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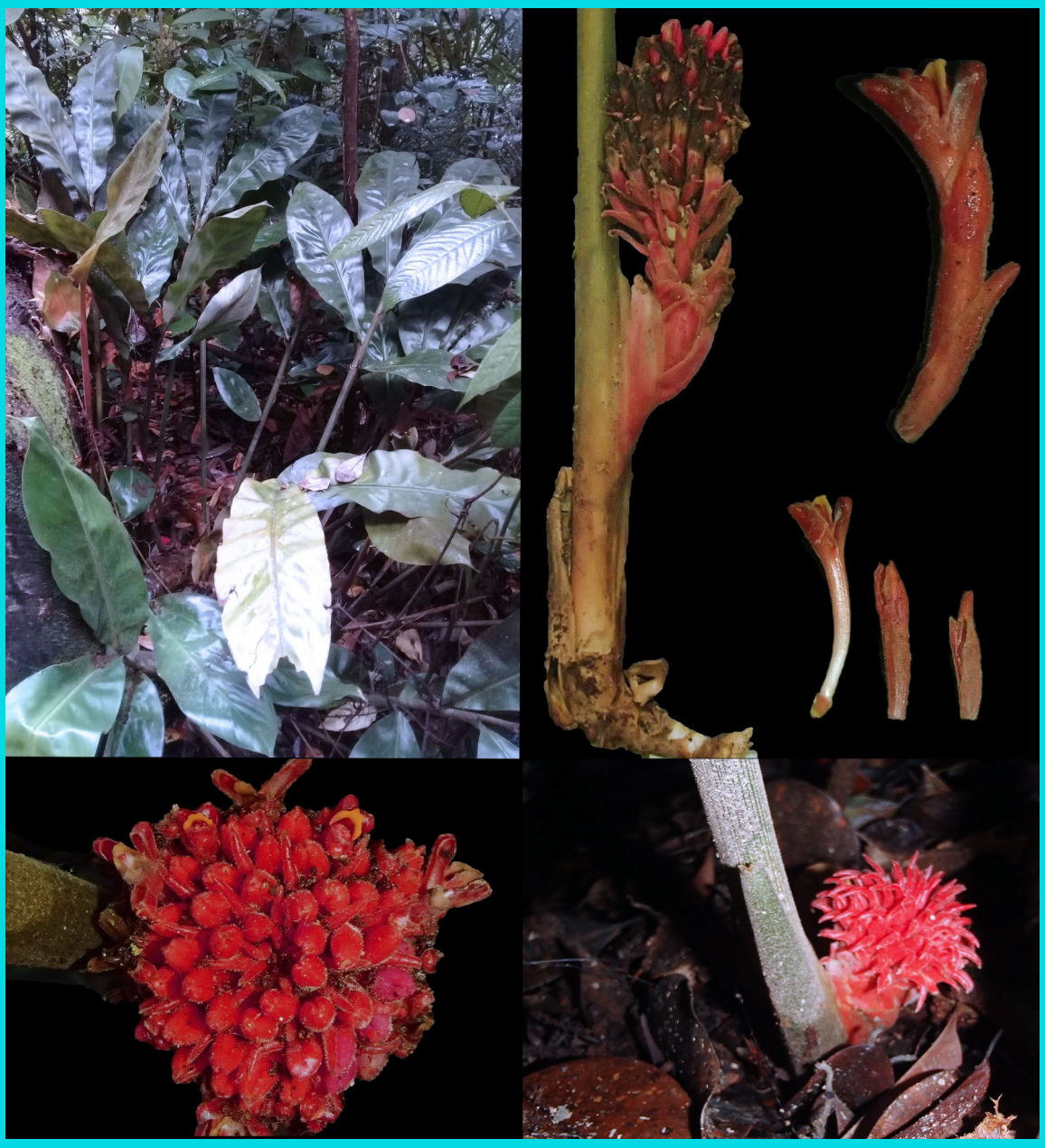

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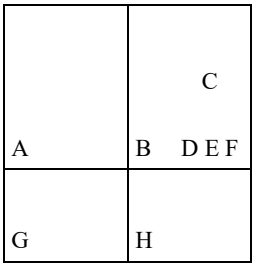

Cover images: *Plagiostachys strobilifera* var. *conica* Salasiah & Meekiong. A. Habit. B. Inflorescence, lateral view. C. Whole flower, lateral view. D. Flower with calyx removed. E. Calyx. F. Bracteole. G. Inflorescence, aerial view. H. Young inflorescence. A–G. *Salasiah 0003*; *H. Salasiah et al. 0014*. Photos by Salasiah Mohamad.

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THE RESURRECTION OF *SCHIZOSTACHYUM BIFLORUM* McCLURE (*BAMBUSOIDEAE*)

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ABSTRACT
MUZAKKI, F. A., CHIKMAWATI, T. & HARTANA, A. 2020. The resurrection of *Schizostachyum biflorum* McClure (*Bambusoideae*). *Reinwardtia* 19(2): 93–96. — Based on newly collected specimens from Mount Salak referable to *Schizostachyum biflorum,* made it justifiable to recognize this species as different from *S. iraten* Steud., to which formerly it was synonymized. A complete description of *S. biflorum,* a comparative tabulation of the morphological features that distinguished it from *S. iraten,* and figures of the two species are presented.

Key words: Bamboo, Java, *Schizostachyum biflorum, S. iraten.*

ABSTRAK
MUZAKKI, F. A., CHIKMAWATI, T. & HARTANA, A. 2020. Pemisahan jenis *Schizostachyum biflorum* McClure (*Bambusoideae*). *Reinwardtia* 19(2): 93–96. — Berdasarkan koleksi spesimen baru dari Gunung Salak yang teridentifikasi sebagai *Schizostachyum biflorum,* membuat jenis ini dapat dipisahkan sebagai jenis yang berbeda dari *S. iraten* Steud, yang sebelumnya selalu disatukan sebagai sinonimnya. Pertelaan lengkap *S. biflorum* beserta tabel komparatif karakter morfologi yang membedakannya dari *S. iraten,* dan gambar-gambar kedua jenis tersebut disajikan.

Kata kunci: Bambu, Jawa, *Schizostachyum biflorum, S. iraten.*

INTRODUCTION

In revising the Javanese *Schizostachyum,* several botanical explorations were conducted to many places. During a trip to Mount Salak (West Java), a collection of *Schizostachyum* locally called awi buluh (*Muzakki FAM* 6) was found. Subsequent observations revealed that *FAM 6* has all characters of *Schizostachyum biflorum* described by McClure (1936) based on specimens collected by Blume from Mount Salak. Originally McClure (1936) thought that specimens collected by Blume kept in L was the same species of *S. blumei* Nees. However, there were some prominent characters which convinced McClure that the Blume specimens kept in L was an undescribed species and named it as *S. biflorum* McClure, with the type specimens collected by Blume from Mount Salak. Dransfield (1983), considered that the type of *S. biflorum* McClure did not differ from *S. iraten* Steud. and considered its synonym.

Therefore it is considered necessary to elaborate further the morphological characters of these two species, whether they are synonymous or should be treated two distinct species.

MATERIALS AND METHODS

Material for this study were based on collection available in Herbarium Bogoriense and specimen image (especially specimen type) from National Herbarium of the Netherlands, Leiden. Morphological analysis were conducted using 36 morphological features elaborated by Clark (2006).

RESULTS AND DISCUSSION

It is interesting to note that in the treatise of Javanese *Schizostachyum* no reference was made by Monod de Froideville (1968) to *S. biflorum* McClure. Based on leaf anatomical evidence obtained from living specimens kept in Bogor Botanic Gardens, Prawiroatmodjo (1982) concluded that *S. biflorum* McClure from Mount Salak differs from S. *blumei* Nees, *S. longispiculatum* (Munro) Kurz, *S. zollingeri* Steud., *S. caudatum* Backer ex K.Heyne and *S. lima* (Blanco) Merr., because their characters of prickle hairs, macro hairs and stomata rows were different. Without referring to Prawiroatmodjo (1982), in 1983 Dransfield concluded that *S.*

biflorum could not be distinguished from *S. iraten*. The results of further observations on *Muzakki FAM 6* showed that there are many morphological characters which indicate that this specimen belongs to *S. biflorum*. Careful analysis of McClure's (1936) extensive description and illustration, indicated that *Muzakki FAM 6* possesed all characters mentioned, except for the presence of 2-3 lodicules, which McClure failed to observe probably because of fall off.

On the other hand, as shown on Table 1 and Fig. 1, the floret of *S. biflorum* is 23 mm long with constantly 2 fertile florets and 2-3 lodicules (McClure mentioned lodicule absent), in contrast to those of *S. iraten* which has a shorter fertile florets (up to 16 mm) and 1-3 fertile florets, also constantly has 2 lodicules. Based on the observation of fresh specimens, it is shown that the culm sheath ligule of *S. biflorum* is serrate, 2–3 mm with 5 mm bristle, whereas the ligule on *S. iraten* is denticulate 1 mm with 1–3 mm bristles. The culm sheath auricles inconspicuous in *S. biflorum* and rim like to slightly rounded in *S. iraten*. Culm sheath blades of *S. biflorum* are spreading become reflex when older, whereas the culm sheath blades of *S. iraten* are erect. Moreover, the culms of *S. biflorum* are fragile because they has small diameter (2–5(–6) cm), with long internodes (60–130 cm) and very thin walls (2–4 mm); whereas the culms of *S. iraten* has 1–3 cm diameter, 50–100 cm internodes and thicker walls (3–5 mm).

Based on these morphological differences it can be concluded that *S. biflorum* should be treated as different species from *S. iraten*, which supports the conclusions of Prawiroatmodjo (1982).

SCHIZOSTACHYUM BIFLORUM McClure, Blumea 2: 89–91 (1936) — Type: INDONESIA, Java, Mount Salak, Blume *s.n.* (Holotype: L. HLB number 908.84–971).

Young shoot green or whitish green. *Culms* erect with pendulous apex, 10–12 m tall, straight, green, 2–5(–6) cm diameter by 60–130 cm internodes, walls thick 2–4 mm, with white waxy powder at the node and white hairs at the young culm, girdle as a belt at least 1 mm width. *Branch complements* subequal, bearing about 2 m from the ground. *Culm sheaths* up to 15–27 cm long, persistent or tardily caducous, covered with white appressed hairs, sometimes glabrous, margins sparsely cliate, apex symmetrically concave; auricles inconspicuous, glabrous or sometimes with few bristle at the outer end, 0.5–1 cm long; ligule serrate, 2–3 mm long, extends to near margins, with bristles up to 5 mm; culm sheath blade spreading to reflexed when older, narrowly triangular, linear to lanceoate, 15–30 × 2–3 cm long, usually more than half as long as culm sheath, with white to light brown hairs on the abaxial side, especially at the base. *Leaves* complements with 6-8 leaves; leaf blades oblong-lanceolate, 14–32 × 1.7–5 cm, abaxial surface pale-puberulent; leaf sheath with

Table 1. Morphological comparison of *Schizostachyum biflorum* and *S. iraten*

Characters/Species	*S. biflorum*	*S. iraten*
Wall thickness (ratio of 2 × wall thickness: culm diameter)	0.12–0.16 mm (very thin)	0.2–0.4 mm (thin)
Girdle	Present as a belt at least 1 mm width	Absent or poorly developed
Culm sheath apex	Symmetrically concave or depressed	More or less horizontal
Culm sheath auricles	Inconspicuous	Rim-like to slightly rounded
Bristles	Few bristle at the outer end, 0.5–1 cm	Few bristle, 0.2–0.8 cm
Culm sheath ligules	Serrate, 2–3 mm long with 5 mm long bristles	Iregular dentaticulate, 1–2 mm with 1–3 mm long bristles
Culm sheath blade	Spreading	Erect
Leaf sheath auricle	Inconspicuous	Rounded outwards
Leaf sheath ligule	Serrate, 2–3 mm long, bristles 2–3 mm	Entire, 1 mm, glabrous
Rachilla segment	6–7 mm long, slightly hairy at the edge	5 mm, glabrous
Prolongation of the rachilla	Bristle like, 10 mm long	Not bristle like, 5.5 mm
Pseudospikelet	(–18)–23 mm, 2 floret	16 mm, 1-3 floret
Bracts	1-2(3)	2
Lodicula	(0)2-3	2

Fig. 1. Comparison of shoots and culm sheath. A. Shoot of *S. biflorum.* B. Culm sheath of *S. biflorum.* C. Shoot of *S. iraten*. D. Culm sheath of *S. iraten.* Photos by F. A. Muzakki.

pale white hairs, sometimes glabrous, margin ciliata; auricles inconspicuous with few bristles 5 mm long; ligule serrate, 2–3 mm long, bristles 2–3 mm long; pseudopetiole 5–10 mm long. *Inflorescences* terminal, clustered on leafy flowering branches or leafless branches. *Pseudospikelet* up to 23 mm long, with 2 fertile florets; prophylls 2 mm long, ovate, with 2 equal keels, hairy, apex acute; bracts 2, sometimes 1; the lower bract 4 mm long, ovate, apex acute-obtuse, sometimes split at the tip, glabrous; the higher bract 6 mm long, ovate, apex obtuse, glabrous; rachis 2–3 mm long, glabrous; rachilla segment 6–7 mm long, slightly hairy at the edge; prolongation of the rachilla bristle-like, 10 mm long, slender, glabrous, with a minute rudiment floret; lemma of the lower floret 8.5–11 × 4.5 mm, ovate, apex acute or short mucronate 0.5 mm, slightly hairy in margin apex, 7-nerved, palea 10–13 × 6 mm, ovate, apex bifid (sinus shallow); lemma of the upper floret 11–12 × 5 mm, ovate, apex obtuse long 1 mm, glabrous, 6-nerved, palea 10–12 × 5 mm; floret, ovate, apex bifid (sinus shallow); lodicules 2-3, lanceolate, 3–5 mm; staments 6, filaments free, anthers 5–6 mm long; Stigmas 3. *Fruit* not seen.

Habitat. Primary forest Salak Mountain, around the Curug Nangka waterfalls at elevation *ca.* 970 m asl.

Vernacular name. Awi buluh.

Specimen examined. Java, Bogor, Tamansari, Sukajadi, Mount Salak. 17 August 2017. *Muzakki FAM 6* (BO); Java, Banten, Lebak, Gunung Kencana. 28 January 2020. *Muzakki FAM 55* (BO), sterile.

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Fig. 2. *Schizostachyum biflorum*. A. Culm. B. Habitat. C. Shoot. D. Margin of culm sheath. E. Culm sheath. F. Culm sheath blade. G. Culm sheath auricle. H. Culm sheath ligule. I. Node. J. Leaf sheath ligule. K. Leaves. L. Floret. Photos by F. A. Muzakki.

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