

## *Dioscorea lijiangensis*, a new species from China

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*Dioscorea lijiangensis* C. L. Long & Y. H. Li, a new species from Lijiang, northwest Yunnan, China, is described and illustrated. The morphological characteristics of *Dioscorea lijiangensis* and its related species are compared.

Key words: Dioscoreaceae, *Dioscorea lijiangensis*, new species, taxonomy, Yunnan

Dioscoreaceae is a family of about nine genera and 650 species (Pei & Ting 1985). It is widely distributed in tropical and temperature regions, especially in tropical America. Only one genus and about 49 species occur in China (Pei & Ting 1985).

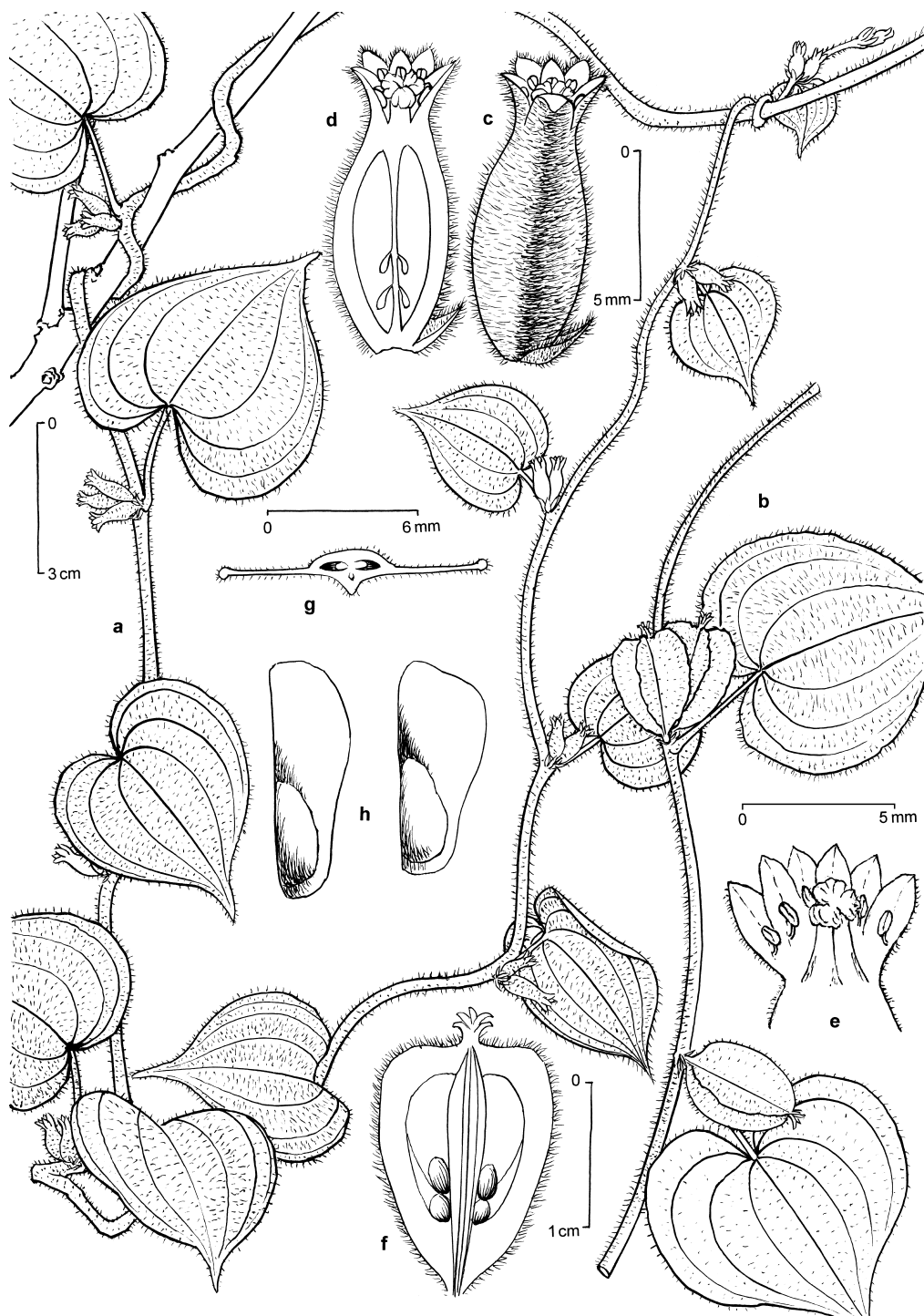
During the ethnobotanical trips in northwest Yunnan in 1997 and 1998, where thousands of specimens were collected, we found one specimen with special morphological features, which are very different from other *Dioscorea* species in China and its neighboring countries. After a morphological study and checking of pertinent literature (Hooker 1894, Prain & Burkill 1908, 1936, Cooke 1967, Li 1983, Pei & Ting 1985), and examination of many other specimens, we are convinced it represents a new species in the genus *Dioscorea*.

***Dioscorea lijiangensis*** C.L. Long & Y.H. Li, *sp. nova* (Fig. 1)

*Species affinis D. hemsleyii* Prain & Burkill, *sed haec species florum 1–4 fasciculatis axillares, ovarium utroque loculo ovulium 2, capsulis 3-valvis 2 magnis et 1 minimis, seminis maturaris 4 differt.*

HOLOTYPE: China. Yunnan Province, Lijiang County, Ludian Township, Dianbei, alt. 2 450–2 500 m, in rocky and thorn *Quercus* scrub, 28.VII.1997 Li Yan-hui & Wang Yu-hua 4133 (KUN), Paratype: Same locality, 22.IV.1998 Wang Yu-hua 6299 (KUN!).

Herbs with tuberous underground rootstock. Stems slender, twining left, diameter 2–3 mm, 40–60 cm long, thicker in lower part, with hairy slender roots at base. Tuber elongate, diameter 8–15 mm, 10–20 cm long, with hairy short roots.



**Fig. 1.** *Dioscorea lijiangensis* C.L. Long & Y.H. Li (from the holotype, drawn by Yi-tao Liu). — a: Plant with flowers. — b: Plant with fruits. — c: Female flower. — d: Longitudinal section of female flower, showing ovules. — e: Open corolla showing perianth, stamens and styles. — f: Longitudinal section of capsule. — g: Transverse section of capsule, showing developed ovary. — h: Two seeds with wings. — Use the 3 cm scale for a and b, the 6 mm scale for g, the upper 5 mm scale for c and d, the lower 5 mm scale for e, and the 1 cm scale for f.

**Table 1.** A comparison between *Dioscorea lijiangensis* C.L. Long & Y.H. Li and *D. hemsleyi* Prain & Burkill.

Features	<i>Dioscorea lijiangensis</i>	<i>Dioscorea hemsleyi</i>
1. Stem	40–60 cm long	300–500 cm long
2. Nerves	(5–)7(–9)	7–9
3. Flower color	greyish brown	crimson
4. Male flowers	1–4, axillary or rarely in pseudo-raceme	4–8, spike-like
5. Female flowers	1–4, axillary or rarely in pseudo-raceme	2–16, spike
6. Peduncle	lacking or very short	3–20 cm long
7. Anthers	broadly oblong	narrowly oblong
8. Ovary	2 cells developed	all cells developed
9. Inflorescence	1(–2) axillary, very short	2–16, 2–20 cm long
10. Capsule	1(–2), 1.8–2 cm long	2–6(–16), 2.2–2.5 cm long
12. Capsule wings	2 bigger and 1 smaller	3
13. Seed number	4	6

Leaves alternate, entire, chartaceous, round-cordate, 3–6 cm long, 3–7 cm wide, apex cuspidate, with grey-brown hairs underneath; venation basically palmate (5–)7(–9), lateral nerves reticulate; petiole 1–5.5 cm long, with grey-brown hairs. Bulbils absent. Flowers unisexual, dioecious, 8–10 mm long, 1–4 axillary or rarely in pseudo-raceme, sometimes with a very short peduncle, covered with many grey-brown hairs. Bracts triangular-ovate, apex acuminate, 1.5–2 mm long. Perianth 6-lobed, with purple dots, radiosymmetric, in 2 whorls, inner lobes lanceolate, outer lobes ovate-lanceolate, 3–4 mm long. Male flowers: stamens 6, equal to perianth lobes (with purple dots, too), adnate to the middle or infra media of the perianth, all fertile; filament length equal to anther length. Female flowers: perianth lobes 6, with purple dots; staminodes 6; style connate, triangular, about 1 mm long; stigmas shield-shape, 3-lobed, bifid to trifid on each lobe; ovary 3-celled, only 2 cells developed, 2 ovules in each developed cell. Capsule 1 or rarely 2, triangular-oblong, 1.8–2 cm long, 1–1.2 cm wide, hairy, with a very short petiole and persistent perianth, 3-valved at maturity, 2 larger valves 5–7 mm wide, smaller valve 1 mm wide. Seeds 4 at maturity, membranous with a 8 mm long wing. Flowering in April, fruiting in July–August.

*Dioscorea lijiangensis* resembles *D. hemsleyi* Prain & Burkill in having slender stems; lacking

bulbils; leaves entire, cordate, ca. 7 cm long and wide; flowers few; stamens six in a male flower; and having six staminiiform staminodes in a female flower. However, the species differ in many aspects. A morphological comparison between *D. lijiangensis* and *D. hemsleyi* is given in Table 1.

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