

Short Communication

New records of Orchidaceae from Cambodia III

André SCHUITEMAN^{1,*}, Christopher RYAN², NUT Menghor³, NAY Sikhoeun³ & ATT Sreynak³¹ Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AB, United Kingdom.² Chester Zoo, Upton-by-Chester, Chester, CH2 1LH, United Kingdom.³ Department of Wildlife & Biodiversity, Forestry Administration, Ministry of Agriculture Forestry and Fisheries, 40 Preah Norodom Boulevard, Phnom Penh, Cambodia.

* Corresponding author. Email a.schuiteman@kew.org

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In continuation of Schuiteman *et al.* (2015) and Schuiteman *et al.* (2016), we here report and illustrate nine orchid species not previously recorded from Cambodia. All but one were found in sterile condition in the field and could only be fully identified once the living specimens collected in November 2013 and May 2015 flowered in the glasshouses at the Royal Botanic Gardens, Kew (UK). The one exception is *Cleisostoma birmanicum*, which was in full flower when we encountered it. The following are new generic records for Cambodia: *Diploprora*, *Sarcoglyphis*, and *Stichorkis*.

In the interests of conservation we do not provide exact localities. Global distribution data follow Govaerts *et al.* (2016), unless indicated otherwise. Vouchers of all specimens mentioned are kept in the Kew Spirit Collection.

Species recorded

Cleisostoma birmanicum (Schltr.) Garay (Kew cult. 2015-1358; Figs 1 & 2)

This monopodial epiphyte was found in flower on 15 May 2015, growing in a patch of scrub-like forest on the summit of Mt. Bokor at 1,000 m asl (above sea level). It was previously recorded from Myanmar, Thailand, China (Hainan), Laos (Schuiteman *et al.*, 2008) and Vietnam.

Dendrobium heterocarpum Wall. ex Lindl. (Kew cult. 2013-1685; Fig. 3)

Most of the species of *Dendrobium* sect. *Dendrobium*, to which *D. heterocarpum* belongs, are highly sought after by collectors, both for the horticultural trade and for traditional Chinese medicine (Schuiteman *et al.*, 2008). This may explain why we only found a single specimen of this species in evergreen forest in the southern foothills of the Cardamom Mountains, lying on a forest trail, with its roots cleanly detached from whatever its support had been. It looked as if it had been accidentally dropped by a collector. This is a widespread species, ranging from Sri Lanka and India throughout tropical continental Asia to the Philippines and Indonesia, as far east as Sulawesi.

Dendrobium oligophyllum Simond ex Gagnep. (Kew cult. 2015-1258; Fig. 4)

This small member of *Dendrobium* sect. *Distichophyllae* was found about 46 km north of Sen Monorom, Mondulkiri Province, growing as an epiphyte in dry, open forest at 315 m asl. It was previously recorded from Thailand, Laos, and Vietnam.

Diploprora championii (Lindl.) Hook.f. (Kew cult. 2013-1718; Fig. 5)

This small monopodial orchid was found as an epiphyte in rather dry primary evergreen montane forest with little undergrowth at ca. 895 m asl. It is interesting to note that this species and *C. birmanicum* mentioned above both have a similar forked appendage at the lip apex, the

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Fig. 1 *Cleisostoma birmanicum* (Schltr.) Garay. In situ, Mt. Bokor.



Fig. 3 *Dendrobium heterocarpum* Wall. ex Lindl. Flower. Kew cult. 2013-1685.



Fig. 2 *Cleisostoma birmanicum* (Schltr.) Garay. Flowers.



Fig. 4 *Dendrobium oligophyllum* Simond ex Gagnep. Flowering plant. Kew cult. 2015-1258.



Fig. 5 *Diploprora championii* (Lindl.) Hook.f. Flowering plant. Kew cult. 2013-1718.



Fig. 7 *Phalaenopsis difformis* (Wall. ex Lindl.) Kocyan & Schuit. Flowers. Kew cult. 2015-1166.



Fig. 6 *Oberonia falcata* King & Pantl. Inflorescence. Kew cult. 2015-1311.



Fig. 8 *Sarcoglyphis thailandica* Seidenf. Flowers. Kew cult. 2015-1147.



Fig. 9 *Stichorkis gibbosa* (Finet) J.J.Wood. Plant habit. Kew cult. 2015-1312.



Fig. 10 *Stichorkis gibbosa* (Finet) J.J.Wood. Inflorescence. Kew cult. 2015-1312.

function of which (if any) is unknown. This widespread species ranges from Sri Lanka through tropical continental Asia, including Laos (Schuiteman *et al.*, 2008), to Taiwan.

***Oberonia falcata* King & Pantl. (Kew cult. 2015-1311; Fig. 6)**

With its somewhat anthropomorphic flowers this species resembles *O. anthropophora* Lindl. and *O. rufilabris* Lindl., both of which may occur in Cambodia, although only the latter has so far been found there. *Oberonia falcata* is easily distinguished by the elongate stems, as opposed to the stemless, fan-shaped habit of the two other species, and also by the very short floral bracts, which are (much) longer than the ovary in the other species. It was found as an epiphyte in evergreen montane forest at 940 m asl on Mt. Bokor, Kampot Province. This species was previously recorded from NE India, Nepal, Myanmar, China (Yunnan), Thailand, Laos (Schuiteman *et al.*, 2008), Vietnam, and North Sumatra.



Fig. 11 *Thrixspermum pauciflorum* (Hook.f.) Kuntze. Flowers. Kew cult. 2015-1120.

***Phalaenopsis difformis* (Wall. ex Lindl.) Kocyan & Schuit. (Kew cult. 2015-1166; Fig. 7)**

Until recently this taxon was better known as *Ornithochilus difformis* (Wall. ex Lindl.) Schltr., but DNA evidence has suggested its placement in *Phalaenopsis*. This is one of many orchid species of which the occurrence in Cambodia was entirely predictable. We encountered it as an epiphyte in semi-deciduous forest at ca. 595 m asl, ca. 8.5 km north of Sen Monorom, Mondulhiri Province, and probably also in more humid, evergreen forest remnants near a waterfall at 640 m asl, ca. 14 km southeast of Sen Monorom, but we have not seen the latter specimens in flower. This species, of which the flowers are striking close up but inconspicuous from a distance, was previously recorded from N & NE India, Nepal, Myanmar, southern China, Thailand, Laos, Vietnam, Peninsular Malaysia, Sumatra, and Borneo.

***Sarcoglyphis thailandica* Seidenf. (Kew cult. 2015-1147; Fig. 8)**

Along with *Thrixspermum pauciflorum*, this is the least common of the species reported in this paper. Until now this monopodial orchid was believed to be endemic to Thailand, but we found it at a considerable distance from the Thai border in eastern Cambodia, in the Seima Wildlife Sanctuary, Mondulhiri Province. There it occurred as an epiphyte in disturbed evergreen dipterocarp forest at 340 m asl.

***Stichorkis gibbosa* (Finet) J.J.Wood (Kew cult. 2015-1312; Figs 9 & 10)**

The last word has not been spoken on the complex taxonomy of subtribe Malaxidinae, which in Cambodia is represented by the genera *Crepidium*, *Liparis*, *Oberonia*, and now also by *Stichorkis*. The genus *Stichorkis* was usually considered to fall within the limits of the large genus *Liparis*, but molecular studies have shown that *Liparis* is polyphyletic (Cameron, 2005; Tang *et al.*, 2015). One clearly monophyletic group within *Liparis* s.l. includes the present species; all its members are characterized by having distichous, flattened floral bracts, with the flowers opening in succession over a long period of time (not unlike many species of *Thrixspermum*). *Stichorkis gibbosa* is the most widespread taxon in the genus, being recorded from Myanmar, Thailand, Laos, Peninsular Malaysia, many parts of Indonesia, the Solomon islands, Vanuatu, and New Caledonia. We found it as an epiphyte in evergreen montane forest on Mt. Bokor, Kampot Province, at 940 m asl.

***Thrixspermum pauciflorum* (Hook.f.) Kuntze (Kew cult. 2015-1120; Fig. 11).**

Thrixspermum simondii Gagnep., Bull. Mus. Natl. Hist. Nat., sér. 2, 22: 627 (1951), syn. nov. ?*Thrixspermum odoratum* X.Q.Song, Q.Q.Meng & Y.B.Luo, Ann. Bot. Fennici 46: 595 (2009).

Due to its short-lived flowers, the genus *Thrixspermum* is among the least well represented orchid genera in herbaria. The present species is among the lesser known members of the genus, having been found once in Peninsular Malaysia and once in Vietnam, according to Seidenfaden (1992). However, *T. simondii* from Vietnam, which was described from a painting by Simond, reproduced in Seidenfaden (1992), appears indistinguishable from *T. pauciflorum*. It is not clear to us on what grounds Seidenfaden chose to regard it as a synonym of *T. centipeda* Lour., albeit with a question mark. Judging from the illustrations in the protologue, *T. odoratum* from Hainan is very close to, if not conspecific with *T. pauciflorum*. We can here report *T. pauciflorum* from 15 km SE of Sen Monorom, Mondulhiri Province, where it occurred as an epiphyte in patches of secondary forest in anthropogenic grassland at 900 m asl.

Conclusions

Many new records of orchids are still to be expected from Cambodia, of which a large number can be predicted on the basis of known distribution ranges and ecology. Almost all the species here recorded, with the possible exceptions of *S. thailandica* and *T. pauciflorum*, are such predictable cases. The two last-mentioned species demonstrate, however, that there are still surprises in store, and that certainly not the entire orchid flora of Cambodia is as easily predictable as, say, the occurrence of *P. difformis* in the country.

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