

## A NEW SPECIES AND A NEW COMBINATION IN *AESCHYNANTHUS* (*GESNERIACEAE*) FROM LAOS

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A new species of *Gesneriaceae*, *Aeschynanthus mendumae* D.J.Middleton, is described from Laos. The new combination *Aeschynanthus membranifolius* (Costantin) D.J.Middleton is made. An IUCN conservation assessment is provided.

*Keywords.* *Aeschynanthus*, *Gesneriaceae*, Laos.

### INTRODUCTION

The Royal Botanic Garden Edinburgh has recently been involved in a Darwin Initiative funded project in Laos. Part of this project involved exploration in the province of Khammouan, where a hitherto undescribed species of *Aeschynanthus* was collected in wet evergreen forest between 600 and 869 m altitude. It is related to two other species in Indochina but as one of these species does not yet have a combination in *Aeschynanthus* the new combination is also given here.

The species discussed here are members of *Aeschynanthus* sect. *Polytrichium*. Burt & Woods (1975) included nine species in this section and a total of three further species were added by Mendum (1998, 1999) and Mendum *et al.* (2006). The two taxa presented here bring the number of species in *Aeschynanthus* sect. *Polytrichium* to 14. The section is found from southern China and Indochina to New Guinea. It should be borne in mind, however, that the sectional arrangement in *Aeschynanthus* is in need of substantial revision following the results of work by Mendum *et al.* (2001) and Denduangboripant *et al.* (2001).

#### ***Aeschynanthus mendumae* D.J.Middleton, sp. nov. Figs 1, 2.**

*Aeschynanthus poilanei* Pellegr. folii margine dentato similis sed ab ea specie calyce permulto majore (17–21 mm longo, haud < 4 mm), corolla multo majore (21–24 mm, non 13–15 mm) et corollae colore (lobis extus et intus rubris) differt. Ab *Aeschynanthus membranifolius* lobis calycis usque ad basin liberis, corollae colore (lobis rubris) et folii margine dentato (haud integro) recedit. – Type: Laos, Khammouan Province, Nakai Nam Theun NBCA, South eastern slopes of Phou Yang, 17°48'N, 105°32'E, 850 m, 25 x 2005, *M.F. Newman, P. Thomas, K.E. Armstrong, K. Sengdala & V. Lamxay* LA01020 (holo E; iso L, P, National University of Laos Faculty of Science, National University of Laos Faculty of Forestry, Lao Forest Research Centre).

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FIG. 1. *Aeschynanthus mendumae* D.J.Middleton. A, habit; B, flower dissection. Drawn from Newman *et al.* LA01020 (E).

Epiphyte with erect and arching stems, stems glabrous. *Leaves* opposite; petiole 4–8 mm long, purple, glabrous; blade thickly coriaceous, elliptic or obovate, dark green with paler green marbling above, same but paler beneath,  $2.9\text{--}11.3 \times 1.9\text{--}5.6$  cm, 1.6–2.9 times as long as wide, apex acute to acuminate, base cuneate, glabrous above

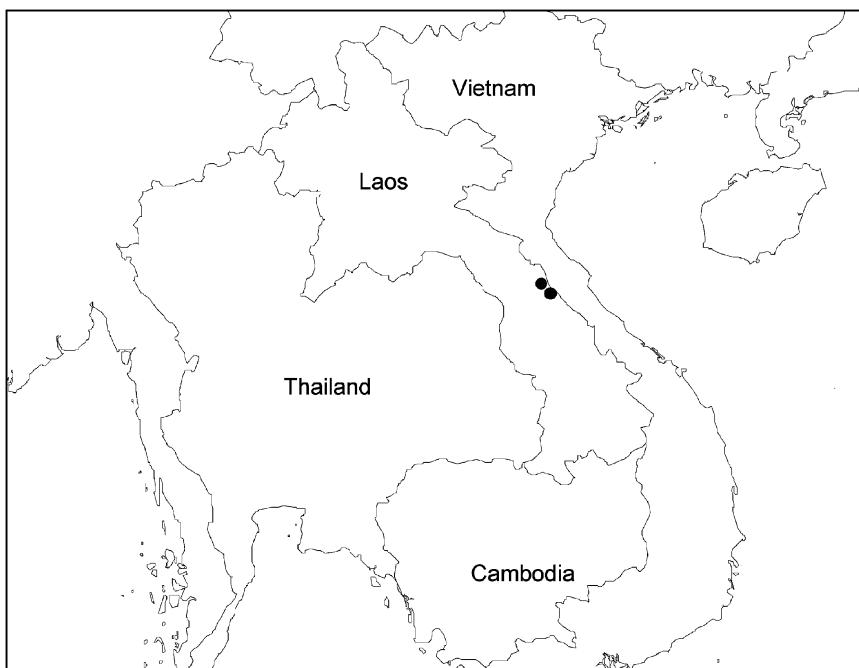


FIG. 2. Distribution of *Aeschynanthus mendumae* D.J. Middleton.

and beneath, margin strongly undulate and weakly dentate, secondary venation obscure (except inasmuch as it is associated with the marbling), tertiary venation obscure. *Inflorescence* axillary and subterminal, 1–2-flowered; peduncle absent; pedicel red, 8.5–9 mm long, glabrous. *Calyx* of separate lobes free to base, linear to very narrowly ovate, red, glabrous, 17–23 × 1.2–4 mm, apex acuminate. *Corolla* 21–27 mm long, externally lower part of tube yellow and distal part red, lobes bright red, internally lobes bright red with a darker band at the base; upper lobes ovate or squarish, not spreading or reflexed, 2.8–3.8 × 3.8–4.5 mm, sinus 2.8–3 mm deep, apex rounded; lateral lobes semicircular, slightly spreading but not reflexed, 2–3 × 4.6–5.5 mm, apex rounded; lower lobe orbicular, not spreading or reflexed, 2.8–4 × 3.3–4.8 mm, apex rounded; sparsely glandular puberulent outside, with 5 tufts of multicellular hairs near base inside. *Stamens* long exserted, fused in 2 pairs; filaments with glandular hairs; anterior filaments inserted at c.12 mm from corolla base which is 44–50% of corolla length, filaments 24.5–29 mm long, anthers c.3 × 1.1 mm; posterior filaments inserted at 13.5–15 mm from corolla base which is c.56% of corolla length, filaments 20.5–22 mm long, anthers 2–2.6 × 0.9–1 mm; staminode c.0.7 mm long. *Disk* 1–1.5 mm high, a simple annular ring. *Pistil* c.43 mm long; stipe c.5 mm long, glabrous; ovary c.11 mm long, with very few sessile glands; style c.27 mm long, glandular pubescent. *Fruit* unknown.

*Distribution.* Laos (Khammouan) (Fig. 2). See also note below.

*Habitat and ecology.* Collected in mid elevation evergreen forest to lower montane forest, often in open areas, forest margins or along streams at 600–869 m altitude. Flowering in October (fruit not known).

*Etymology.* This species is named in honour of the late Mary Mendum (1945–2004) who published many important papers on *Aeschynanthus* and described several new species.

*Proposed IUCN conservation status.* Least Concern (LC). The area where the plant has been collected is extensively forested and not under any immediate threat. Few data are available on its area of occupancy due to the very low collecting density in the region (but see discussion below).

*Additional specimens examined.* LAOS. Khammouan Province: South eastern slopes of Phou Yang, 17°48'N, 105°31'59"E, 600 m, 25 x 2005, *M.F. Newman, P. Thomas, K.E. Armstrong, K. Sengdala & V. Lamxay* LA01018 (E, L, P, National University of Laos Faculty of Science); Nakai Nam Theun NBCA, Phou Ak escarpment, Nam On Catchment, 17°36'51"N, 105°41'38"E, 23 v 2006, *RBGE cult.* 20060815 (E); Nakai Nam Theun NBCA, Phou Ak escarpment, Nam On Catchment, 17°37'31"N, 105°43'3"E, 24 v 2006, *RBGE cult.* 20060838 (E).

Another Royal Botanic Garden Edinburgh living collection, RBGE accession 20052547, which unfortunately has not yet flowered, is likely to be this species. It is from Houaphan Province, Vieng Xai District, forests above Ban Hin Pean. The largest leaves are slightly larger than in the description above. I have also seen a photograph of a plant from Hoa Binh Province in Vietnam, not far from Houaphan in Laos, which I suspect to be the same species. I have not yet seen the associated herbarium material but it is likely that *Aeschynanthus mendumae* is not endemic to Laos.

*Aeschynanthus mendumae* looks very similar to *A. poilanei* Pellegr. in vegetative characters, in particular in the dentate margin to the leaf, but differs from that species in the very much larger calyx (c.3.7 mm long in *A. poilanei*), the much larger corolla (13–15 mm long in *A. poilanei*), and the corolla colour (no red noted in *A. poilanei*). The flower characters are more like *Aeschynanthus membranifolius* (Costantin) D.J.Middleton but it differs from that species in the calyx lobes free to the base (fused at base in *A. membranifolius*), the corolla colour (no red noted in *A. membranifolius*) and the dentate leaf margin (entire in *A. membranifolius*).

***Aeschynanthus membranifolius* (Costantin) D.J.Middleton, comb. nov. Fig. 3.**

*Hoya membranifolia* Costantin, Fl. Gén. Indo-Chine 4: 133 (1912). – Type: Laos, Bassac, iii 1877, *Harmand* 1187 (lecto P, designated here; iso P (× 3)).

The superficial similarity between many species of *Hoya* and *Aeschynanthus* when sterile or in fruit is evident to anyone who has collected in the Asian tropics. The distinction is usually obvious as soon as a plant is cut due to the presence of latex in *Hoya* but not in *Aeschynanthus*. When the plants are studied in more detail the fruit

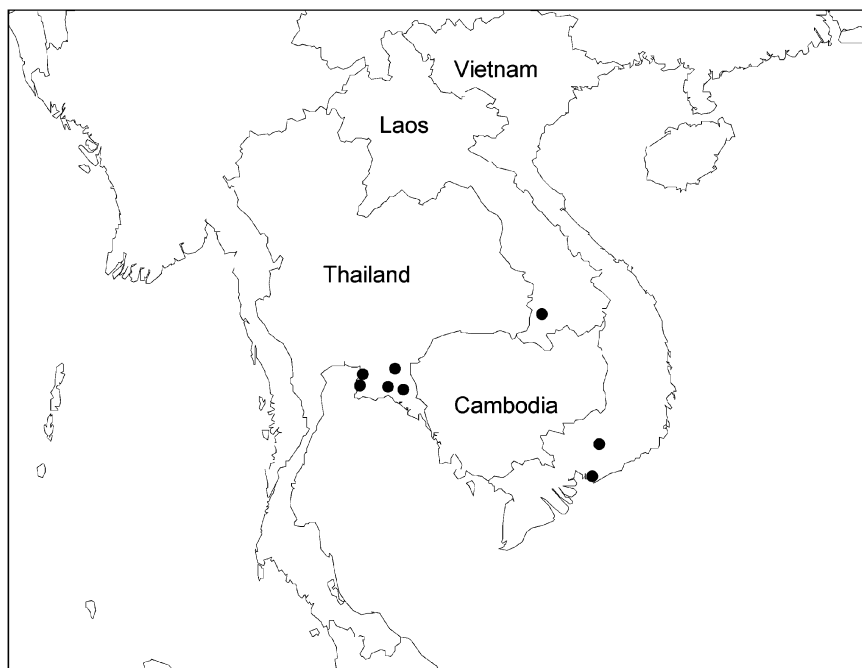


FIG. 3. Distribution of *Aeschynanthus membranifolius* (Costantin) D.J.Middleton.

structure and seeds are also seen to be different. The type material of *Hoya membranifolia* is in fruit and there is no doubt that it is actually an *Aeschynanthus*, making a new combination necessary. There is no currently recognized taxon for this species within *Aeschynanthus* and no synonymy is necessary. A number of other specimens from the region can now be accommodated with this name (Fig. 3).

There is one caveat to this series of fortuitous events and that is that closely related species are not always easily distinguished when in fruit. Identification of fruiting material is usually possible because very often the most similar species are not sympatric. The fruiting type specimen of *Aeschynanthus membranifolius* is the only collection of this species from Laos and the material from Thailand and Vietnam is presumed to be the same taxon given that no other currently known species with which it could be confused are known from anywhere near. Also Cambodia is greatly undercollected and it is likely that the geographic disjunctions between the distributions in Thailand, Laos and Vietnam will be lost once collections of this species are found in Cambodia. However, it should be borne in mind that if a similar but clearly separable species based on flowering material is collected in Laos or neighbouring Vietnam or Cambodia then this conclusion will have to be re-examined. In the other parts of its range this species is known from the southern Vietnamese provinces of Dong Nai and Lam Dong and the southeastern Thai provinces of Chanthaburi, Chon Buri, Rayong and Sa Kaeow (Fig. 3). Much of this

material had previously been identified as *Aeschynanthus longicaulis* Wall. ex R.Br., a species from southern Burma, Peninsular Thailand and Malaysia. It differs from *Aeschynanthus longicaulis* in the calyx lobes slightly fused at the base in *A. membranifolius* compared with free in *A. longicaulis*. Also the calyx is longer overall in *Aeschynanthus membranifolius*, and almost equal in length to the corolla, whilst in *A. longicaulis* the calyx is much shorter than the corolla. In the calyx characters it bears more similarity to *Aeschynanthus albidus* from western Malesia from which it differs in the marbling of the leaves and the generally larger corolla with a calyx shorter than the corolla. A full description of *Aeschynanthus membranifolius* will appear in a forthcoming revision of the genus in Thailand.

There are four duplicates of the type collection in Paris of which one is designated here as the lectotype and the others have been marked with isotype labels.

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#### REFERENCES

- BURTT, B. L. & WOODS, P. J. B. (1975). Studies in the Gesneriaceae of the Old World XXXIX. Towards a revision of *Aeschynanthus*. *Notes Roy. Bot. Gard. Edinburgh* 33: 471–489.
- DENDUANGBORIPANT, J., MENDUM, M. & CRONK, Q. C. B. (2001). Evolution in *Aeschynanthus* (Gesneriaceae) inferred from ITS sequences. *Pl. Syst. Evol.* 228: 181–197.
- MENDUM, M. (1998). Notes on *Aeschynanthus* (Gesneriaceae) from Seram. *Edinburgh J. Bot.* 55: 359–365.
- MENDUM, M. (1999). Three new species of *Aeschynanthus* (Gesneriaceae). *Edinburgh J. Bot.* 56: 265–272.
- MENDUM, M., LASSNIG, P., WEBER, A. & CHRISTIE, F. (2001). Testa and seed appendage morphology in *Aeschynanthus* (Gesneriaceae): phylogeographical patterns and taxonomic implications. *Bot. J. Linn. Soc.* 135: 195–213.
- MENDUM, M., SCOTT, S. M. & GALLOWAY, L. E. R. (2006). The Gesneriaceae of Sulawesi IV: Two new species of *Aeschynanthus*. *Edinburgh J. Bot.* 63: 67–72.

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