

New synonyms of *Aristolochia cambodiana* Pierre ex Lecomte (Aristolochiaceae)

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ABSTRACT. While examining herbarium collections of *Aristolochia* for a revision of Eastern Asia, with a special focus on the Flora of Vietnam, we found that *A. dongnaiensis* var. *hirsuta* Lecomte and *A. kerrii* Craib are synonyms of *A. cambodiana* Pierre ex Lecomte.

KEY WORDS: Aristolochiaceae, Cambodia, nomenclature, Thailand, Vietnam.

Aristolochia s.l. comprises about 500 species, the largest genus of Aristolochiaceae, and is widely distributed throughout the tropics, subtropics and also extending to temperate regions (Ma, 1989; Neinhuis et al., 2005; Wanke et al., 2006; González et al., 2014; Buchwalder et al., 2014). In the Southeast Asian tropics, this genus is well known in Thailand and has been published in the Flora of Thailand (Phuphathanaphong, 1987, 2006; Hansen & Phuphathanaphong, 1999), as well as in the Flora of China (Hwang, 1988; Hwang et al., 2003), but it is still poorly in Vietnam, Laos and Cambodia.

Lecomte (1909) originally described *Aristolochia cambodiana* Pierre ex Lecomte from south-eastern Cambodia, and *A. dongnaiensis* Pierre ex Lecomte and *A. dongnaiensis* var. *hirsuta* Lecomte from south-western Vietnam, based on the specimens *L. Pierre 574* (P00623810), *L. Pierre 5680* (P02031766) and *Harmand 3168* (P02031764) respectively (Fig. 1). Later, Craib (1911) described the widespread species *Aristolochia kerrii* Craib from Thailand based on the specimen *A.F.G. Kerr 627* (K000820379) (Fig. 1D). In a taxonomic revision of *Aristolochia* from Southeast Asia, Ma (1989) treated *A. dongnaiensis* as a synonym of *A. cambodiana*. Not only did he maintain *Aristolochia kerrii* and *A. cambodiana* as separate species, but also assigned them to two separate series: *Aristolochia* series *Aristolochia* Ma and *Aristolochia*

series *Podanthemum* (Klotzsch) Duchartre, respectively. The former is clearly distinguishable from the latter by the absence of a stipe between the utricle and the ovary (vs. the presence of a short stipe). In addition, molecular phylogenetic studies have shown that these two series are to be treated separately (Wanke et al., 2006). Thorough reinvestigation of specimens, as well as comparison of the types, indicates that the utricle is sessile and directly attached to the ovary in *Aristolochia cambodiana* and consequently belongs to *Aristolochia* series *Aristolochia* rather than to *Aristolochia* series *Podanthemum*.

Lecomte (1909) established the variety *Aristolochia dongnaiensis* var. *hirsuta* based on the hirsute abaxial leaf surfaces. This was also accepted in the treatment for the Flora of Vietnam (Pham, 2000; Nguyen, 2003). The type specimen of *Aristolochia dongnaiensis* var. *hirsuta* is actually only slightly pubescent rather than hirsute and this character may vary within an individual at different developmental stages or under different conditions of growth. In general, the flower and other generative characters of *Aristolochia* are more reliable for taxon delimitation rather than the vegetative parts, and at least need to be considered in addition to the vegetative morphology.

During preparation of a taxonomic revision of *Aristolochia* for the Flora of Vietnam, careful

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investigation of the type specimens, protologues and published illustrations (Lecomte, 1909; Craib, 1911; Phuphathanaphong, 1987; Pham, 2000; Nguyen, 2003) revealed that *A. cambodiana*, *A. dongnaiensis*, *A. dongnaiensis* var. *hirsuta* and *A. kerrii* are insufficiently distinct to be maintained as separate taxa.

Aristolochia cambodiana Pierre ex Lecomte, Not. Syst. 1: 74. 1909. Type: Cambodia. Samrong Tong, Mt Schral, April 1870, *L. Pierre 574* (holotype P-00623810!).— *A. dongnaiensis* Pierre ex Lecomte, Not. Syst. 1: 75. 1909. Type: Vietnam, Dong Nai, Bien Hoa, Sept. 1868, *L. Pierre 5680* (holotype P-02031766!).— *A. dongnaiensis* Pierre ex Lecomte var. *hirsuta* Lecomte, Not. Syst. 1: 75. 1909, **synon. nov.** Type: Vietnam, Cochinchine, April 1873, *Harmand 3168* (holotype P-02031764!).— *A. kerrii* Craib, Kew Bull. 1911: 450. 1911, **synon. nov.** Type: Thailand, Chiang Mai, Doi Suthep, alt. 610 m, 9 May 1909, *A.F.G. Kerr 627* (holotype K-000820379!).

Perennial, twiners, with numerous, cylindrical or linear roots. *Stem* terete, furrowed, twisted, glabrescent. *Petiole* 2–4(–6) cm long, slender, straight, glabrous. *Leaf blade* triangular, triangular-ovate to broadly ovate, 4–8(–10) cm long, 5–7(–8) cm wide, papery, leaf base cordate, rarely truncate, sinus 1.5–2.5 cm deep, 1.8–2.0 cm wide, leaf apex acute to acuminate, adaxial surface glabrous, abaxial surface densely pubescent; basal veins five to seven, palmate, venation loosely reticulate, the abaxial surfaces prominent and the adaxial surface slightly obscure; margin entire, smooth. *Inflorescence* fascicled-cymose in leaf axil, 6–8-flowered. *Inflorescence axis* short, 0.3–0.5 cm long, glabrescent. *Bracteole* lanceolate, conspicuously, 6–10 mm long, 2–4 mm wide, cuneate at base, acute to obtuse at apex, both surfaces densely pubescent, longitudinal veins, with a present stipe, 3–5 mm long, persistent. *Pedicel* 0.8–1.0 cm long, pendulous, glabrescent. *Ovary* oblong, 2–3 mm long, 1.0–1.2 mm in diam., pubescent. *Perianth* straight, 1.2–1.5 cm long, dark-purple, inside cream-white, outside sparsely pubescent. *Utricle* clearly sharply delimited with the tube, spherical, 2.5–3.5 mm in diam., sessile, outside glabrescent, inside sparsely trichome. *Tube* rectilinear, 0.3–0.6 cm long, 0.15–0.2 cm in diam., slightly broad at apex, outside sparsely

pubescent, inside sparsely trichome. *Limb* 1-lipped, sagittate, 0.8–1.2 cm long, 0.6–1.0 cm wide. *Mouth* slightly broad than tube, elliptic, 0.5–0.6 cm in diam., dark-purple, upper surface sparsely hairy. *Gynostemium* 6-lobed, 3–4 mm high, 3–5 cm in diam., the lobes with conical apices. *Anthers*, ellipsoid, 0.4–0.5 mm long. *Capsule* ovate, 6-angled, glabrous, 1.5–1.8 cm long, 1.3–1.6 cm in diam., acropetally dehiscent; pedicel 1.5–1.8 cm long, glabrous. *Seeds* ovoid-cordiform, 3–4 mm high, 2.0–2.5 mm wide, non-winged, convex on one surface and concave on the other surface with a prominent funiculus; both surfaces verrucose.

Distribution.— Cambodia, Thailand and Vietnam.

Ecology.— *Aristolochia cambodiana* was found in lowland broad-leaved evergreen forests, primary open semi-deciduous dry forest (disturbed by cutting) with dominant plants of *Bambusa* spp., *Dipterocarpus* spp., *Lithocarpus* spp., elevation 300–700 m. Flowering in February to April, and fruiting in August to December.

Note.— *Aristolochia cambodiana* displays a great variation in the shape, size of leaves, petiole, pedicel, and indumentum.

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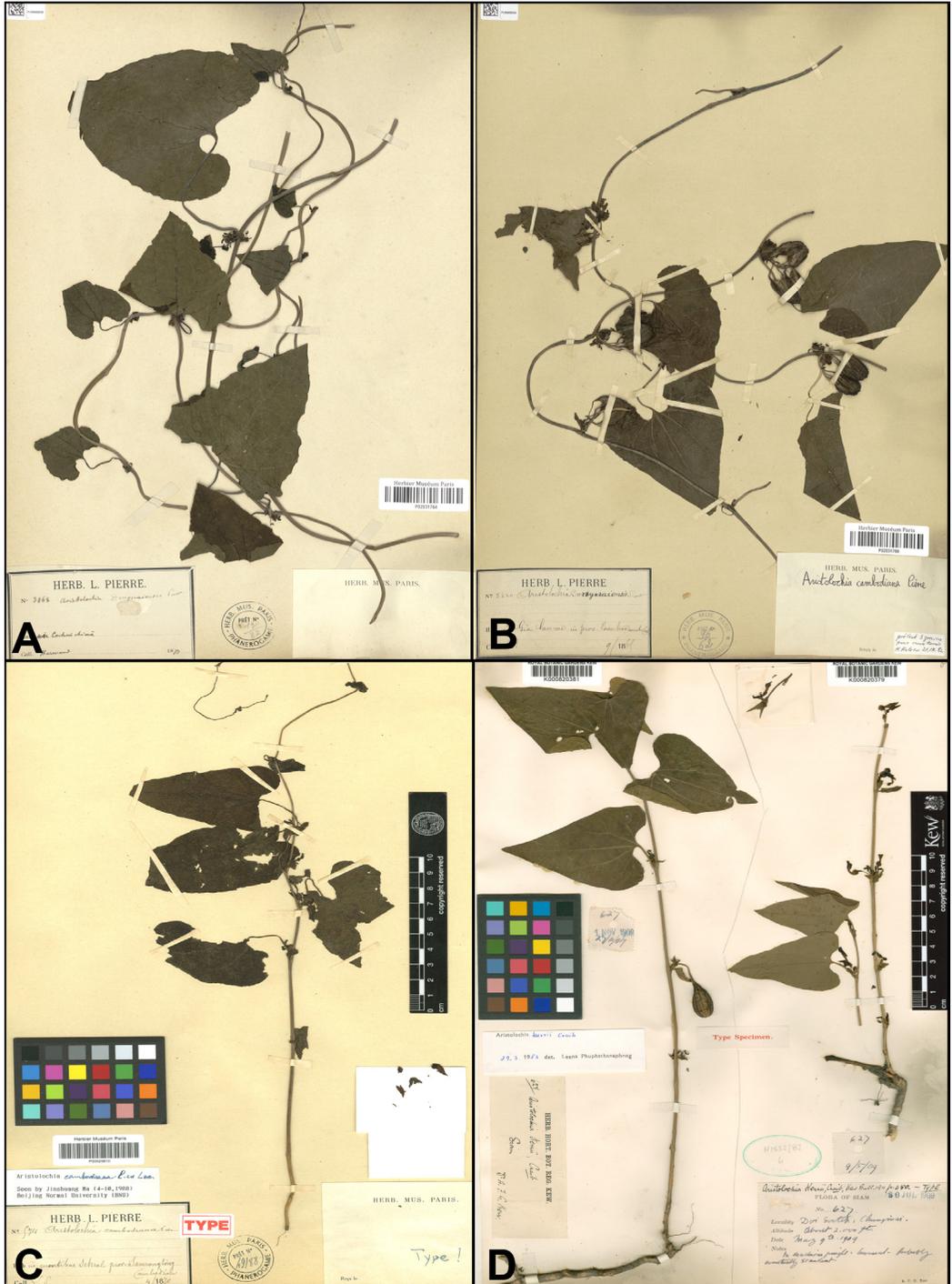


Figure 1. *Aristolochia cambodiana* and its synonyms. A. *A. dongnaiensis* var. *hirsuta* (Harmand 3168, P-02031764). B. *A. dongnaiensis* (Pierre 5680, P-02031766). C. *A. cambodiana* (L. Pierre 574, P-00623810). D. *A. kerrii* (A.F.G. Kerr 627, K-000820379).

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