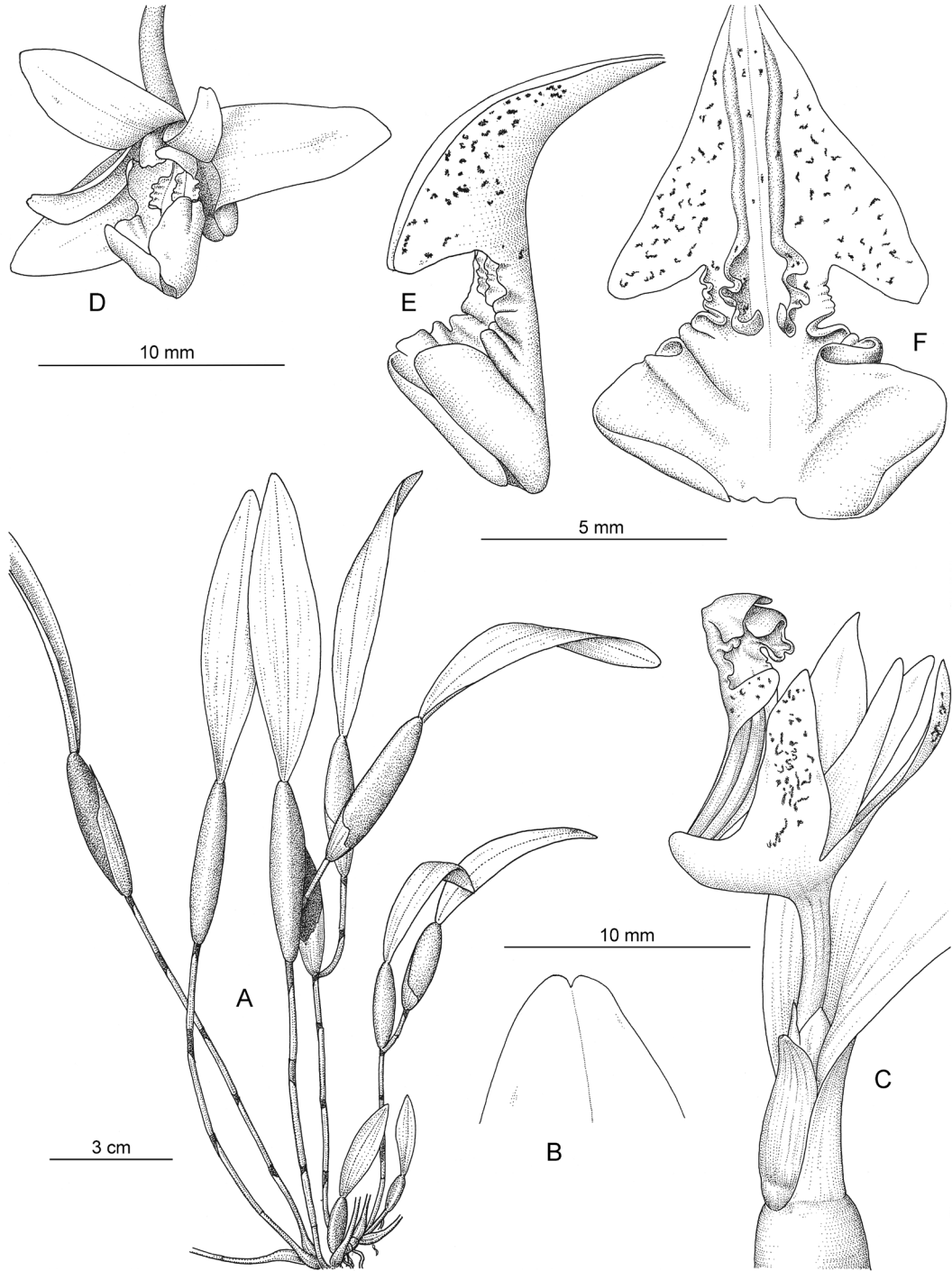


FIGURE 1. *Dendrobium krabiense* P.O'Byrne ex H.A.Pedersen & Suddee. A. Habit. B. Leaf tip. C. Inflorescence. D. Flower. E. Lip in side view. F. Lip in ventral view, side lobes artificially spread out. Drawn from the type *Seidenfaden & Smitinand* GT 6465 (C), *Seidenfaden & Smitinand* GT 6327 (A–B) and *Seidenfaden & Smitinand* GT 6276 (D–F). Illustration by Poul Juul; previously published in *Dansk Botanisk Arkiv* 34(1): 38 (1980).



FIGURE 2. *Dendrobium krabiense* P.O'Byrne ex H.A.Pedersen & Suddee. Flower of *Seidenfaden & Smitinand GT 6461*. Photograph by Gösta Kjellsson; previously published in *Dansk Botanisk Arkiv* 34(1): 96 (1980).

ECOLOGY: *Dendrobium krabiense* occurs in tropical evergreen rainforest from near sea level to *ca.* 1000 m in elevation. Here, it grows as an epiphyte on trees and as a lithophyte on limestone rocks.

PHENOLOGY: Probably flowering all the year round (flowering recorded in February, March, July, September and December in the wild – in cultivation also in January, May and October).

ETYMOLOGY: Named for Krabi province, the type locality.

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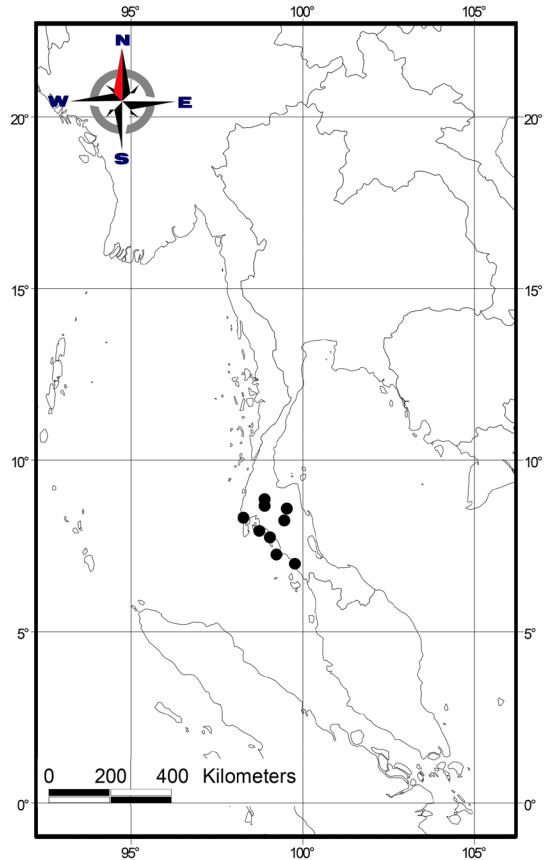


FIGURE 3. The known distribution of *Dendrobium krabiense* P.O'Byrne ex H.A.Pedersen & Suddee. Filled circles indicate individual occurrences documented by herbarium collections.

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AUTHOR CONTRIBUTIONS: HÆP conducted supplementary herbarium studies, consulted archive material, participated in the interpretation of the results, prepared the first draft of the manuscript and edited the illustrations. SS conducted most of the herbarium studies, participated in the interpretation of the results, prepared the distribution map and improved the manuscript.

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