# Two new species of Stachyphrynium (Marantaceae) from SE Asia

Authors: Suksathan, Piyakaset, and Borchsenius, Finn

Source: Willdenowia, 33(2) : 403-408

Published By: Botanic Garden and Botanical Museum Berlin (BGBM)

URL: https://doi.org/10.3372/wi.33.33215

PIYAKASET SUKSATHAN & FINN BORCHSENIUS

# Two new species of *Stachyphrynium (Marantaceae)* from SE Asia

**Abstract**

Suksathan, P. & Borchsenius, F.: Two new species of *Stachyphrynium (Marantaceae)* from SE Asia. – Willdenowia 33: 403-408. – ISSN 0511-9618; © 2003 BGBM Berlin-Dahlem.

*Stachyphrynium longispicatum* from S Thailand and adjacent parts of peninsular Malaysia and *S. lancifolium* from NW Borneo (Brunei and Sarawak) are described as new species and illustrated.

The genus *Stachyphrynium (Marantaceae)* consists of c. 10-14 species (Andersson 1998) distributed in SE Asia, from Sri Lanka in the west to Borneo in the east, and reaching as far north as southern China (S Yunnan). Most species are found in lowland areas, but a few reach about 1100 m altitude in northern Thailand. The genus differs from the other dominant SE Asian genera in Andersson's (1998) '*Phrynium* group' (including *Phrynium, Phacelophrynium, Monophrynium*) in the combination of a long corolla tube and very short sepals. Recent phylogenetic studies (Andersson & Chase 2001), however, indicate that the genus may not be as closely related to these other genera as previously thought.

Most species of the genus have been described from the Thailand-Indochina region, where the diversity has been assumed to be highest. Nevertheless, ongoing taxonomic studies aiming at a monograph of the genus suggest that the number of *Stachyphrynium* species that occur in the Flora Malesiana region may be underestimated. In this paper we describe two new species of *Stachyphrynium,* one native to S Thailand and peninsular Malaysia, the other native to NW Borneo.

As the correct interpretation of the *Marantaceae* inflorescence is not fully settled (Andersson 1976, Kunze 1985, Andersson 1998), we have preferred to follow the neutral descriptive terminology used by Clausager & Borchsenius (2003), avoiding terms such as florescence, florescence component, cymule, etc., whose typologically correct application remains uncertain. By the term synflorescence we refer to the entire flower-bearing part of the inflorescence, i.e., all parts excluding the peduncle. The term 'special paraclade' (Kunze 1985) is used to describe the specialised flower-bearing branch systems (florescence components sensu Andersson) that make up the basic entity of the inflorescence.

***Stachyphrynium longispicatum*** Suksathan & Borchs., **sp. nova**
Holotype: Thailand, Ranong Province, Suksamran subdistrict, Klong Na Kha wildlife sanctuary, 25 m, 8.4.2002, *P. Suksathan 3319* (QBG; isotypes: AAU, B, BKF, US). – Fig. 1-2

Species nova *Stachyphrynio spicato* similis a qua differt statura majori, foliis ovatis ad oblongis caudatis ad aristatis, bracteis 9-22 in quoque ramo, ovario dense piloso.

*Rhizomotous ground herb* 1-2 m tall. *Leaves* 3-4 per shoot; sheath 10-55 cm long, green, nearly glabrous to densely hairy; petiole 31-78 cm long, green, with a similar indumentum; pulvinus 2-2.5 cm long; lamina ovate to oblong 19-55 × 10-33 cm, abruptly acuminate, acumen 2-2.6 cm long, upper leaf surface uniformly green, glabrous, lower surface pale green, glabrous to densely hairy. *Inflorescence* interfoliar, erect, sometimes appearing to protrude from the sheath of an accompanying leaf; peduncle 6-45 cm long, glabrous or hairy, green; synflorescence markedly elongate, 7-17 cm long; first order branches 0-3, erect, distichously arranged, 5.5-11.5 cm long, simple or the basal rarely with one short second order branch; fertile bracts (9-)14-22 per branch, distichously arranged, ovate, acute, 2-4 × 0.6-2 cm, green, glabrous or hairy; flower pairs 1-3 per special paraclade, associated prophylls 15-17 × 7-8.5 mm, interphyll 11-15 × 4-7.5 mm. *Flower* c. 3.4 cm long, white, slightly fragrant; sepals 3, free, narrowly lanceolate, 3-4 × 0.7 mm, greenish or brownish white, with brown tip; corolla tube 19.5 mm long; petal lobes broadly oblong, acute, 8.5 × 3.2 mm, greenish, translucent, deflexed and curled; staminodial tube 2.5 mm longer than the corolla tube; outer staminodes 2, subequal, the large one broadly obovate, white, with a free part of 3.7 × 3.2 mm; cucullate staminode subtriangulate, white with yellow apex, the free part 4.5 × 4.7 mm, with a minute appendage, c. 1 mm long; callose staminode obovate, white, with a free part of 3.7 × 3.2 mm; fertile stamen 1.6 mm long, with a hood-liked appendage of 3.5 × 2 mm; style with a free part 8 mm long, hooked, stigmatic cavity c. 1 mm diameter; ovary 2.7 mm long, densely hairy. *Young fruits* ellipsoid, hairy; seed 1, arillate, the aril with two appendages.

*Distribution and ecology.* – *Stachyphrynium longispicatum* is so far known only from southern Thailand (western part of the Kanchanaburi, Ranong and Phangnga provinces) and adjacent parts of peninsular Malaysia (state of Perak). It grows in lowland dry-evergreen forest or mixed deciduous forest with bamboos, at elevations up to 400 m.

*Common name.* – La-Klen-Cha (Karen language; Kanchanaburi province).

*Further specimens seen.* – MALAYSIA: PERAK: Temango, 7.1909, *Ridley* (SING).
THAILAND: KANCHANABURI: Rantee river, near Neeckey, near Wangka, *A. Kostermans 63* (BK, K, L, PNH, SING); Ban Rai (road to Pilok mine), Thong Phaphum, *P. Suksathan 3361* (AAU, QBG). — RANONG: 30-70 km S of Ranong, *K. Larsen & Supee S. Larsen 33412* (AAU, BKF, L); Klong Nakha wildlife sanctuary, Suksamran, *P. Suksathan 3319* (AAU, BK, BKF, K, L, QBG); Kampuan village, Kapoe, *Tippan 110* (BK). — PHANGNGA: Klong Nang Yon, Kura buri, *P. Suksathan 3321* (QBG); same locality, *R. Geesink & T. Santisuk 5047* (AAU, BKF, C, E, K, L).

*Notes.* – *Stachyphrynium longispicatum* is easily recognized by its elongate spikes with numerous fertile bracts and its usually densely hairy lower leaf surface. The species differs from *S. latifolium* (Blume) K. Schum. (incl. *S. griffithii* K. Schum. and *S. cylindricum* (Ridl.) K. Schum.) by having an interfoliar inflorescence and much more pointed bracts, and from *S. spicatum* (Roxb.) K. Schum. and similar species (*S. cadellianum* (King ex Baker) N. P. Balakr., *S. mekongense* Gagnep., *S. sinense* H. Li, *S. tetranthum* K. Larsen, *S. zeylanicum* (Benth.) K. Schum.) in its longer inflorescences (7-17 cm versus 4-10.7 cm in *S. spicatum* and allies) with more numerous bracts (14-22 versus 6-9 in *S. spicatum* and allies). There is some morphological variation within the taxon: plants from the Kanchanaburi province in Thailand are larger and have less hairs on their inflorescences and leaves (sometimes they are even glabrous) compared to plants from the type locality in the Ranong province.

In peninsular Malaysia this species is known from a single specimen collected by Ridley in 1909 in the northern state of Perak, close to the border with Thailand. That collection was seen

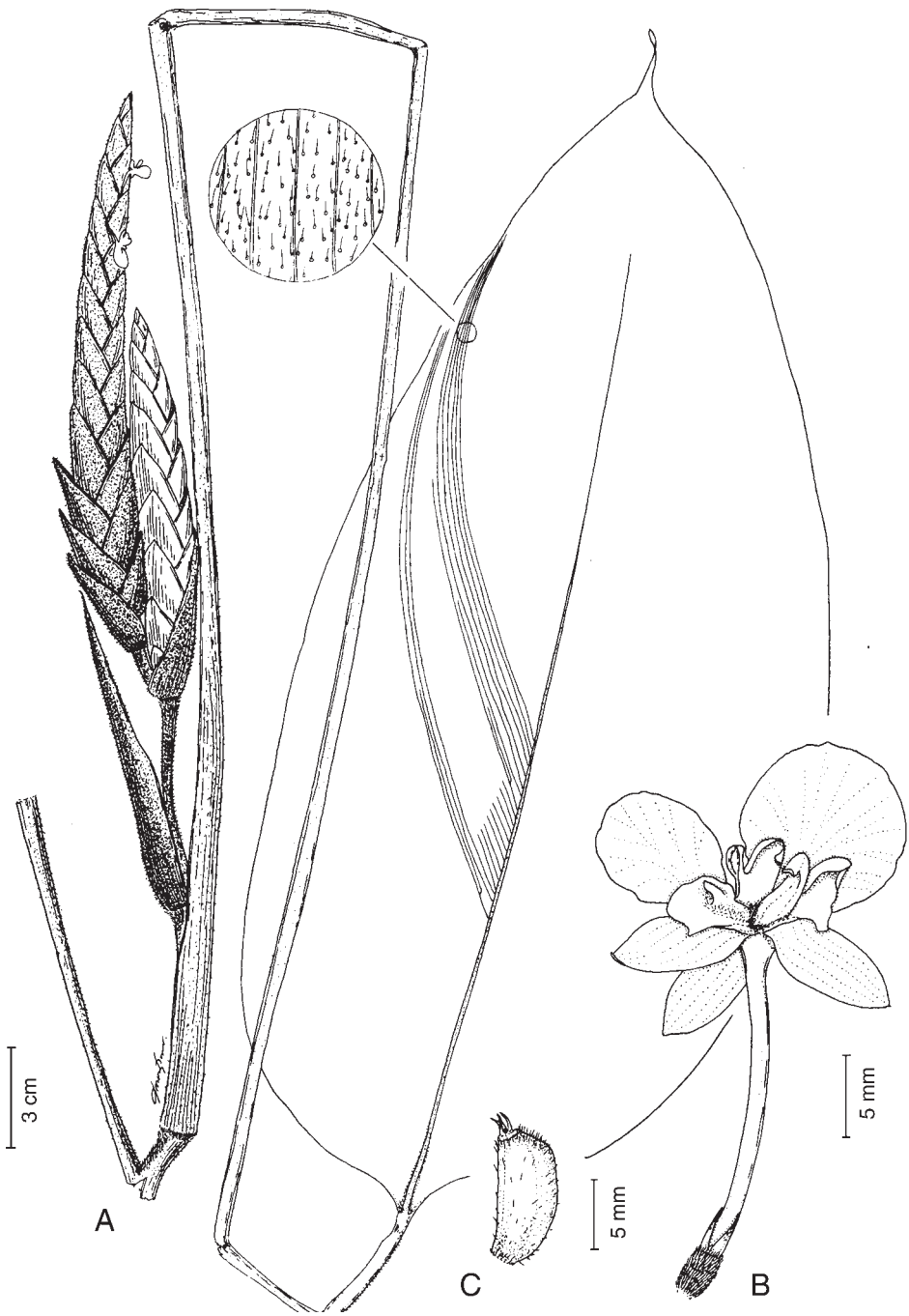


Fig. 1. *Stachyphrynium longispicatum* Suksathan & Borchs. – A: leaf and inflorescence; B: flower; C: young fruit. – Drawn from the holotype.

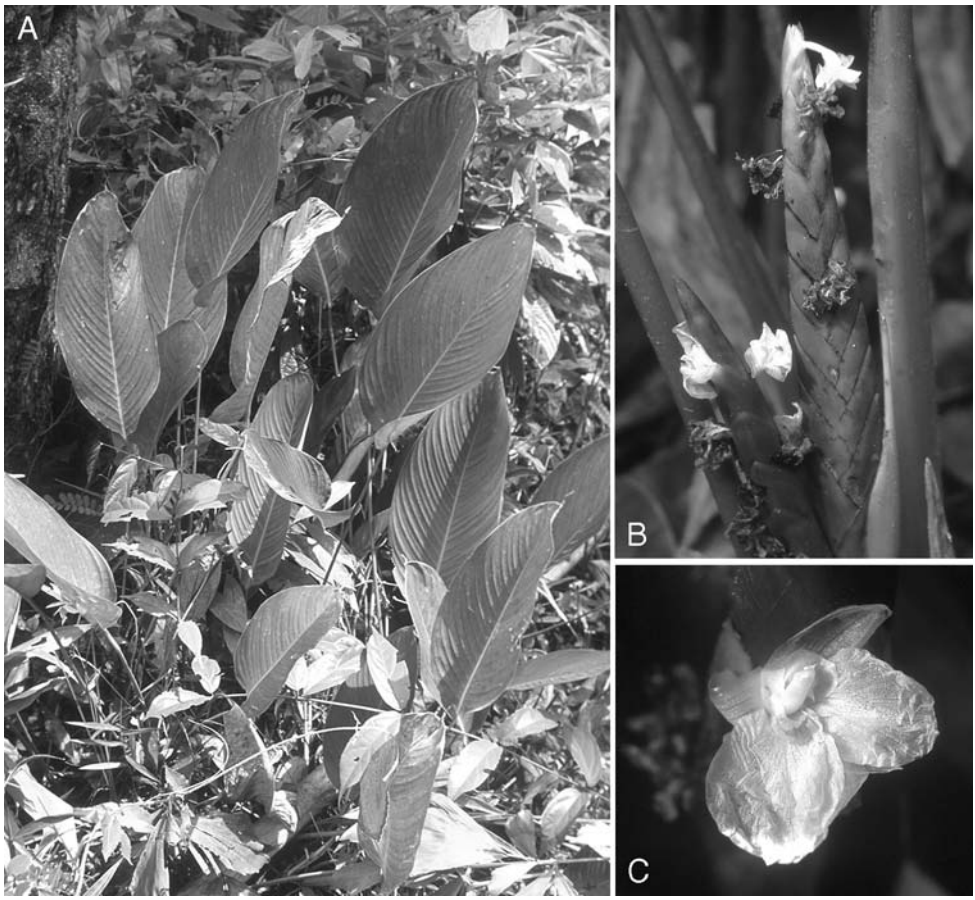


Fig. 2. *Stachyphrynium longispicatum* Suksathan & Borchs. – A: habit; B: inflorescence at anthesis; C: close up of flower. – Photographs by P. Suksathan, from the type locality.

by Holttum (1951), who discussed the taxon as *Stachyphrynium* sp. in his key and descriptions. Lack of complete flower material, however, prevented Holttum from describing it as a new species. Based on examination of flower remnants present in the inflorescence of the specimen seen by Holttum, he described the sepals as being 8 mm long; re-measurement done by us shows that the sepals are in fact no longer than 3.8 mm, i.e., within the range of flowers from Thai specimens of *S. longispicatum*.

***Stachyphrynium lancifolium*** Suksathan & Borchs., **sp. nova**
Holotype: Brunei Darussalam, Tutong, Ukong, Andulau Forest Reserve, Bukit Besong hill ridge, 15.11.1990, *S. Dransfield 1148* (K). – Fig. 3

Species nova *Stachyphrynio jagoriano* similis a qua differt foliis lanceolatis, inflorescentia majori, staminodiis externis minimis 3.2-3.8 mm longis, sepalis lanceolatis chartaceis, c. 6 mm longis.

*Rhizomatous ground herb*, 35-100 cm tall. *Leaves* 3-4 per shoot; sheath 13-25 cm long, green, glabrous; petiole 7-37 cm long, glabrous; pulvinus 1.4-3 cm long; lanceolate, acute, 19-25.6 × 2.5-3.6 cm, glabrous. *Inflorescence* interfoliar, erect, simple; peduncle 21.5-27.5 cm long; synflorescence 7.7-8.5 cm long; fertile bracts 8-14, distichous, oblong to oblanceolate, acuminate, apicu-

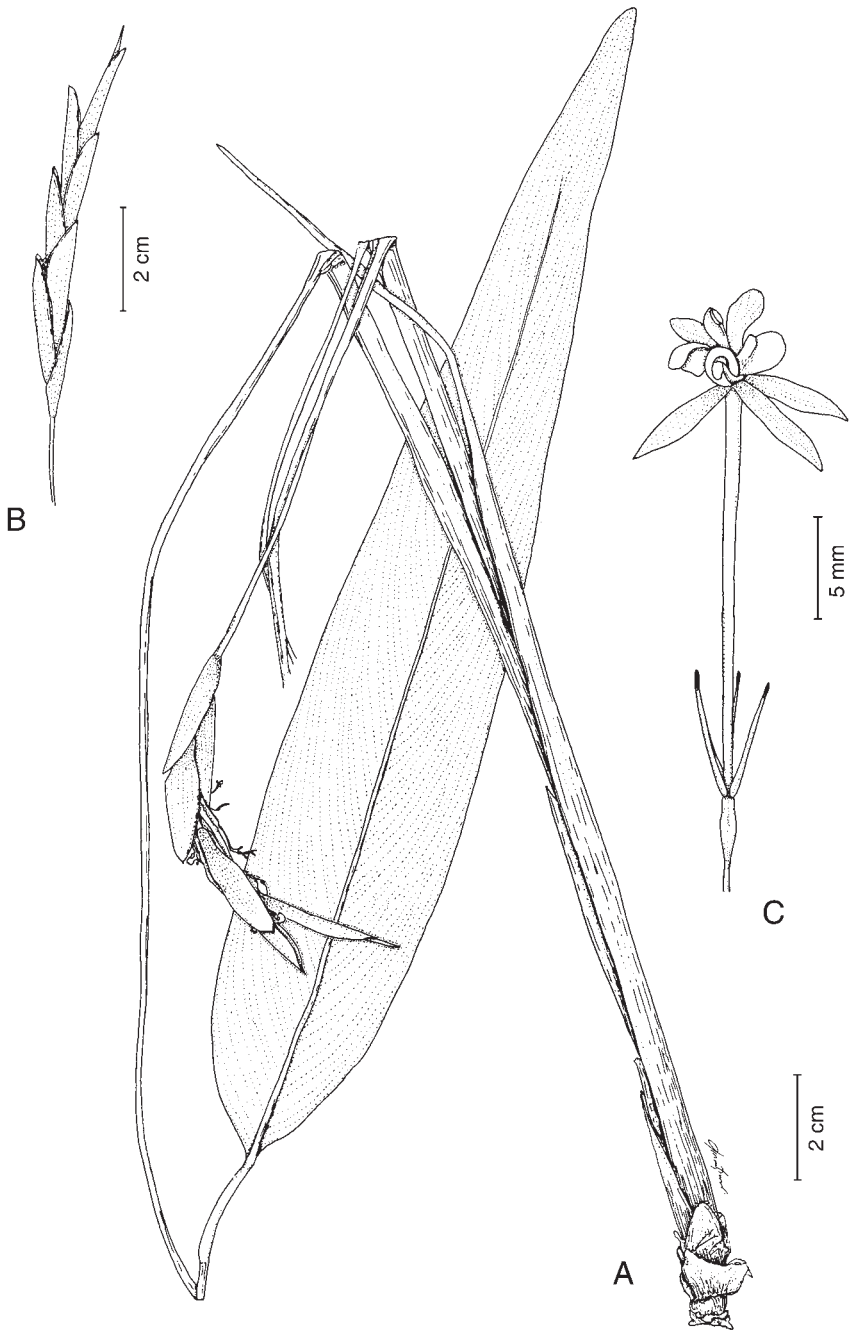


Fig. 3. *Stachyphrynium lancifolium* Suksathan & Borchs. – A: shoot with leaf and inflorescence; B: inflorescence; C: flower. – Drawn from the holotype.

late, glabrous, 18-28 × (3-)7.5-9 mm; flower pairs 3 per special paraclade, associated prophylls 18.5-23 × 2-3.5 mm, interphylls 13-22 × 1.5-3 mm. *Flower* c. 2.7 cm long, white; sepals 3, free, slightly dissimilar, lanceolate, c. 6 × 0.7 mm; corolla tube c. 19 mm long; petal lobes oblanceolate, acute, 5.5-6 × 1.6-1.8 mm, translucent; staminodial tube just slightly longer than the corolla tube; outer staminodes 2, nearly equal, each with an elliptic to obovate petaloid lobe, 3.2-3.8 × 1.5-1.8 mm; cucullate staminode with a free part of c. 2.4 × 2 mm; callose staminode with a free part of c. 2.5 × 2 mm; fertile stamen c. 1.3 mm long, with a tiny appendage c. 1.2 mm long; style with a free part c. 2.7 mm long, curved and hooked, stigmatic cavity c. 0.8 mm diameter; ovary fusiform, c. 3 mm long, glabrous. *Fruit* not seen.

*Distribution and ecology.* – Known from Brunei and the Malaysian state of Sarawak in northwestern Borneo, where it has been collected in lowland dipterocarp forest.

*Further specimens seen.* – MALAYSIA: SARAWAK: Ng. Entajum, Ulu Mengiong, Balleh, 24.10. 1988, *H. Othman & al. S56019* (K, KEP, L, SAR); 7th division, Iban, Linau, Belugu, 30.10.1982, *B. Lee S45373* (K, KEP, SAR).

*Notes.* – *Stachyphrynium lancifolium* differs from all other species in the genus through the combination of lanceolate leaves, broadest just above the base and narrowly tapering towards the apex, very small outer staminodes (c. 4 × 2 mm versus 6.5-13.7 × 2.8-10.1 mm in other species), long sepals (c. 6 mm versus 2.5-4 mm long in other species) and the texture of the sepals (chartaceous versus fleshy in other species). The inflorescence has a very characteristic appearance in dried specimens due to its long synflorescence axis with only moderately overlapping, lanceolate or even oblanceolate, apiculate fertile bracts.

**Acknowledgements**

The authors wish to thank Dr Benjamin Øllgaard for supplying the Latin diagnoses and the DANCED project 'Capacity Building in Biodiversity – Queen Sirikit Botanic Garden' for providing a grant to the first author to continue his studies of SE Asian *Marantaceae* at the University of Aarhus.

**References**

Andersson, L. 1976: The synflorescence of the *Marantaceae*. Organization and descriptive terminology. – Bot. Not. **129:** 39-48.

— 1998: *Marantaceae*. – Pp. 278-293 in: Kubitzki, K. (ed.), The families and genera of vascular plants **4.** – Berlin, etc.

— & Chase, M. W. 2001: Phylogeny and classification of *Marantaceae*. – Bot. J. Linn. Soc. **135:** 275-287.

Clausager, K. & Borchsenius, F. 2003: The *Marantaceae* of Sabah, northern Borneo. – Kew Bull. **53** (in press).

Holttum, R. E. 1951: The *Marantaceae* of Malaya. – Gard. Bull. Singapore **13:** 254-296.

Kunze, H. 1985: Die Infloreszenzen der Marantaceen und ihr Zusammenhang mit dem Typus der *Zingiberales*-Synfloreszenz. – Beitr. Biol. Pfl. **60:** 93-140.

Address of the authors:
Piyakaset Suksathan and Finn Borchsenius, Department of Systematic Botany, Herbarium, Institute of Biological Sciences, University of Aarhus, Building 137 Universitetsparken, DK-8000 Aarhus C; email: piyakas@yahoo.com, finn.borchsenius@biology.au.dk