

Miscellaneous Cucurbit News V

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ABSTRACT

Two recently described species are transferred from *Zehneria* to *Pilogyne*, namely *Pilogyne subcoriacea* (Y.D.Zhou & Q.F.Wang) W.J.de Wilde & Duyfjes and *Pilogyne longiflorum* (G.W.Hu & Q.F.Wang) W.J.de Wilde & Duyfjes. A new species from Thailand is described, *Sinobaijiana frondosa* W.J.de Wilde & Duyfjes. For *Thladiantha angustisepala* W.J.de Wilde & Duyfjes a range extension into China is noted.

KEYWORDS: *Pilogyne*, *Sinobaijiana*, *Thladiantha*, Cucurbitaceae, South-East Asia, Kenya.

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INTRODUCTION

This fifth instalment of Miscellaneous Cucurbit News (for publication details of previous instalments see Thai Forest Bulletin (Botany) 39: 1. 2011) addresses the issue of the acceptance (or morphological validity) of the species-rich genus *Pilogyne* Schrad. as separate from *Zehneria* Endl. Similar controversies occur with the distinction of *Mukia* Arn. (against *Cucumis* L.) and *Gymnopetalum* Arn. (against *Trichosanthes* L.), largely due to modern molecular research. Furthermore, a new species of *Sinobaijiana* C.Jeffrey & W.J.de Wilde is described, the specimen turning up unexpectedly hidden as a ‘stowaway’ among plants collected for ecological research. Remarkably, its female flowers and fruits remain unknown. Such plants are really curious, reminiscent of e.g. the wide-spread cucurb species *Siraitia siamensis* (Craib) C.Jeffrey ex S.Q.Zhong & D.Fang, occurring not rarely all over Thailand, but never seen fertile by the authors in Thailand. Finally, the find of a specimen of *Thladiantha angustisepala* W.J.de Wilde & Duyfjes in southern China was a noteworthy extension of the known range of that species, thanks to our Russian and Chinese colleagues.

(I) TWO NEW COMBINATIONS IN *PILOGYNE* FROM AFRICA

Recent cooperation between China and Kenya for the preparation of a new Flora of Kenya has given an impetus to botanical field collecting in Kenya. Two new species of Cucurbitaceae, both endemics from upland Kenya, were described in the genus *Zehneria*. Both these species appear to belong in the genus *Pilogyne*, and the new combinations are made below.

The rationale of accepting the genus *Pilogyne* beside *Zehneria* (de Wilde & Duyfjes, 2009) has been controversial, and in the latest papers by De Boer *et al.* (2016) and Dwivedi *et al.* (2018), the merging of *Pilogyne* with the older *Zehneria* was urged, based on molecular evidence. However, in the Pacific area a number of still poorly known species cannot be placed with certainty in either of the two available genera, and most of the species concerned are suspect of being of hybrid origin. These include *Zehneria baueriana* Endl., the type of the genus *Zehneria*. Because this latter species differs considerably in detail from all other species casually assigned to *Zehneria* (see de Wilde & Duyfjes, 2009, fig. 4), we prefer provisionally to keep the genus *Zehneria* as

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monotypic, restricted to its type species, occurring in lowland Norfolk Island and New Caledonia in the Pacific. *Zehneria baueriana* differs in its stout general habit and in the stamens with short filaments (filament as long as or shorter than the anther), inserted near the middle of the receptacle tube. In *Pilogyne*, widespread with many species in Africa and South-East Asia, the general facies of the plants is more delicate, with flowers and fruits variable, but the stamens always with long filaments, the filaments much longer than the anthers.

In the recent publication by Dwivedi *et al.* (2018) concerning the phylogeny of *Zehneria* based on molecular data, it is urged to accept this genus in a broad sense, because separating the genera as proposed by de Wilde & Duyfjes (2006a) cannot be proved phylogenetically and the proposed morphological characters would be too weak. Dwivedi *et al.* (2018) further argue that this lumping together would be beneficial for reaching taxonomic stability (in floras and field guides) and avoid confusion among botanists trying to identify these plants in the field and herbarium. In contrast, the present authors think that the problems should not be evaded and that inevitably the considerable and obvious differences in morphological traits, especially within the flowers, will remain a persistent source of error for botanists as long as these differences are not clarified and defined at the genus level. Therefore, the recognition of several genera, including *Pilogyne*, possibly better defined morphologically, should be maintained.

Pilogyne subcoriacea (Y.D.Zhou & Q.F.Wang) W.J.de Wilde & Duyfjes, **comb. nov.**—Basionym: *Zehneria subcoriacea* Y.D.Zhou & Q.F.Wang, *Phytotaxa* 277(3): 282, f. 1, 2. 2016.—Type: *Zhou & Mbuni 16/3* (holotype **HIB**; isotypes **EA**, **PE**), Kenya, Mt Kenya, 00° 10' 12.28" S; 37° 13' 09.63" E.

—*Zehneria* spec. A (see Jeffrey, 1967 and Agnew, 1974, 2013).

This species is known from several localities in Kenya, made at 2000–3000 m altitude.

Pilogyne longiflorum (G.W.Hu & Q.F.Wang) W.J.de Wilde & Duyfjes, **comb. nov.**—Basionym: *Zehneria longiflorum* G.W.Hu & Q.F.Wang, *Phytotaxa* 324(1): 89, f. 1, 2. 2017.—Type: *Sino-Africa Joint Investigation Team (SAJIT) 006679* (holotype **HIB**;

isotypes **EA**, **HIB**), Kenya, Nandi County, S Nandy Forest, Kobujoi area.

Pilogyne longiflorum is remarkable by its long receptacle tube. Its fruit is not yet known. The species, known from 6 collections in a restricted area of Kenya, occurs at 1900–2000 m altitude.

(2) A NEW SPECIES OF *SINOBAIJIANIA* FROM THAILAND

This new species was discovered during identification of a collection of mainly sterile specimens made in 2013 during an ecological and floristic study of a forest plot in North-Eastern Thailand. The *Sinobaijania* collection appeared entangled in a sterile leafy twig of an unidentified treelet or shrub, and consisted of a fertile but leafless portion of a branch. It appeared foliose because of unexpectedly large and dense male flower bracts, and possibly the whole flowering portion of the plant was destitute of leaves. Two years later, in the same ecological plot, in about the same locality, a sterile apex of a leafy growing shoot was collected. Female elements, flowers or fruit, are as yet not found.

Apart from its possibly largely leafless habit when in flower, the present new *Sinobaijania* is readily distinct within the genus, and also from most species of the closely related genus *Thladiantha*: (1) in its compound male inflorescence, with 3–6 bunches of congested flowers dispersed along the rachis, the flowers each axillary to broad flabelliform, toothed bracts; (2) in its flowers in which the calyx is much longer than the corolla. For further information compare de Wilde & Duyfjes (2008) and Lu & Jeffrey (2011).

Sinobaijania frondosa W.J.de Wilde & Duyfjes, **sp. nov.**

Distinct within the genus *Sinobaijania* in flowers with calyx ca twice as long as corolla, not shorter than corolla.—Type: *Visser, Chamchumroon, Saengrit & Suphuntee 372A*, (holotype **L!**), Thailand, North-Eastern, Nakhon Phanom, Phu Langka National Park, 17° 58' 77" N; 104° 08' 35" E., 28 June 2013, Fig. 1.

Climber, possibly ca 5 m long, possibly tuberous, shoots 2–2.5 mm diam. (dry), when flowering possibly destitute of leaves. Plant sparsely hairy in most parts

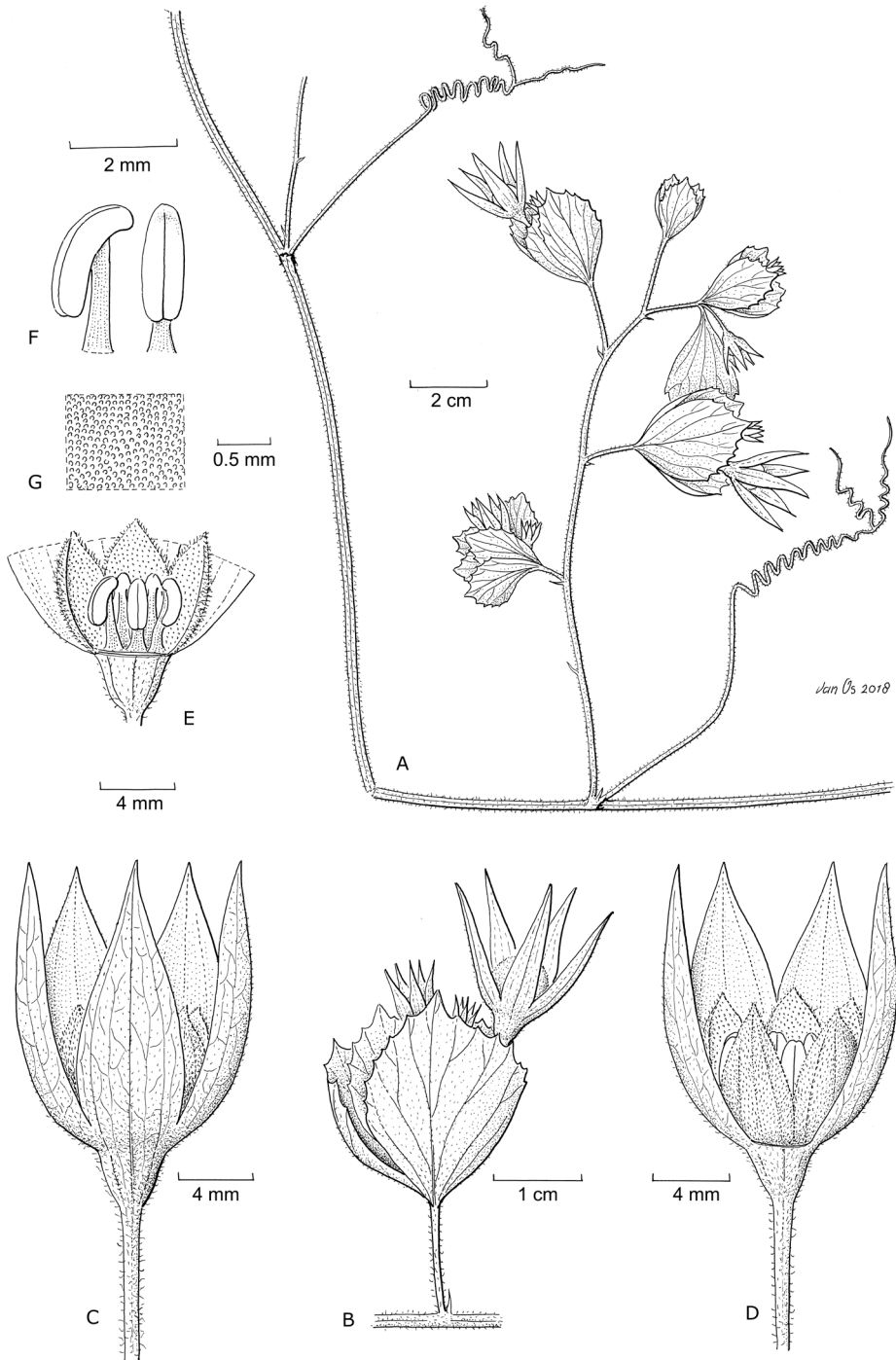


Figure 1. *Sinobaijania frondosa* W.J.de Wilde & Duyfjes. A. portion of male flowering twig, note large flower bracts; B detail of male inflorescence; C. male flower seen from outside; D. idem, one sepal removed; E. idem sepals (largely) and two petals removed; F. stamens; G. detail of inner surface of petal, the minute papillae apparently are oil glands (all: Visser *et al.* 372A). Drawn by Jan van Os.

(early glabrescent and appearing as glabrous); probract absent; tendrils ca 15 cm long, 2-branched and spiralling below and above the point of branching at about one fifth from the apex. *Leaves* (on sterile shoots): petiole 1–2 cm long; lamina narrowly ovate, 8–10 × 3–4 cm, base cordate, apex acute, margin (remotely) dentate, teeth 1–2(–3) mm long, lower surface sparsely whitish hairy. *Male inflorescence* compound, paniculate, in axils of fallen (reduced) leaves, growing from the nodes together with a strong, well-developed tendril; panicle (5–)15–17 cm long including peduncle to 5 cm long with 2 or 3 scattered, finely hairy linear bracts 3–5 mm long; the rachis higher up bearing 5 or 6 scattered side-branches (0.5–)1–1.5 cm long, each ending in a condensed raceme of 5–10 (or more) flowers (one opening each day), axillary to broadly wedge-shaped persistent imbricate bracts, 1.5–2.5 cm long and wide, irregularly sharply incised or lobed at apex, bract-lobes sharp, to 5 mm long. *Male flowers*: pedicel slender, 10–15 mm long, sparsely hairy, jointed at about the middle; flowers finely hairy, part of pedicel above joint 5–6 mm long, receptacle tube narrow, short-campanulate, (1.5–)2 × 2–2.5 mm, details of thickening inside (disc) not known; calyx corolla-like, sepals free, more-or-less imbricate in bud, spreading, narrowly ovate, at apex narrowed into a long acute-acuminate apex, ca 11 × 4 mm, much longer than petals; corolla minutely hairy, in bud sub-globose, ca 5 mm diam.; petals imbricate, very shortly free at apex, each 5–5.5 × 3 mm, faintly nerved, inside papillose; stamens in total ca 3 mm long, two in pairs and one solitary, filaments ca 1.5 mm long, with hairs less than 0.1 mm long, anthers with scattered minute hairs, dorsifixed, somewhat curved, ca 2.5 mm long; basal scales 2, each ca 0.8 mm long. *Female flowers, fruits and seeds* not known.

Thailand.—NORTH-EASTERN: Nakhon Phanom [Phu Langka National Park, 17° 58' 77" N, 104° 08' 35" E, 210 m, 28 June 2013, *Visser et al. 372A* (L)].

Distribution.—Endemic to Thailand, so far known only from the type locality.

Ecology.—Dry dipterocarp forest on clay loam soil with much undergrowth, at ca 210 m altitude.

Phenology.—Flowering in June.

Etymology.—The species epithet refers to frondose appearance of the large and densely packed male flower bracts.

Note.—The papillose inner surface of the petals (fig. 1G), apparently concerns the presence of oil glands (Renner & Schaefer 2010).

(3) *THLADIANTHA ANGUSTISEPALA*
W.J.DE WILDE & DUYFJES,
A NEW RECORD FOR CHINA

(with Maxim S. Nuraliev *et al.*
– see Acknowledgements)

The range-extension into China of *Thladiantha angustisepala*, hitherto known from Thailand, Laos, and Northern Vietnam (Tonkin), became known from a collection by *Nuraliev et al. G35*, from Guangxi (China), made not far from the northernmost known collections in Vietnam of *T. angustisepala*, i.e. Cuc Phuong National Park and Xuan Son National Park, ca 240 km NNE of the latter. The collection *Nuraliev et al. G35* slightly deviates in a less pronounced indumentum on all parts. The duplicate specimen seen (in L) is a leafy young side-shoot from an older perennial ground-lying leafless shoot rooting at the nodes. It bears only one single long-pedicelled flower, as is usually present at the base of a still to be developed male raceme.

In Gagnepain (Fl. Indo-Chine, 1921), Keraudren (Fl. Cambodge, Laos & Vietnam, 1975), and Lu & Jeffrey (Fl. China, 2011) the name *Thladiantha angustisepala* was not mentioned, as this latter species was only described in 2006 by de Wilde & Duyfjes (2006b) and noted as not occurring in China. However, on closer study, material of *T. angustisepala* most likely was included in the above mentioned floras under the name *T. calcarata* C.B. Clarke by Gagnepain (1921), or *T. cordifolia* (Blume) Cogn. (1881), the latter with *T. calcarata* as a synonym. In those floras *Thladiantha cordifolia* obviously was accepted in a wider sense as compared to the notion expressed in de Wilde & Duyfjes (2006b). *Thladiantha angustisepala* is quite distinct from *T. cordifolia*, as is evident from its description in e.g., the much narrower 1-veined sepals, and different fruit, readily seen in the photographs and figure then presented (plates 1, 2 and in fig. 6).

The three species in the area with large flabellate bracts in the male raceme and entire calyx lobes, viz. *Thladiantha angustisepala*, *T. cordifolia*, and *T. tonkinensis* Gagnep. superficially resemble each

other, especially when only one solitary male flower is present. The latter, *T. tonkinensis*, was accommodated in *T. cordifolia* both by Keraudren (1975)

and Lu & Jeffrey (2011). The three species are distinct as shown in the following key:

1. Male sepals linear, 1 mm wide or less, 1-veined. Fruit verrucose or ribbed
 2. Male petals 15–25 mm long. Fruit ca 3 cm long, striate-verrucose
 2. Male petals 15–20 mm long. Fruit 4–5 cm long, ± ribbed
1. Male sepals linear-oblong, 2–3 mm wide, 3-veined. Fruit fenestrately sculptured

T. tonkinensis
T. angustisepala
T. cordifolia

Specimens of *Thladiantha angustisepala* studied: China, Guangxi Zhuang Autonomous Region, Baise City, Napo County, Baishen town, Nonglong village, foot of limestone hill, near village, N 23° 14' 25" E 105° 33' 35", 1150 m, 22 Nov. 2016, *Nuraliev et al. G35* (L!, MW: MW0754572). Vietnam, Phu Tho Province, Thanh Son District, Xuan Son National Park, around Du Village, N 21° 07,877' E 104° 56,533', 361 m, 28 May 2015, *Vislobokov 1,5013* (MW: MW0754573); same location, N 21° 07,998' E 104° 55,880', 277 m, 2 June 2015, *Vislobokov 1,5016* (MW: MW0754574); same location, N 21° 07,148' E 104° 55,875', 547 m, 4 June 2015, *Vislobokov 1,5028* (MW: MW0754575).

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