

TWO NEW ASIATIC SPECIES OF *LYSIMACHIA*

C.-M. HU* & ALAN P. BENNELL

* South China Institute of Botany, Canton.

ABSTRACT. Two new species of *Lysimachia* (Primulaceae) are described: *L. fletcheri* C.-M. Hu & A. P. Bennell from Burma and *L. interjacens* C.-M. Hu & A. P. Bennell from Laos.

In the course of an investigation of pollen in the genus *Lysimachia* (Bennell & Hu, 1983) it was noted that collections from Burma named by previous authors as *L. peduncularis* [Wall. ex] Kurz included two distinct morphological forms, each corresponding to a different pollen-type. Critical examination of herbarium material confirmed the existence of two separate taxa, one previously undescribed, which we name in honour of Harold Fletcher.

Lysimachia fletcheri C.-M. Hu & A. P. Bennell, *sp. nov.* Fig. 1C.

Syn.: *L. peduncularis* sensu Fletcher in Fl. Siam. En. 2: 324 (1938), p.p.

Species valde affinis *L. pedunculari* [Wall. ex] Kurz et *L. alternifoliae* Wall. in Roxb.; a *L. peduncularis* floribus majoribus, antheris supra basin affixis, filamentis paulo supra bases antherem affixis, calycis lobis lineari-lanceolatis longe acuminatis, pedicellis brevioribus inter alia divergit (vide t. 1); ab *L. alternifolia* foliis punctos coloratos glandulosos carentibus praeter alia signa distinguitur.

Herba 20-40 cm alta, praeter folia et calycem glabra. Caulis erectus tenuiter costatus, regulatim foliatus, ramos longos saepe e basi efferens et interdum ramulos valde abbreviatis axillares crebro edens. Folia alterna, ovata vel ovato-lanceolata, subaequalia, 12-25 × 5-8 mm, acuta et ± cartilagineo-apiculata, basi in petiolum lamina 2-3-plo breviorum sensim angustata, margine paulo crispo-undulata, sicca chartacea, utrinque sparse articulato-setulosa, nervis lateralibus 3-4 paribus subtus cum costa elevatis. Flores singuli axillares, pedicellis gracilibus 10-12 mm longis, quam foliis longioribus. Calyx 4-5.5 mm longus, fere ad basin fissus, lobis lineari-lanceolatis, acutissimis c. 1 mm latis, uninervis, glabris vel interdum ad margines sparsissime setulosus. Corolla lutea, 4.5-5.8 mm longa, late aperta, lobis in tubum ad 0.8 mm latum connatis, ovato-oblongis, obtusis, ad 2.5 mm latis. Filamenta inferne dilatata, in anulum 0.4 mm altum connata, partibus liberis 1-1.5 mm longis. Antherae ovato-oblongae, c. 1 mm longae, supra basin affixae, versatiles rimis lateralibus dehiscentes. Grana pollinis subprolata, 21-25 × 15-17 µm, exinio microreticulato. Ovarium globosum, glabrum. Stylus ad 2.5 mm longus. Capsula c. 3 mm diametro, brunnea, 5 valvis dehiscens. Floret Jun.-Jul.

BURMA. Maymyo plateau, 3500 ft, 5 vi 1911, J. H. Lace 5263 (holo. E, iso. K); *ibid.*, vii 1915, A. E. English 65 (E); *ibid.*, vii 1916, A. E. English 131 (E); Payap, Doi Chiangdao, Put 4490 (E).

L. fletcheri belongs to subgenus *Lysimachia* section *Alternifoliae*. It is very similar to *L. alternifolia* Wall. in Roxb. but lacks the small red glands on the underside of the leaves, which characterise this species. It is

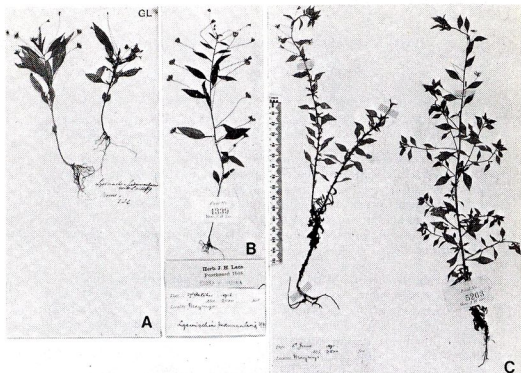


FIG. 1. A, *Lysimachia peduncularis* (Wall. ex) Kurz (Wallich Cat. No. 1489, Prome, E). B, *L. peduncularis* (Lace 4339, E). C, *L. fletcheri* C.-M. Hu & A. P. Bennell (Lace 5263, holo. E).

TABLE I

	<i>L. peduncularis</i>	<i>L. fletcheri</i>
Stem (height)	5-30 cm	20-40 cm
Branches	none, or a few above middle of main stem	some long, often from base, and many very abbreviated from most axils
Leaves: position	crowded towards top of main stem	regularly dispersed, alternate
shape	lanceolate (except lowest ovate-lanceolate)	ovate to ovate-lanceolate
size	15-45 × 5-15 mm	12-25 × 5-8 mm
lateral veins	5-7 pairs	3-4 pairs
Pedicels	25-45 mm	10-20 mm
Calyx lobes	3-nerved	1-nerved
Corolla lobes	3-4 mm long, acute	4.5-6 mm long, obtuse
Anthers	basifixed, erect	fixed above base, versatile
Filaments	basal ring adnate to corolla tube	basal ring only basally attached to corolla tube
Pollen: size	16-18 × 11-14 μm	21-25 × 15-17 μm
form	syncolporate, with irregularly rugulose exine	apocolporate with microreticulate exine

obviously very close to *L. peduncularis* [Wall. ex] Kurz with which it was previously confused; the characters separating the species are summarised in Table 1.

Pollen from all collections named as *L. peduncularis* in the Edinburgh and Kew Herbaria was acetolysed and studied in both the light microscope and the scanning electron microscope. The specimens examined included Wallich Cat. No. 1489, Prome (E), which was accepted by Wallich and all subsequent authors as identical to the Ava, Taong Dong collection, also Cat. No. 1489, validated by Kurz (1877) as the type of *L. peduncularis* [Wall. ex] Kurz. Pollen of *L. fletcheri* (Fig. 2D, E, F) is apocolporate with a clearly reticulate exine, and is significantly larger than that of *L. peduncularis* (Fig. 2A, B, C) which is syncolporate with an irregularly rugulose exine.

All collections of *L. fletcheri* cited at the end of the description were studied and the following specimens of *L. peduncularis* were examined:

Burma. Taong Dong, 1826, Wallich Cat. No. 1489 (iso. K); Prome Hills, ix 1826, Wallich Cat. No. 1489 (E); Maymyo plateau, x 1915, *A. E. English* 98 (E); ibid, 17 x 1908, *J. H. Lace* 4339 (E, K); Gokteih Gorge, 8 x 1911, *J. H. Lace* s.n. (E); Mindat, 27 viii 1956, *F. Kingdon Ward* 22599 (E). India. Bengal, Santara Forest, xii 1903, *H. H. Haines* 532 (K). Siam. Muang Ha, Chingmai, 18 x 1922, *A. F. G. Kerr* s.n. (E). Malaya. Batu Ayaam, 21 xi 1934, *M. R. Henderson* 21371 (K).

***Lysimachia interjacens* C.-M. Hu & A. P. Bennell, sp. nov. Fig. 3.**

Species affinis *L. trichopodae* Franch., sed ab omnibus speciebus sectionis Apodantherae tota planta ferrugineo-pilosa differt. *L. deltoidea* Wight indumento formaque foliorum speciei novae subsimilis, sed structura floris diversissima est.

Herba perennis. Caulis herbaceus, tenuis, angulatus, 10-ultra 20 cm longus, simplex, inferne saepe longe prostratus et ad nodos radicans, dein ascendens, aequae ac pedicelli pilis articulatis crispis ferrugineis ad 0.5–0.8 mm longis densissime obsitus, internodiis 6–10 mm longis. Folia alterna, late ovata vel suborbicularia, 10–16 × 9–15 mm, obtusa vel subacuta, basi subrotundata, raro late cuneata, crasse herbacea, supra viridia, subtus glaucescentia. Indumentum supra setorum crassorum alborum vel pallide ferruginearum, sparsosum et ad margines densiorum adpersum, costa nervisque conspicuis, subtus costa prominula ima basi ut caulis pilosa, ceterum pilis articulatis subsetaceis sparse obsita, nervis paucis conspicuis. Petiolus 9–11 mm longus, iisdem pilis ac caulis densissime obsitus. Flores pauci (usque 1–2), in axillis foliorum terminalium valde diminutorum portati; pedicelli 10–15 mm longi. Calyx 6–7 mm longus, fere ad basin fissus, lobis lanceolatis apice ipso acutis, dorso tantum pilosis, marginibus glabris. Corolla lutea, late infundibularis, c. 10 mm longa, ad partem tertiam inferiorem in lobos late ovatos, ad 5 mm latos, glanduloso-ciliolatos apice obtusos vel erosulos fissa. Filamenta inferne in tubum angustum, 0.6 mm altum connata, partibus liberis ad 1 mm longis. Antherae c. 2.8 mm longae e basi cordata, sensim angustatae, poris apicalibus dehiscentes. Grana pollinis prolata-sphaeroidea, 17–18 × 15–17 μ m, exinio ruguloso. Ovarium ovoideum glabrum. Stylus 6 mm longus.

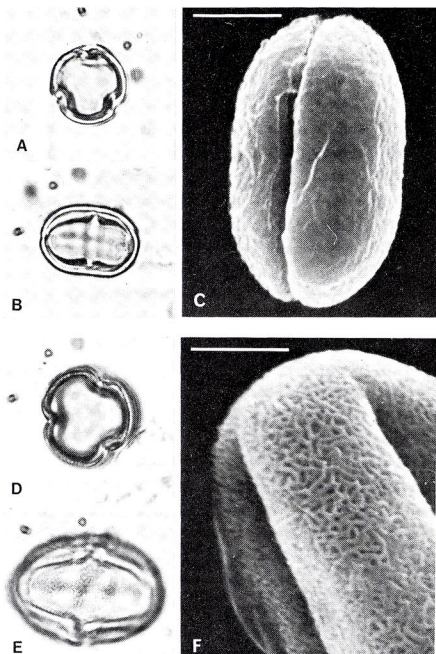


FIG. 2. Pollen. A,B,C, *Lysimachia peduncularis* (Wallich Cat. No. 1489, Prome, E). D,E,F, *Lysimachia fletcheri* (Lace 5263, holo. E). [A,B,D,E: light micrographs $\times 1500$; C,F: scanning electron micrographs, Bar $\equiv 5 \mu\text{m}$]

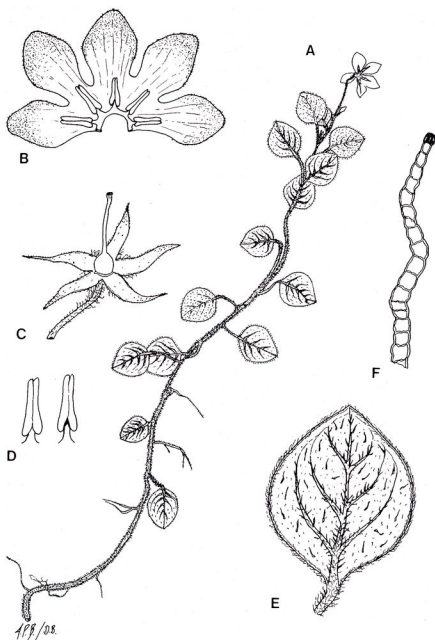


FIG. 3. *Lysimachia interjacens* C.-M. Hu & A. P. Bennell (A. F. G. Kerr 21026, holo. K). A, habit $\times \frac{1}{2}$; B, corolla and androecium $\times 3$; C, calyx and gynoecium $\times 3$; D, stamens $\times 5$; E, leaf $\times 3$; F, glandular hair $\times 60$.

LAOS: Pu Bia, 2400 m, 13 iv 1932, *A. F. G. Kerr* 21026 (holo. K; iso. E, P).

This creeping perennial herb was also distinguished during the pollen survey of the genus (Bennell & Hu, 1983). The pollen morphology confirmed its status as a member of subgenus *Insignis*, section *Apodanthera*, with which it shares its floral morphology (Fig. 3A), resembling in particular *L. trichopoda* Franch. However no other species in this section or subgenus has the dense covering of short brown hairs which characterise the stems, petioles and pedicels of *L. interjacens* (Fig. 3B). Indeed in this, and its other vegetative characters, this species resembles members of subgenus *Lysimachia*, notably *L. deltoidea* Wight.

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