

THE GENERIC TYPE, AND A NEW SPECIES, OF THE BAMBOO GENUS SCHIZOSTACHYUM¹⁾ FROM JAVA

by

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Thanks to the kind cooperation of Dr. ROBERT PILGER, Director of the Botanical Gardens and Museums at Berlin-Dahlem, I have recently had the privilege of studying and photographing a unique specimen belonging to that institution, which bears the words „Schizostachyum Blumii nobis”, in the hand of NEES, the author of the species. Although there are no data on the sheet to indicate its source, or the date of the determination, this presumably represents NEES's type³⁾ of this species (which is the type species of the genus). At any rate, the available evidence⁴⁾ points to that conclusion, and the specimen agrees in all respects with NEES' description of the genus and of the type species (NEES, 1829, pp. 534—5). Since the original characterizations are so brief and, since those parts referring to the spikelets are so difficult to interpret, I present here a full description⁵⁾ of the rather fragmentary type specimen.

Schizostachyum Blumei NEES.

Floriferous branches slender, the *internodes* glabrous, smooth to the touch toward the base, rough (siliceous) in the upper half, especially in the areas not covered by the sheath; *leaf sheaths* glabrous, obscurely striate, somewhat compressed toward the apex, the *auricles* very inconspicuous, the *oral setae* poorly developed, the *ligule* short (less than 1 mm long) obscurely scabrous, the apex rounded, the margin smooth⁶⁾; *leaf blade* up to 36 cm long, flat, oblong-lanceolate, acuminate, the tip awn-like, scabrous, the base gently rounded, the secondary nerves 11—14 on each side, scarcely distinguishable from the tertiary, the upper surface entirely glabrous⁷⁾, the lower slightly rough to the touch and apparently glabrous but, under a 20-power binocular microscope, seen to be minutely and sparsely strigose and densely minute-papillose; *inflorescences* consisting of clusters of sessile pseudospikelets at the distal nodes of leafy⁸⁾ or leafless branches, the *pseudospikelets*⁹⁾ up to 27 mm long, slender, the *rachis branches* (axes of pseudospikelets)

glabrous, the terminal segment up to 6 mm long; the *prophylls* up to 5 mm long, ovate-lanceolate, the apex rounded, the keels equal or subequal, sparsely ciliate or scabrous, rarely glabrous, the *bracts* usually 2, obtuse, glabrous, gemmiferous, I: 5—8 mm long, ovate-lanceolate, the apex usually split¹⁰), II: 10—15 mm long, oblong-lanceolate, mucronate or short-awned; fully developed, perfect *spikelets* up to 20 mm long, slender, firm, fusiform, gently tapering toward the tip, 1-flowered; *glumes* none; *lemma* tightly convolute, up to 20 mm long in perfect florets, scabrous to strigose toward the apex, and bearing a rather conspicuous tuft of deciduous hairs near each margin, otherwise glabrous, the veins few, somewhat prominent toward the apex, the central one exerted in a glabrous or obscurely scabrous awn, the awn up to 2.5 mm long; *palea* tightly convolute, glabrous, about as long as the lemma, narrowly sulcate, the apex prominently bicornate, the horns strongly tapered, coarsely and sparsely scabrous; normal *rachilla segments* none, prolongation of the rachilla as in the genus; *lodicules* none; *stamens* 6, not exerted, up to 12.5 mm long, the *filaments* ribbon-like, free, about 2.5 mm long, the *anthers* linear, the apex blunt, shallowly notched, the base rather deeply and unequally bifid; *gynaeceum* glabrous, the tip exerted in fully developed florets, the *ovulary* narrow, linear stalked (?), the *style* long, slender, tubular, scarcely distinguishable from the ovulary, the *stigmas* 3, short, plumose, recurved; *fruit* not seen.

A comparison of the rather fragmentary type of this species with numerous ample specimens of *Schizostachyum lima* (BLANCO) MERR. from China and the Philippine Islands gives the impression that the two species are very closely related. It is probable, however, that more complete material of *S. Blumei* will reveal additional differentiating characters. The following contrasting features are all that have been discovered thus far:

	<i>S. Blumei</i> (NEES's type)	<i>S. lima</i>
Upper surface of leaves	smooth to the touch	rough to the touch
Internodes of branches	entirely glabrous	more or less strigose, ultimately glabrescent
Ligules of culm sheaths	smooth ^e)	fimbriate
Inflorescences	dark stramineous	light stramineous
Prophylls of pseudospikelets	shorter	longer
Rachis branches	longer (up to twice as long)	shorter

I wish now to direct attention to a series of nine mounted sheets of a bamboo collected by BLUME on Mt. Salak, Java, and preserved at the National Herbarium (Rijksherbarium) in Leiden. Through the courtesy of Dr. H. J. LAM, Director of the Rijksherbarium, and Dr. J. TH. HENRARD, the Conservator, I have recently had the coveted privilege of studying this fine series of specimens in detail. These specimens are of the greatest interest because Dr. HENRARD, who is thoroughly familiar with the history of the classic collections deposited at the Rijksherbarium, is of the opinion that they represent the collection from which NEES's type of the genus *Schizostachyum* was selected — it is, in other words, the supposed *type collection*. However, beyond admitting that the specimens agree very closely, in their vegetative characters, with NEES's type, and noting that they came from Java, the locality given by NEES (1829, p. 535), I shall not undertake to detail the evidence for this opinion. I shall emphasize, rather, the evidence against it.

In the first place, the sheets in BLUME's series do not bear the name *Schizostachyum Blumei* NEES either in the hand of the author of the name or in that of the collector, BLUME. And in the second place, the spikelets in the supposed type collection are uniformly quite distinct from those in NEES's type from Berlin-Dahlem in a number of characters. The regular occurrence of two functional florets in the spikelets of the Leiden series is, in itself, sufficient to indicate that it is specifically distinct from NEES's type, the spikelets of which are uniformly one-flowered, as described by NEES. And other spikelet characters strengthen the indication of specific distinctness between the two. The differences are brought out more fully in a tabular comparison on page 92 hereinafter.

It will be, I think, immediately obvious to anyone studying this table that NEES's type is specifically distinct from the „type collection” at Leiden. If NEES's type actually was selected from BLUME's series from Mt. Salak, Java, then a mixture certainly happened, probably when the specimens were gathered, the unique specimen sent to NEES certainly having been taken, perhaps inadvertently, from a different plant. — This sort of thing has occurred many times. I recently had occasion to identify some bamboo specimens from a locality in the same geographical area, and I found mixed under the same collector number, and bearing the same vernacular name, not two species merely, but two genera! Furthermore, all of the specimens were in a flowering condition.

Although I have not examined all of the types of the known species of *Schizostachyum* and related genera, I feel reasonably confident, from

a consideration of the characters enumerated in the published descriptions, that BLUME's series from Mt. Salak, Java, represents an undescribed species.

Schizostachyum biflorum, sp. nov.

Culmi circa 4 cm crassi¹¹⁾; *vaginis culmorum* anguste triangulis, *setis in ore* usque ad 10 mm longis, obscure scabris; *internodiis ramorum* plus minusve scabris vel pubescentibus; *vaginis foliorum* glabris, *auriculis* minutis vel carentibus, *setis in ore* obscure scabris, erectis, usque ad 10 mm longis, *ligula* usque ad 2.5 mm longa, scabra, longe fimbriata, fimbriis usque ad 4 mm longis, laevibus; *petiolo* usque ad 10 mm longo, crasso, glabrescente vel supra basem minute scabro; *pseudospiculis* in nodis rare solitariis, plerumque plus minusve dense congestis; *rachi* usque ad 10 mm longa, glabra vel sparse scabra; *prophyllis* parvis, usque ad 2 mm longis, carinis ad apicem conspicue ciliatis; *spiculis* usque ad 18 mm longis, bifloris; *floribus* dissimilibus; *glumis vacuis* carentibus; *lemmatibus* paucinervis, apice carinatis, subulatis, *lemmate* in flore inferiore 7—8.5 mm longo, laxe convoluto, in flore superiore 10—11.5 mm longo, stricte convoluto, *palea in flore inferiore* usque ad 13 mm longa, longe exserta, laxe convoluta, late sulcata, sulco apice sparse hirsuto, 2-carinata, carinis praesertim ad apicem scabris, apice truncata, obscure emarginata; *palea in flore superiore* usque ad 13 mm longa, parve exserta, stricte convoluta, anguste sulcata, apice obscure bifida et scabra; *rachillae segmento* floris inferioris usque ad 4.5 mm longo, glabro, nitido, curvato, compresso, in marginibus versus apicem expansum conspicue ciliato; reliquis ut in genere.

In the English description that follows I have given, for the benefit of those who may feel skeptical as to the generic disposition of this species, a rather full consideration of its characters, without eliminating those which are obviously of generic rank.

Culms as thick as the arm („arndikker bambu”, teste Blume¹¹⁾; *culm sheaths*¹²⁾ deciduous, narrowly triangular, truncate, with poorly developed *auricles*, obscurely scabrous¹³⁾ *oral setae*, a fimbriate, scabrous *ligule* and a reflexed, linear-lanceolate, subulate *sheath blade*, the latter with its upper surface more or less densely strigose; *branches* slender, fasciculate, usually subequal, rarely with one somewhat longer and stouter than the others (up to 50 cm), only sparingly rebranched, sometimes bearing leaves below the distal floriferous nodes, the *basal internodes* scabrous or pubescent throughout, or glabrous at their bases and sparsely appressed-pubescent and glabrescent toward their tips, the *distal internodes* of branches and branchlets retrorsely scabrous; *branch*

sheaths somewhat persistent, the *blades* of those at the upper nodes progressively more tardily deciduous, and more awn-like in form; *leaves* variable¹⁴), those associated with inflorescences smaller and more delicate than those described here, which were produced on sterile branches; *leaf sheaths* up to 7 or more to a branchlet, thick, compressed toward the apex, glabrous or glabrescent, obscurely striate, the *auricles* poorly developed, usually entirely lacking in the lower ones, the *oral setae* borne both on the auricles and at either side of them (present whether the auricles are visibly developed or not), numerous, slender, erect, usually straight, up to 10 mm long, pale, obscurely scabrous¹³), the *ligule* well developed, truncate, scabrous or velutinous, up to 2.5 mm long (not including the fimbriae) the nearly straight margin long-fimbriate, the fimbriae smooth, pale, very slender, straight, up to 4 mm long; *leaf blade* up to 40 cm long and 7.5 cm wide, broadly lanceolate, acuminate, with a long, slender, scabrous, subulate tip, somewhat plicate, the upper surface glabrous, the lower glabrescent, or sometimes remaining sparsely pubescent along the margin and near the base, paler green than the upper, the *secondary veins* 10—13 on either side, the tertiary 7—9 in each space, several tertiary veins along the outer edge of the blade scabrous on the upper surface, transverse veinlets clearly visible in young leaves, scarcely so in the older ones, the *petiole* up to 10 mm long, stout, minutely pubescent (sometimes glabrescent) on the upper surface at the base; *inflorescence* variable, consisting of more or less dense clusters of pseudospikelets^{15, 9}), the *rachis branches*¹⁶) slender, up to 10 mm long, each borne in the axil of a sheath or bract and bearing at its base, first a small prophyll, then several gemmiferous bracts, and finally a 2-flowered spikelet, the internodes of variable length (the penultimate one longest in those examined), glabrous or sparsely retrorse-scabrous, flattened above the point of insertion of the buds, the apex (the point of insertion of the spikelet) expanded, cupulate, usually more or less oblique, the *prophylls* small, thin, 1.5—2 mm long, broad, obtuse, the keels winged, ciliate, the cilia conspicuously tufted at the apex, the *bracts* usually 3, persistent, gemmiferous, the lowest one often split at the tip by the pressure of the developing bud inside, about 5 mm long, thinnish, few-nerved, obtuse and minutely apiculate, the successively higher ones approaching the lemma in size, shape, texture and venation; *empty glumes* lacking; *spikelets* 2-flowered, up to 18 mm long in those examined, the less well-developed (progressively sterile) ones proportionately smaller; the two *florets* dissimilar¹⁷), rather variable as between the different pseudospikelets studied; lemmas firm in texture, ovate-lanceolate,

acute or obtuse, apiculate to subulate, several-nerved, the mid-nerve prominent toward the tip, *the lemma of the lower floret* 7—8.5 mm long, loosely convolute, *that of the upper floret* 10—11.5 mm long, tightly convolute; *the palea of the lower floret* up to 13 mm long, long-exserted, chartaceous to somewhat firm, loosely convolute, broadly sulcate, the lower portion of the sulcus occupied by the normal rachilla segment, the upper portion coarsely scabrous, 2-keeled, the keels scabrous, especially toward the narrow, truncate or rounded, obscurely emarginate apex; *the palea of the upper floret* up to 13 mm long, slightly exserted, thin and membranaceous below, increasingly indurate toward the obscurely bifid apex, tightly convolute, narrowly sulcate, the sulcus occupied, usually throughout its length, by a slender, glabrous, shining, bristle-like *prolongation of the rachilla*, the latter often bearing a minute rudiment of a floret; *normal rachilla segment* (at the back of the palea of the lower floret) up to 4.5 mm long, curved, glabrous and shining, strongly flattened, gradually narrowed, the edges scabrous, toward the base, and bearing on one or both margins a prominent fringe of cilia toward the expanded, excavate apex; *lodicules* lacking; *stamens* 6, included, the *filaments* 1 mm long, ribbon-like, the *anthers* 4—5 mm long, slender, linear, the apex blunt or obscurely bifid, the base deeply and unequally 2-lobed; *gynaeceum* up to 10 mm long, slender, the *ovulary* glabrous throughout, very narrow, the *style* long, slender fistulose, stiff, somewhat angular, the *stigmas* 3, usually exserted, short, plumose, purplish; *fruit* not seen.

The foregoing description was prepared from nine specimens in the Rijksherbarium at Leiden, all with notes in the handwriting of the collector, BLUME, but without dates or collector numbers. Each sheet, however, bears a distinctive accession number in the Rijksherbarium series, to which the initials HLB (Herbarium Lugduno-Batavum) are prefixed. The HLB numbers of the sheets are: 908.84—909 (floriferous branches only), 908.84—948 (floriferous branches only), 908.84—971, the nomenclatural type (floriferous branches with culm sheaths), 908.90—827 (floriferous branches only), 908.100—74 (inflorescences, with leaves associated on some of the branches), 909.65—236 and 909.65—237 (leafy, vegetative branches only), and 909.67—87 (floriferous branches only). Vernacular name, *Bambu Tamian* or *B. Tamiang* (sundanese); leg. in October at the type locality, Mt. Salak, Java (near Buitenzorg, BLUME's place of residence).

The sheet bearing HLB number 908.84—971 is designated as the *nomenclatural type* (BRIQUET, p. 3, Art. 18).

Comparison of the lower and upper florets of the spikelet
in *Schizostachyum biflorum*.

	Lower floret	Upper floret
Insertion	borne on the terminal segment of a rachis branch; abscission more prompt	borne on a rachilla segment; abscission less prompt
Lemma	shorter (7—8.5 mm) loosely convolute	longer (10—11.5 mm) tightly convolute
Palea	loosely convolute, obviously 2-keeled, broadly sulcate, the sulcus occupied below by a normal rachilla segment, and coarsely scabrous above, the keels scabrous toward the broad, truncate, emarginate apex	tightly convolute, obscurely 2-keeled, narrowly sulcate, the sulcus occupied throughout by a slender, bristle-like prolongation of the rachilla, finely scabrous toward the narrow, obscurely bifid apex

This species is apparently most closely allied, in its vegetative characters at least, to *Schizostachyum Blumei* and *S. lima*. It is readily distinguishable from these species, however, by the spikelet characters, as is shown in the following tabular comparison:

	<i>Schizostachyum Blumei</i> (NEES's type specimen) and <i>Schizostachyum lima</i>	<i>Schizostachyum biflorum</i> (BLUME's series at Leiden)
Prophylls of the pseudo-spikelets	longer, the cilia on the keels less prominent, sometimes entirely lacking	shorter, the cilia on the keels more prominent, each keel with a conspicuous tuft of cilia at its apex
Spikelets	compact, uniformly 1-flowered	loose, uniformly 2-flowered
Normal rachilla segments	lacking	one, up to 4.5 mm long
Lemmas	up to 20 mm long, tightly convolute	in the flower floret, up to 8.5 mm long, loosely convolute; in the upper floret, up to 11.5 mm long, tightly convolute

	<i>Schizostachyum Blumei</i> (NEES's type specimen) and <i>Schizostachyum lima</i> (cont.)	<i>Schizostachyum biflorum</i> (BLUME's series at Leiden) (cont.)
Paleas	about as long as the lemma, tightly convolute, narrowly sulcate, not conspicuously keeled, the apex prominently bicornate	in the flower floret, up to 13 mm long, long-exserted, loosely convolute, broadly sulcate, conspicuously 2-keeled, the apex truncate and obscurely emarginate; in the upper floret, up to 13 mm long, visibly exserted, tightly convolute, narrowly sulcate, not conspicuously keeled, the apex truncate, obscurely bifid

The enumeration of the vegetative characters by means of which these three species may be distinguished must be deferred until those of *S. Blumei* and those of *S. biflorum* are more fully known.

Acknowledgements.

In addition to acknowledgements made in the foregoing text, I wish to enumerate certain other obligations. It is a pleasure to acknowledge the assistance derived through discussions of various aspects of this interesting subject with Mrs. AGNES CHASE, Associate Agrostologist of the Division of Plant Exploration and Introduction, of the Bureau of Plant Industry, the U. S. Department of Agriculture. The photograph of the nomenclatural type of *Schizostachyum biflorum*, and the line drawings (from my pencil sketches) were made by the technicians at the Rijks-herbarium, under the supervision of Dr. HENRARD. For permission to reproduce the photograph of NEES's type, I am obligated to the Division of Plant Exploration and Introduction, of the Bureau of Plant Industry, the U. S. Department of Agriculture. Furthermore, I am indebted to the Board of Directors, and the Board of Trustees, of Lingnan University, for the extension of my leave of absence, which made possible the visit to Leiden. To the Rockefeller Foundation I am indebted for financial

assistance which has made possible the assembling of the necessary literature bearing on this and other problems relating to the Oriental bamboos.

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Footnotes.

1. Paper from the Lingnan Natural History Survey and Museum, Lingnan University, Canton, China.
2. Curator of Economic Botany, L. N. H. S. M., and Professor of Botany, Department of Biology, Lingnan University (on leave, 1933—1936).
3. Until recently I had not been able to locate the actual type of *Schizostachyum Blumei* NEES. Upon the discovery of BLUME's supposed type collection at Leiden last summer, I prepared a revised description of the genus *Schizostachyum* to include this latter species, which is characterized by 2-flowered spikelets. That paper is being published in the Lingnan Science Journal (McCLURE, 1936). From the statements therein it is clear that I was under the impression that the plant represented by BLUME's collection at Leiden was conspecific with NEES's type, although it did not agree in the spikelet characters with NEES's description. I attributed the discrepancies to the fact of the confusing nature of the inflorescences in this genus, imputing to NEES faulty observation of which he was not guilty, though anyone will admit that his description is somewhat vague, to say the least. And certainly it does not convey a clear impression of the inflorescence characters to one not already thoroughly familiar with this genus. The addition to the generic description are appropriate enough, but my faulty interpretation of BLUME's collection as conspecific with NEES's type must be kept in mind in reading the associated text.
4. This is the only sheet of this species which has come to light which bears the name *Schizostachyum Blumei* in NEES's own hand. There are two envelopes attached, each containing dissections of portions of the inflorescence. One is labeled, in NEES's hand, „spicula 1.”

5. This description will probably have to be modified more or less, and certainly will have to be supplemented, when living plants of the species have been studied. The observations of microscopic details recorded were made with the aid of a binocular microscope fitted with lenses giving a magnification of 20 diameters.
6. The margin of the ligule in this genus is very commonly fimbriate at first, and may become smooth in age by weathering or other agency. The smooth condition of the obviously weathered ligules in NEES's type is no certain indication that they were not fimbriate originally.
7. The surface outgrowths, as well as other foliar characters, are extremely variable in this genus, and should receive only minor emphasis as criteria for distinguishing species.
8. One floriferous twig bears leaf sheaths from which the blades have fallen.
9. Special attention is directed to the importance of these units, in this genus and related genera, as affording the only clue to an understanding of the development of the inflorescence and its variable expression. An important feature of these pseudospikelets is the exceedingly variable nature of their different component elements, more especially those of the spikelets by which they are terminated. The spikelets may be perfect, and promptly deciduous, on the relatively earlier pseudospikelets (rachis branches of relatively lower order) but are progressively less well developed, and ultimately sterile, on the relatively later ones (rachis branches of relatively higher order). Furthermore, the relative size, shape and other features and relationships of the lemmas and paleas of given florets change in correspondence with this progressive degeneration of the pseudospikelets. It should be added that the prophylls and bracts of the pseudospikelets are also variable in size and texture, those on relatively later ones being relatively smaller in size and more delicate in texture.
It is pointed out, and should be kept in mind, that the description here given is based on a study of the most fully developed pseudospikelets available in the specimen cited. Since the *most fully developed* perfect spikelets are very promptly deciduous, these have not been seen. Evidence of their loss is to be seen in the presence of the empty rachis tips from which they fell. Subsequent study of fresh material should, therefore, reveal further data on these characteristic, but very elusive structures.
10. NEES (1829, p. 534, under „Observ. III.’’) where he says (line 14 from the bottom): „gluma inferior minor, obtusa, bifida, ...’’ must have been referring to this feature.
11. BLUME's expression, „armdikker’’ (thick as the arm), written on one of the field labels, probably refers to the thickness of the arm at the wrist. No culm specimen of the other species I have seen exceeds this size. Furthermore, the greatest culm thickness recorded for any species of this genus, to my knowledge, is that of *S. Hallieri* GAMBLE, which is 4 cm.
12. The culm sheaths are represented only in HLB 908.84—971, by two small, weathered examples loosely attached to the upper nodes, only one of these being sufficiently well preserved to reveal the general characters given.
13. The scabrousness scarcely visible with an ordinary 8-power hand lens, but clearly discernible under a binocular microscope giving a magnification of 20 diameters.

14. Only HLB 908.100—74 has leaves associated *on the same twigs* with inflorescences. Here the blades of the larger ones (probably developed during the vegetative stage of the plant) have fallen, those remaining (on other floriferous twigs) having blades up to 34 cm long and 4—5 cm wide, with correspondingly smaller sheaths, slightly less well developed oral setae and ligular fimbriae, but otherwise identical with those of the sterile specimens, HLB 909.65—236 and 237, on which my leaf descriptions have been based.
15. These at first solitary at the nodes of primary or secondary branches and twigs, but soon, by development of their basal buds into new pseudospikelets, they become increasingly numerous and crowded, ultimately forming dense, subglobular heads.
16. No attempt is made here to distinguish between the first, or primary, rachis, and the rachis branches of relatively higher order, as no constant difference, except a minute difference in size, has been noted.
17. See tabular arrangement of contrasting features of the lower and upper florets which follows the description.

Illustrations.

1. Photograph of *Schizostachyum Blumei* NEES, the nomenclatural type at Berlin-Dahlem.
 2. Photograph of *Schizostachyum biflorum* sp. nov., the nomenclatural type at Leiden (HLB 908.84—971).
 3. Sketch showing a pseudospikelet of *Schizostachyum Blumei* NEES ($\times 2\frac{1}{2}$) from the type.
 4. Sketch showing spikelet of same ($\times 5$) from the type.
 - 4a. Sketch showing palea of same, with prolongation of rachilla, and stigmas ($\times 5$) from the type.
- The following line drawings all from *Schizostachyum biflorum* sp. nov.:
5. Well developed pseudospikelet representing a primary branch of the rachis (from HLB 908.84—971).
 6. Schema of the structure of the foregoing.
 7. A poorly-developed pseudospikelet (from HLB 908.84—909).
 8. Schema of same.
 9. Prophyllum from same.
 10. Spikelet, showing the two florets (from HLB 908.84—971).
 11. Lemmas of the lower (a) and upper (b) florets, respectively, of the same.
 12. Paleas of the lower (a) and upper (b) florets, respectively, of the same.
 13. Rachis branch (axis of pseudospikelet) stripped of its appendages (from HLB 908.84—909).
 14. Normal rachilla segment (at back of lower floret) (from HLB 908.84—971).
 15. Prolongation of the rachilla (at back of upper floret) (from HLB 908.84—971)
 16. Culm sheath (enlarged) from upper node (HLB 908.84—971).
 17. Apex of leaf sheath and insertion of petiole (from HLB 909.65—237).

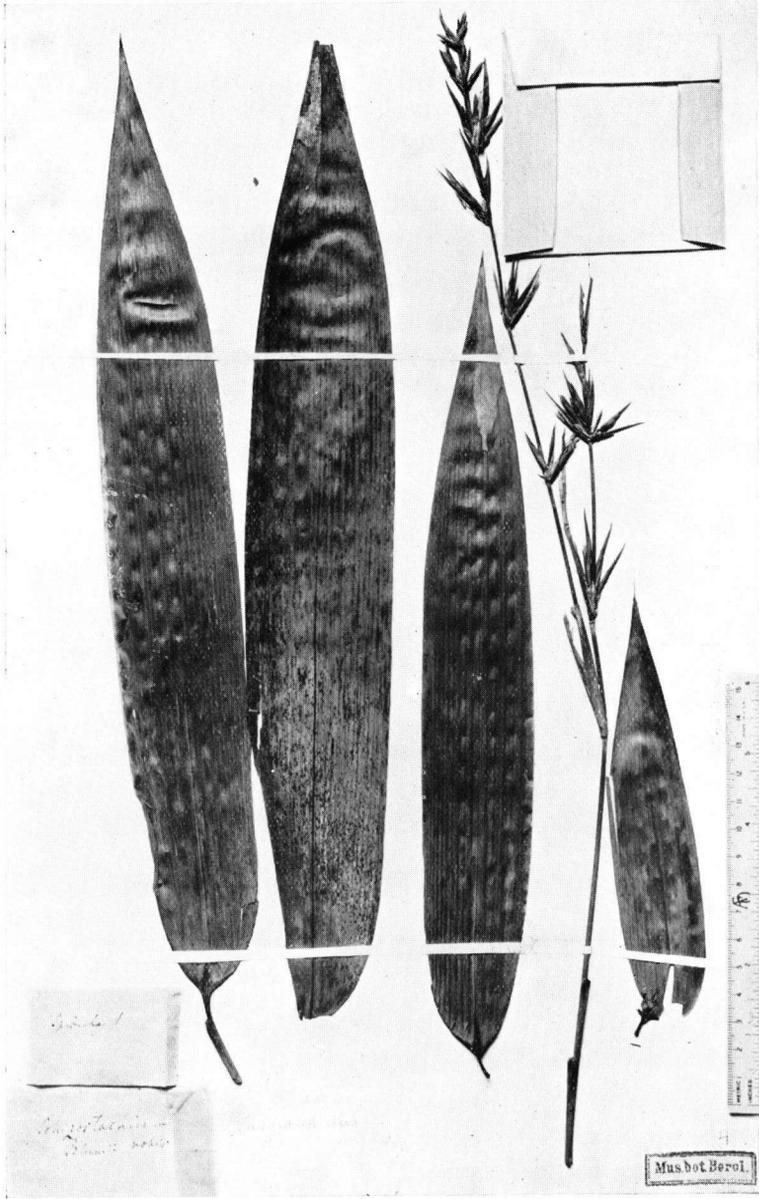


Fig. 1.



HERB. LUGD. BAT. No. 84 971



Herb. Lugd. Bat. *Schizostachyus blumei* Nees
det. J. Th. Menard 1925

Herb. Lugd. Batav.

200190
coll. H. L. B.
HAMBUSA

Bambusa Lami
Sclerostachyus blumei
Sclerostachyus

1898

Fig. 2.

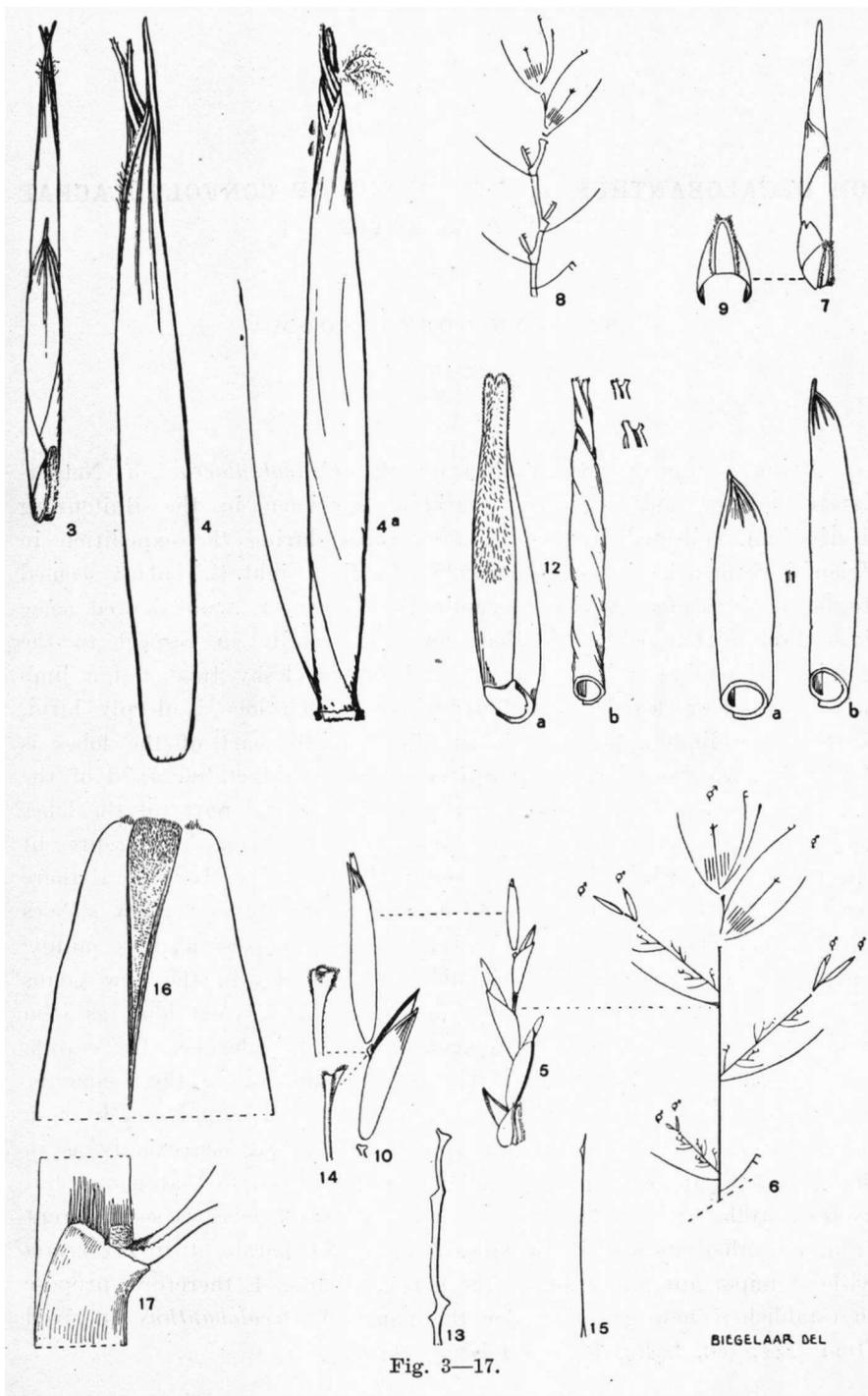


Fig. 3—17.