Short Communication

New records of Orchidaceae from Cambodia II

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In Schuiteman *et al.* (2015) we pointed out that the orchid flora of Cambodia is still inadequately known, implying that new records are to be expected as a result of increased exploration. Since then we have made another field trip, in April 2015, visiting the vicinity of Sen Monorom in Mondulkiri Province as well as, briefly, Bokor National Park in Kampot Province. The new records below also include some from our November 2013 trip to the southern Cardamom Mountains in Koh Kong Province.

As usual, only a small percentage of the orchid species seen in the field were found in flower. Of the 12 species reported below, only three were flowering during one of our trips (*Anoectochilus lylei*, *Eulophia flava*, and *Zeuxine nervosa*). Without taking the others into cultivation to observe them in flower, it would not have been possible to fully identify these. So far, two species new to science have turned up in our collections: *Nervilia mekongensis* S.W. Gale, Schuit. & Suddee (Gale *et al.*, 2016; Fig. 1), also known from all three neighbouring countries (the type is from Thailand); and *Porpax verrucosa* Schuit. (Schuiteman, 2016), apparently endemic to Cambodia. The following are new generic records for Cambodia: *Anoectochilus*, *Brachypeza*, *Nervilia* and *Porpax*.

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

***Anoectochilus lylei* Rolfe ex Downie (Kew cult. 2013-1724; Figs 2–4)**

This is one of the so-called jewel orchids, so named for their attractive foliage. The species of the genus *Anoectochilus* are highly in demand for traditional Chinese medicine; as a result they are unsustainably collected throughout Southeast Asia and China. The present species was found in flower in the Cardamom Mountains, growing in leaf litter in evergreen lower montane forest at 665 m asl (above sea level). It is recorded from Myanmar, Thailand, China (Yunnan) and Vietnam.

***Arachnis labrosa* (Lindl. & Paxton) Rchb.f. (Kew cult. 2013-1671; Fig. 5)**

This species is known from all three neighbouring countries, therefore its occurrence in Cambodia is not unexpected. We found it in the foothills of the Cardamom Mountains as an epiphyte in disturbed primary evergreen forest on a ridge at 430 m asl. It is mainly a continental Asian species, distributed from Northeast India, Bhutan, Myanmar, Thailand, China, Laos (Schuiteman *et al.*, 2008), Vietnam and Taiwan to the Ryukyu Islands.

***Brachypeza laotica* (Seidenf.) Seidenf. (Kew cult. 2015-1144 & 2015-1282; Figs 6 & 7)**

This species, with its *Phalaenopsis*-like habit, was found as an epiphyte on tree trunks in disturbed, evergreen dipterocarp forest within the Seima Wildlife Sanctuary

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Fig. 1 *Nervilia mekongensis* S.W.Gale, Schuit. & Suddee. Flowers, photographed near Sen Monorom.

Fig. 2 *Anoectochilus lylei* Rolfe ex Downie. In situ, Caradamom Mountains.

Fig. 3 *Anoectochilus lylei* Rolfe ex Downie. Inflorescence. Kew cult. 2013-1724.

Fig. 4 *Anoectochilus lylei* Rolfe ex Downie. Leaf. Kew cult. 2013-1724.

Fig. 5 *Arachnis labrosa* (Lindl. & Paxton) Rchb.f. Flower. Kew cult. 2013-1671.

Fig. 6 *Brachypeza laotica* (Seidenf.) Seidenf. In situ, Seima Wildlife Sanctuary.

Fig. 7 *Brachypeza laotica* (Seidenf.) Seidenf. Inflorescence. Kew cult. 2015-1282.

Fig. 8 *Bulbophyllum lemniscatoides* Rolfe. Inflorescence. Kew cult. 2015-1288.

Fig. 9 *Bulbophyllum tridentatum* Kraenzl. Inflorescence. Kew cult. 2013-1746.

Fig. 10 *Coelogyne quadratiloba* Gagnep. Inflorescence. Kew cult. 2013-1689.

Fig. 11 *Dendrobium lagarum* Seidenf. Inflorescence. Kew cult. 2015-1155.

Fig. 12 *Dendrobium stuposum* Lindl. Inflorescence. Kew cult. 2013-1747.

Fig. 13 *Eulophia flava* (Lindl.) Hook.f. In situ, near Sen Monorom.

Fig. 14 *Eulophia flava* (Lindl.) Hook.f. In situ, Seima Wildlife Sanctuary.

Fig. 15 *Grosourdya appendiculata* (Blume) Rchb.f. In situ, Cardamom Mountains.

Fig. 16 *Grosourdya appendiculata* (Blume) Rchb.f. Flowers. Kew cult. 2013-1585.

Fig. 17 *Smitinandia helferi* (Hook.f.) Garay. Flowering plant. Kew cult. 2013-1590.

Fig. 18 *Smitinandia helferi* (Hook.f.) Garay. Inflorescence. Kew cult. 2013-1590.

southeast of Sen Monorom, Mondulkiri Province, at 340 m asl, and also in a remnant of evergreen forest near a waterfall south of Sen Monorom at 640 m asl. *Brachypeza laotica* is also known from Thailand, Laos and Vietnam.

***Bulbophyllum lemniscatoides* Rolfe (Kew cult. 2015-1288; Fig. 8)**

This bizarre little orchid, noteworthy for the three rod-shaped, mobile appendages of the sepals, belongs to the section *Lemniscata*, which is a mainly continental Asian group with annually deciduous foliage. We found it growing on the lichen-covered trunks of thin trees on the edge of an evergreen forest remnant near a waterfall south of Sen Monorum at 640 m asl. This species is also recorded from Thailand, Laos (Schuiteman *et al*., 2008), Vietnam, Peninsular Malaysia, Sumatra, Java, Borneo, and the Philippines (Cootes, 2011).

***Bulbophyllum tridentatum* Kraenzl. (Kew cult. 2013-1746; Fig. 9)**

Our specimen agrees well with the illustrations provided by Seidenfaden (1979), in part made after the type material. This species was only known from the Thai island of Koh Chang, which is close to South Cambodia, until it was recorded from Arunachal Pradesh (Rao, 2008). We found it in the foothills of the Cardamom Mountains as an epiphyte in disturbed evergreen, primary forest, at 390 m asl.

***Coelogyne quadratiloba* Gagnep. (Kew cult. 2013-1689; Fig. 10)**

This species was found as an epiphyte in the Cardamom Mountains, growing in rather dry primary montane forest with little undergrowth at 895 m asl. It was previously known from Thailand, Vietnam and the Andaman Islands.

***Dendrobium lagarum* Seidenf. (Kew cult. 2015-1155; Fig. 11)**

This terete-leaved species was found as an epiphyte in semi-deciduous, open forest near Sen Monorom, at 595 m asl. It was previously recorded from Thailand, Laos, Vietnam and China (Hainan).

***Dendrobium stuposum* Lindl. (Kew cult. 2013-1747; Fig. 12)**

This is another widespread species of which the occurrence in Cambodia was to be expected. We found it in disturbed, primary, evergreen hill forest in the Cardamom Mountains at 390 m asl. It was previously recorded from Northeast India, Bhutan, Myanmar, Thailand, Laos, China, Peninsular Malaysia, Sumatra, Java, Borneo, Lesser Sunda Islands and Sulawesi.

Fig. 19 *Zeuxine nervosa* (Wall. ex Lindl.) Benth. ex Trimen. In situ, Cardamom Mountains.

Fig. 20 *Zeuxine nervosa* (Wall. ex Lindl.) Benth. ex Trimen. Flowers. Kew cult. 2013-1674.

***Eulophia flava* (Lindl.) Hook.f. (Kew cult. 2015-1153 & 2015-1156; Figs 13–14)**

This species must be one of the most conspicuous orchids in Cambodia. The tall inflorescences carry large (6 cm diameter), bright yellow flowers that can be seen from far away. That such a striking plant had not been recorded until now demonstrates again how poorly studied the orchid flora of Cambodia really is. It is a terrestrial species that flowers in April from a large underground corm before the leaves are formed. We encountered it in the Seima Wildlife Sanctuary in open, evergreen dipterocarp forest close to a river at 340 m asl, and also near Sen Monorom in semi-deciduous forest at 595 m asl. It is a widespread but apparently uncommon species, restricted to continental Asia, from Northeast India, through Nepal, Myanmar, China, Thailand and Laos to Vietnam.

***Grosourdya appendiculata* (Blume) Rchb.f. (Kew cult. 2013-1584, 2013-1585 & 2013-1650; Figs 15 & 16)**

This small epiphyte is probably common in the Cardamom Mountains. We found it a few times at elevations of 430–470 m asl on fallen twigs, and once saw a substantial colony on a slender, mossy tree trunk. It was previously recorded from Myanmar, China, Thailand, Vietnam, Sumatra, Java, Borneo, Sulawesi and the Philippines.

***Smitinandia helferi* (Hook.f.) Garay (Kew cult. 2013-1588 & 2013-1590; Figs 17 & 18)**

Like the genera *Arachnis*, *Brachypeza* and *Grosourdya* mentioned above, this is a monopodial orchid, and another widespread species of which the occurrence in Cambodia was predictable. We found it as an epiphyte in secondary forest in the Cardamom Mountains, at 470 m asl. It was previously known from Myanmar, Thailand, Laos, Vietnam, Peninsular Malaysia and the Andaman islands.

***Zeuxine nervosa* (Wall. ex Lindl.) Benth. ex Trimen (Kew cult. 2013-1674; Figs 19 & 20)**

Without flowers, this species is quite similar to *Vrydagzynea albida*, which we recorded in the previous paper of this series (Schuiteman *et al.*, 2015). Both species have leaves with a broad, silvery grey, longitudinal band. However, *Zeuxine nervosa* grows in drier but well-shaded places, for example on top of flat rocks in evergreen forest. The specimen illustrated occurred at 430 m asl in the Cardamom Mountains. This very widely distributed orchid is also known from Sri Lanka, Northeast India, Nepal, Bhutan, Bangladesh, Andaman Islands, Myanmar, Thailand, Laos, Vietnam, China, Ryukyu Islands, Taiwan, the Philippines and New Guinea.

Conclusions

Almost all the species here recorded, except for *Bulbophyllum tridentatum* and *Dendrobium stuposum*, were known to occur in both Thailand and Vietnam. It is not unreasonable to predict that the majority of the lowland orchids that occur in both countries will eventually be found in Cambodia. Since the highest mountain in Cambodia reaches only about 1,800 m elevation, and with relatively little land lying above 1,000 m, it seems likely that the diversity of mountain orchids is much lower in Cambodia than in the neighbouring countries. Therefore we cannot simply assume that every orchid species that has been recorded from all three countries, Thailand, Laos and Vietnam, will probably occur in Cambodia. There is no substitute for continued exploration.

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