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HERBARIUM BOGORIENSE, BIDANG BOTANI, PUSAT PENELITIAN BIOLOGI - LIPI,
BOGOR, INDONESIA
A REVISION OF MALESIAN ISACHNE SECT. ISACHNE (GRAMINEAE, PANICOIDEAE, ISACHNEAE)

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ABSTRACT
ISKANDAR, E.A.P. & VELDKAMP, J.F. 2004. A revision of Malesian Isachne sect. Isachne (Gramineae, Panicoideae, Isachneae). Reinwardtia 12 (2): 159 – 179. – There are ca. 23 species of Isachne in Malesia of which the seven belonging to sect. Isachne are treated here. Isachne miliacea Roth has been misapplied to I. minutula (Gaudich.) Kunth, as its type belongs to I. globosa (Thunb.) Kuntze. Isachne pulchella Roth is the correct name for I. dispar Trin.

Key words: Isachne, Gramineae, Malesia.

INTRODUCTION

In this study we have revised the Malesian species of Isachne R. Br. sect. Isachne (Gramineae) which have heteromorphous florets, i.e. the lemma and palea of the lower florets are different in shape, sometimes also in pubescence, and much less indurated than those of the upper ones.

HISTORY

The first species attributable to Isachne appears to be the pre-Linnean Meneritana. Gramen miliaceum folio hirsuto of Hermann (1717: 24). It was later casually mentioned by Linnaeus (1747: 18, in a note). This has been identified as Isachne globosa (Thunb.) Kuntze.

In the Species plantarum (1753) and other publications Linnaeus never mentioned Meneritana again and apparently had no material of Isachne.

Thunberg (1784-a, -b) described Milium globosum from Japan, the basionym of I. globosa.

R. Brown (1810) erected Isachne with only I. australis R. Br., remarking that Meneritana Herm. belonged to the same genus. Later authors attributed the combination I. meneritana to him, but he did not make it. Isachne australis turned out to be a synonym of I. globosa as well.

Roemer & Schultes (1817: 475) included Meneritana in Neurachne R. Br. and added (p. 476) 3 species from Roth’s manuscript of the ‘Novae plantarum species’ (1821) to Isachne. One of these, I. tricarinata Roth, turned out to be a synonym of Panicum brevifolium L., another, I. miliacea Roth, is a name widely applied to a SE Asian species. However, we have seen the type, and it turned out to belong to I. globosa whereby the correct name for the taxon to which it was misapplied becomes I. minutula (Gaudich.) Kunth.

Sprengel (1824) sprinkled the four Isachne species then known throughout his concept of Panicum L. and so was apparently the first to formally associate both genera.

Trinius (1826) mentioning only I. miliacea of the existing species added three new ones, I. atrovirens (Trin.) Trin., a synonym of I. globosa, I. rigens (Sw.) Trin., and I. panicea Trin., a
superfluous name for I. arundinacea (Sw.) Griseb.

About a year later (1827) he added 2 more: I. albens Trin. and I. dispar Trin. The first with homomorphous florets was not studied by us, the second with heteromorphous florets is a synonym of I. pulchella Roth.

Kunth (1829: 42) enumerated 7 species, among which the first one for the New World [Isachne dubia Kunth, nom. superfl. for Panicum dispermum Lam. = I. disperma (Lam.) Doell.]. Later (1830: 243; 1831: 407) he added two more species. In 1833 he listed 10.

Steudel (1840) included Isachne in Panicum. By 1853 (p. 38; 1854: 94) the first taxon had increased to 36 species which he regarded as a section of the latter. This was the last overall revision of the genus.

Döll (1877: 273) placed Isachne after Panicum.

Bentham (1878: 457) included Isachne in the subtribe Milieae of his 'Poaceae', but in 1881 (p. 30) 'following out the views of General Munro' recognised the Isachneae as a distinct tribe, which included a number of genera now regarded as misplaced there. The 'Panicaceae' was the other major infra-familiar taxon distinguished by him.

Hackel (1887: 35) placed the genus next to Panicum without further comment. He was followed in this by Hooker f. (1896), who said that the genus might belong to the 'Poaceae', after all, and that he regarded his 'limitation as most open to question ... (the pubescence of the spikelets) afford no specific character'. Later studies of the Indian species [e.g. by Bor (1960: 576) and Prakash & Jain (1984: 7)] showed that he was too pessimistic; nearly all his taxa are still recognised, although several now of course have different names.

Chase (1911: 149) discussed the history and relationships of the genus. She apparently had little material available, as she regarded Panicum trachyspermum Nees 'an exception to the genus in that the lower floret is unlike the upper'. Indeed, in the key (p. 106) she uses 'Florets alike in form and texture' to differentiate Isachne against Heteranthoecia Stapf.

Stapf (1917: 13, 16) created a subtribe with the alternative names Isachnastrae and Isachniniae in the Panicaceae which also included Isachne and Heteranthoecia. Isachniniae is the correct name.

Hitchcock (1920: 115) revised the 8 species occurring in America, regarding the position 'anomalous' in the Panicaceae because of the structure and division of sexuality of the spikelets.
recognised 29 species for *Isachne* and as they closely follow the floristic treatment by Bor (1960) the paper may be regarded as providing the descriptions and notes to that. As a follow-up they presented accounts of the phytogeography of the tribe and a survey of the leaf anatomy (1987). They recognised 110 species for *Isachne* with centers of speciation in India and Malesia and therefore suggested that the origin of the tribe might have been there. Curiously on their map the occurrence in the Carolines (2 spp), Fiji (1), Hawai‘i (2), Madagascar (9), New Zealand (1), Ponape (2), Réunion (6), and Vanuatu (1) has been omitted, although mention of some of these is made in the text. Note that most of the taxa mentioned for Africa are synonymous, e.g. with *I. buettneri* or not *Isachne* at all (See Appendix).

Clayton & Renvoize (1986: 309) suggested an origin by reversal of the sexuality of the lower floret from *Panicum* sect. *Verruculosae* Stapf, similar to the situation in *Dissochondrus* (Hillebr.) Kuntze arising from *Setaria* P. Beauv. With the bias towards American species in present molecular analyses the genus appears to have been much neglected. Kellogg & Campbell (1998: 321, t. 28.2, -3) have included *Heteranthoecia* (1986: 321, t. 28.2, -3) have included molecular analyses the genus appears to the other genera are not American the actual occurrence in the Carolines (2 spp), Fiji (1), Hawai‘i (2), Madagascar (9), New Zealand (1), Ponape (2), Réunion (6), and Vanuatu (1) has been omitted, although mention of some of these is made in the text. Note that most of the taxa mentioned for Africa are synonymous, e.g. with *I. buettneri*, or not *Isachne* at all (See Appendix).

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They defined the *Pancioideae* by the presence ‘of a single incomplete floret proximal to a single female fertile floret’. Actually the wording is misleading, what is meant is that the proximal floret is usually reduced [but not always!], bisexual in e.g. *Dissochondrus* and *Urochloa piligera* (F. Muell. ex Benth.) R.D. Webster ranging from male to completely eparate (e.g. in *Digitaria* Haller), while the upper floret is bisexual. In *Isachne* the situation is quite variable, as is discussed under morphology, but the principal structure of the spikelet of *Isachne* very much resembles that of the *Pancioideae*. Simple starch grains were mentioned as another synapomorphy.

Soreng & S.J. Pennington (2003: 274) included the subtribe *Isachninae* in the synonymy of the *Isachneae*, and that in the *Pancioideae*. As the other genera are not American the actual circumscription of their *Isachninae* is not clear, nor what its sister might be: to accept one subtribe implies there is another one.

**INFRA-GENERIC DELIMITATIONS**

Steudel (1854: 94) distinguished 3 informal and unnamed groups: both florets glabrous, both florets pubescent, both florets pubescent or scabrous, the latter two thus with rather confusing diagnoses. This division was not accepted by later authors; to us an infra-generic subdivision based on pubescence at present seems untenable, but it should be looked into.

Post & Kuntze (1903: 301) included *Sphaerocaryum* Nees ex Hook. f. as a section in *Isachne*, calling the latter sect. *Typisachna*, an invalid name, as an autonym is required.

Honda (1930: 278) apparently was the first to formally name sections within *Isachne* s.s.: *Euisachne* Honda for species with homomorphous florets. As he included the heteromorphously flowered *I. globosa* in it, the correct name for the type of the genus, this name is invalid, as an autonym is now required. *Paraisachne* Honda was erected for species with heteromorphous ones, with *Isachne dispar* as the only species, and so the type of it. According to his circumscription *I. globosa* is to be included in *Paraisachne* whereby that section must be called *Isachne*, and thus leaving the section with homomorphous florets without a name.

Stapf & Hubbard (1934: 1091) included *Sphaerocaryum* Nees ex Hook. f. as a section in *Isachne*, calling the latter sect. *Typisachna*, an invalid name, as an autonym is required.

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As our study included only the 'heteromorphous species' we can offer no opinion whether these sections are 'natural', i.e. monophyletic, only that the differences in shape and texture of the lemmas and paleas are useful in identification, while the situation within species is not always immediately clear (as in *I. globosa*).

**MORPHOLOGY**

**Glands**

Curious in some species (*I. diabolica* Ohwi, *I. globosa*, *I. minutula*, *I. pulchella*, *Isachne villosa* (Hitchc.) Reeder) is the presence of glandular bands on the culms below the nodes, and on the branches of the inflorescence, while the longest pedicel of the pair is glandular, the shorter one usually is not.

'The significance of the yellow viscid bands on the pedicels is unknown' [Judziewicz (1990: 294)]. Similar bands are also known in species of *Eragrostis*, *Panicum brevifolium*, *P. hirtum* Lam., *Sporobolus* spp., and no doubt elsewhere. One can speculate that they deter insects from moving about, or perhaps offer an attraction to ants to keep other insects off. No notes have made on any secretion of nectar, though.

**Spikelet structure**

As has already mentioned above the spikelets are bi-flowered and dehisc above the glumes. In the *Panicoideae* they generally fall as a whole with the glumes, but exceptions exist, e.g. in *Ichnanthus* P. Beauv. where the upper floret may fall from the spikelet. The spikelets are abaxial, an important character in the *Panicoideae*.

They are, as in the *Panicoideae*, determinate, that is, there is no rachilla process beyond the upper floret. Occasionally a third floret may be developed, as happens also in the *Panicoideae*, but this seems best regarded as an 'error of enthusiasm' and not an indication of a previous situation. As also has been mentioned above in one section the lower florets differ from the upper ones in shape and texture of the lemmas and paleas. As in the *Panicoideae* the lower ones are thinner (and often longer) than the indurated upper ones. Whether this is an indication of a 'deep split' in the phylogeny as has been implied or actually stated by previous students of the genus by the recognition of two sections based on this, was not the subject of this study.

**Floret sexuality**

The two florets show a remarkable variation in sexuality. In the *Panicoideae* the general tendency is to have a reduction of the lower floret. Exceptionally both florets are bisexual and this may be a reversal to an original state, but more usually the plants are androdioecious with the lower floret paleate and male, or paleate and sterile, or eparate, whereby the spikelet appears to be uniflorous with three glumes. In *Isachne* there seems to be a state of what may be called indecision: both florets may be bisexual, presumably the plesiomorphic condition, but the situation may be inconstant in the same taxon.

In all but one of the species (*I. villosa*) of the present study the lower floret is male, in five the upper one female: *I. brassii*, *I. diabolica*, *I. globosa* (the upper one rarely bisexual), *I. minutula*, *I. pulchella*. The upper floret is always bisexual in *I. langkawiensis* and *I. villosa*.

The epithet in *E. dioica* Swallen is misleading, as the plants are described as monoecious: the lower floret being male, the upper one female.

**Lemma pubescence**

Lack of time made it impossible to study the kind of hairs on the lemmas (and paleas) but a cursory survey suggested that there are very curious types which may aid in specific delimitations, if not in infrageneric ones, as are known to be present in *Digitaria* Haller and *Panicum*.

**Anatomy**

Notes on the influence of the anatomy on tribal and generic delimitation have been mentioned in the preceding, it seems superfluous to summarise this here. The reader is referred to the studies made by Potztal (1952), Tateoka (1957), Metcalfe (1960), Hsu (1965), W. V. Brown (1977), and Prakash & Jain (1987).

**ISACHNE R. Br.**


Plants annual or perennial. Culms hollow. Nodes glabrous to pubescent with bulbous hairs, glandular or eglandular below it. Ligules setose. Panicle contracted to lax, glandular or eglandular. Spikelets paired to distally solitary, pedicelled, glandular or eglandular. Glumes subequal, 5-9-nerved. Glumes subequal, 5-9-nerved. First lemma oblong, 1.2–2.5 mm long, glabrous or glandular. Lower glume 0.9–1.4 mm wide. Upper glume 1.7–2.7 by 1–1.5 mm. Rachilla between florets distinctly obdeltoid. First lemma oblong, 1.9–2.5 by 0.9–1.2 mm .... 3. *I. globosa*

**KEY TO ISACHNE SECT. ISACHNE IN MALESIA**

1. Culms with annular glands below the nodes — 2
2. Culms without annular glands below the nodes — 3

3. Culm nodes glabrous. Blades lanceolate, 10.5–14 cm long by 15–20 mm, smooth, 13-nerved. Base rounded. Margins not white, not undulate. Panicle loosely contracted, 22 by 11 cm. Spikelets not secund, not yawning at maturity, obovoid, 1.5–1.9 mm wide. Lower glume 1.8–2 by 1.1–1.8 mm, 7-nerved. Upper glume 1.8–1.9 mm long, 9-nerved. Lower floret ellipsoid and planoconvex. – W Sumatra .... 2. *I. diabolica*

4. Culm nodes pubescent. Sheaths 0.6–1.5 cm long, margin pubescent to pubescent with bulbous hairs. Blades ovate-oblong to ovate-lanceolate, 1.2–3 cm by 3.5–11 mm, scaberulous, 7-nerved. Base cordate, claspering, and pectinate. Margins white cartilaginous, undulate. Spikelets secund, yawning at maturity, obovoid, 1–1.1 mm wide. Lower glume 1.2–1.3 by 0.7–0.8 mm, 5-nerved. Upper glume 1.2–1.3 mm long, 7-nerved. Lower floret flattened ellipsoid .... 6. *I. pulchella*

5. Culm nodes glabrous. Blades 7–9-nerved ... 5

6. Blades margins not white cartilaginous .... 4
7. Blades margins white cartilaginous .... 6

8. Culms nodes pubescent. Blades 5-nerved. – Spikelets 1.3–2 mm long, obovoid. Lower glume 0.7–0.9 mm wide. Upper glume 1.4–1.9 by 0.75–1.3 mm. Rachilla between florets distinctly obdeltoid. First lemma oblong, 1.25–2 by 0.8–0.85 mm .... 5. *I. minutula*

9. Spikelets 1.2–1.5 mm long, obovoid. Lower glume 0.5–0.7 mm wide. Upper glume 1.3–1.6 by 0.7–0.8 mm. Rachilla between florets flattened and parallel-sided. First lemma elliptic, 1.2–1.25 by 0.6–0.8 mm .... 1. *I. brassii*

10. Spikelets 1.75–2.7 mm long, globular or ellipsoid. Lower glume 0.9–1.4 mm wide. Upper glume 1.7–2.7 by 1–1.5 mm. Rachilla between florets distinctly obdeltoid. First lemma oblong, 1.9–2.5 by 0.9–1.2 mm .... 3. *I. globosa*

11. Spikelets 1.2–1.5 mm long, obovoid. First lemma elliptic, 1.1–1.2 mm long, puberulous. – Blades 5-nerved, scaberulous. Base narrowed, pectinate. Panicle lowermost branch naked in the lowermost 0.06–0.2-th. Lower glume elliptic, 0.75–1 mm wide, 7-nerved, glabrous, obtuse. Upper glume obovate, 1.25–1.6 mm long, glabrous, obtuse. First lemma 0.7–0.75 mm wide. Rachilla between florets terete. Upper floret bisexual. Second palea elliptic. New Guinea .... 7. *I. villosa*

12. Spikelets 1.75–2.7 mm long, globular or ellipsoid. First lemma oblong to obovate oblong, 1.75–2.55 mm long, glabrous .... 7

13. Spikelets 1.2–1.5 mm long, obovoid. First lemma elliptic, 1.1–1.2 mm long, puberulous. – Blades 5-nerved, scaberulous. Base narrowed, pectinate. Panicle lowermost branch naked in the lowermost 0.06–0.2-th. Lower glume elliptic, 0.75–1 mm wide, 7-nerved, glabrous, obtuse. Upper glume obovate, 1.25–1.6 mm long, glabrous, obtuse. First lemma 0.7–0.75 mm wide. Rachilla between florets terete. Upper floret bisexual. Second palea elliptic. New Guinea .... 7. *I. villosa*

**1. ISACHNE BRASSII** Hitchc. – Fig. 1.


Plants perennial. Culms loosely tufted to geniculate, rooting in decumbent nodes, 0.1–0.35 m long, nodes glabrous (rarely pubescent), without annular glands below them, internodes 1.5–6 cm long. Sheaths 1–2 cm long, glabrous (rarely pubescent), margin pubescent to pubescent with bulbous hairs. Ligule setose, hairs 0.75–1.5 mm long. Blades linear-lanceolate to
linear, 1.25–5.25 cm by 2–6 mm, base narrowed and pectinate, scaberulous, glabrous to pubescent, 7-nerved, margins not white, not undulate, scaberulous, pectinate. Panicle loosely contracted, 2.2–7.5 by 1–4.5 cm. Panicle branches 7–13, eglandular, smooth; lowermost branch 1.1–3.5 cm long, naked in the lowermost 0.04–0.1-th, with 2–6 branches and 9–20 spikelets. Pedicels eglandular, smooth; of the lower spikelet shorter than the spikelet; of the upper spikelet longer than the spikelet. Spikelets not secund, paired to distally solitary, not yawning, obovoid, 1.2–1.5 by 0.75–1.4 mm. Lower glume elliptic to obovate, 1.3–1.65 mm long, 0.55–0.75 mm wide, membranous, (5- or) 7-nerved, glabrous, smooth to distally scaberulous, obtuse; upper glume obovate to elliptic, 1.3–1.6 by 0.7–0.8 mm wide, membranous, 7-nerved, glabrous, smooth to distally scaberulous, obtuse. Rhachilla between florets flattened and parallel-sided. Lower floret flattened ellipsoid, male. Lemma elliptic, at anthesis longitudinally grooved, 1.2–1.25 by 0.65–0.8 mm, chartaceous, glabrous, apex rounded. Palea elliptic, 1.2–1.25 by 0.6–0.7 mm, chartaceous, glabrous, apex rounded. Anthers 0.6–0.9 mm long. Upper floret planoconvex and gibboid, female. Lemma elliptic, 0.9–1.2 by 0.8–1 mm, 0.7–1 times as long as the first lemma, at anthesis chartaceous, glabrous to puberulous.

**Fig. 1.** *Isachne brassii* Hitchc. Spikelets. From *Gjellerup 33* (L)

along the margin, apex rounded. Palea elliptic, 0.8–1 by 0.6–0.75 mm, chartaceous, glabrous to glabrescent, apex rounded.

**DISTRIBUTION.** Malesia: C Celebes, Moluccas (Buru, E. Ceram), New Guinea: Irian Jaya (Mamberamo, Eta River, Tami River, Taritatu River), Papua New Guinea (Western Province, Central Province).

**HABITAT.** On sand drifts in river, sago swamps, by the edges of a small pond in partly felled primary forest, cultivated ground, roadsides, up to 100 m alt.

**COLLECTOR’S NOTES.** Flowers white.

2. **ISACHNE DIABOLICA** Ohwi – Fig. 2.


Plants perennial. Culms geniculate, rooting in decumbent nodes, c. 0.5 m long, nodes glabrous, with annular glands below them, internodes 5.5–12 cm long. Sheaths 5.5–8.5 cm long, glabrous, margin glabrous. Ligule setose, hairs 3.8–4.5 mm long. Blades lanceolate, 10.5–14 cm by 15–20 mm, base rounded, smooth, glabrous, 13–(15)-nerved; margins not white, not undulate, scaberulous, not pectinate. Panicle loosely contracted, c. 22 by 11 cm; branches more than 20, glandular, smooth; lowermost branch c. 8 cm long, naked in the lowermost 0.125-th, with c. 6 branches, and c. 30 spikelets. Pedicels smooth; of the lower spikelet eglandular, shorter than the spikelet; of the upper spikelet glandular, longer than the spikelet. Spikelets not secund, paired to distally solitary, not yawning, globular, 1.5–1.8 by 1.5–1.9 mm. Lower glume elliptic, 1.8–2 by 1.1–1.8 mm, membranous, 7-nerved, glabrous, smooth, obtuse; upper glume obovate to elliptic, 1.8–1.9 by 0.7–1.5 mm, membranous, 9-nerved, glabrous, smooth, obtuse. Rhachilla between florets terete. Lower floret ellipsoid and planoconvex, male. Lemma elliptic, at anthesis not longitudinally grooved, 1.7–1.75 by 1.1–1.2 mm, chartaceous, glabrous, obtuse. Palea elliptic, 1.6–1.65 by 0.9–1 mm, chartaceous, glabrous, obtuse. Anthers 0.7–1 mm long. Upper floret planoconvex, female. Lemma elliptic, 1.4–1.5 by 1.2–1.25 mm, 0.8–0.9 times as long as the first lemma, at anthesis chartaceous, puberulous, obtuse. Palea elliptic, 1.25–1.3 by 0.8–1 mm, chartaceous, puberulous, obtuse.
DISTRIBUTION. Malesia: W Sumatra (Mt. Kerinci)

Fig. 2. *Isachne diabolica* Ohwi. Spikelets. From Blümmemeijer 8739 (BO type).

HABITAT. 1600 m alt.

NOTE. Only known from the type specimen.

3. ISACHNE GLOBOSA (Thunb.) Kuntze – Fig. 3.


*Panicum gonatodes* Steud., *Syn. Pl. Glumac.* 1 (1854) 95. – Type: d’Urville s.n. (P, holo), (n.v.) 1 mm


Plants perennial or annual. Culms erect, geniculate, rooting in decumbent nodes, 0.15–0.75 m long, nodes glabrous, without annular glands below them, internodes 1.4–13 cm long.
Sheaths 1–5.5 cm long, glabrous to distally pubescent, margin glabrous to pubescent with bulbous hairs. Ligule setose, hairs 1.25–4 mm long. Blades linear-lanceolate to linear, 1.5–9.5 cm by 2.5–6 mm, base abruptly narrowed and pectinate, scaberulous, glabrous to pubescent with bulbous hairs, (5–)9-nerved; margins white cartilaginous or not, not undulate, scaberulous, pectinate or not. Panicle loosely contracted, 2.5–14 by 1–7 cm; branches 5–17, eglandular or glandular, smooth to scaberulous; lowermost branch 1.3–6.2 cm long, naked in the lowermost 0.1–0.3-th, with 2–5-branches and 6–25 spikelets. Pedicels smooth to scaberulous; of the lower spikelet eglandular, shorter than the spikelet (rarely longer); of the upper spikelet eglandular or glandular, longer than the spikelet (rarely shorter). Spikelets not secund, paired to distally solitary, not yawning, globular to ellipsoid, 1.75–2.7 by 1–1.85 mm. Lower glume elliptic to obovate, 1.6–2.7 by 0.85–1.4 mm, membranous, 7-nerved, glabrous, smooth to scaberulous, obtuse; upper glume obovate to elliptic, 1.6–2.7 by 0.9–1.5 mm, membranous, 7(–9)-nerved, glabrous, smooth to scaberulous, obtuse. Rhamphilla between florets distinctly obdeltoid. Lower floret flattened ellipsoid, male. Lemma oblong, at anthesis longitudinally grooved, 1.75–2.5 by 0.8–1.25 mm, at anthesis membranous, glabrous, obtuse. Palea oblong, 1.65–2.3 by 0.7–1.15 mm wide, membranous, glabrous, obtuse. Anthers 0.8–1.8 mm long. Upper floret planoconvex, female or rarely bisexual. Lemma elliptic, 1.25–1.8 mm by 0.75–1.3 mm, 0.5–1.05 times as long as the first lemma, at anthesis chartaceous, glabrous to puberulous, obtuse. Palea elliptic, 1.2–1.55 by 0.75–1.2 mm, chartaceous, glabrous to puberulous, obtuse. Anthers 3, 0.5–1 mm long.

DISTRIBUTION. India, Sri Lanka to Japan, China, Solomon Islands, New Caledonia, Australia, New Zealand; Malesia: Malay Peninsula (Negeri Sembilan, Malacca, Langkawi, Perlis, Pahang, Selangor), Singapore, Sumatra (Aceh, N-, W Sumatra, Palembang, Bangka, Lingga Island), Java (widespread), Borneo (Sarawak, E Kalimantan), Philippines (Manila), N-, S. Celebes, Lesser Sunda Islands (Sumba, Timor), Papua New Guinea (Western Highlands province, East Sepik Province).

HABITAT. Marshy places, waterside, wet places, sawah, inundated rice fields, riverbanks, lakeshores, edge of ditch, can be submerged ca. 6 cm under water, swamps, sunny area, dune swards, 0–1400 m alt.

USES. Excellent fodder.

COLLECTOR’S NOTES. Flowers light violet. Stamens (stigmas) purple.

NOTE. Ramos 12230 (L) was the only collection seen from the Philippines. This specimen did not quite agree with the rest of the species, for the nodes are sometimes pubescent, and there are annular glands under some of them. Metz in his
manuscript for the Pflanzenreich (unpublished, copy in L) used a duplicate in B to describe a new species, *I. manilensis* Mez (ined.). Yet, we could not decide on a better place for it then here.

4. ISACHNE LANGKAWIENSIS Jansen – Fig. 4.

*Isachne langkawiensis* Jansen, Reinwardtia 2 (1953) 284. – Type: SF 37959 (Corner & Nauen) (SING, holo, L!, iso).

Plants perennial. Culms loosely tufted and erect, 0.3–0.45 m long, nodes glabrous to pubescent, without annular glands below them, internodes 1.5–7.5 cm long. Sheaths 1–3 cm long, pubescent with bulbous hairs, margin pubescent to pubescent with bulbous hairs. Ligule setose, hairs 0.2–0.6 mm long. Blades linear, 2–6.5 cm by 2–6.5 mm, base narrowed and pectinate, scaberulous, pubescent with bulbous hairs, (3–5)–7-nerved; margins white cartilagineous, not undulate, scaberulous, not pectinate. Panicle loosely contracted, 6–10 by 3.5–5.5 cm; branches 6–15, eglandular, smooth; lowermost branch 2–3.5 cm long, naked in the lowermost 0.02–0.06 cm, with 2-branches and 6–9 spikelets. Pedicles eglandular, smooth; of the lower spikelet shorter to longer than the spikelet; of the upper spikelet longer than the spikelet. Spikelets not secund, paired to distally solitary, not yawning, ellipsoid, 1.75–2 by 1–1.2 mm. Lower glume elliptic to oblong, 1.75–2.1 by 0.75–0.8 mm, membranous, 5–nerved, distally pubescent with bulbous hairs, smooth, acute; upper glume obovate oblong, 1.5–1.6 by 0.7–0.9 mm, membranous, 7-nerved, pubescent with bulbous hairs, smooth, hairs 0.3–0.8 mm long, acute. Rhachilla between florets terete. Lower floret flattened ellipsoid, male. Lemma obovate oblong, at anthesis longitudinally grooved, 1.6–2 by 0.7–0.75 mm, at anthesis chartaceous, glabrous, obtuse. Palea obovate to lanceolate, 1.6–1.9 by 0.5–0.65 mm, chartaceous, glabrous, obtuse. Anthers 1–1.5 mm long. Upper floret planoconvex, bisexual. Lemma obovate, 1.2–1.4 by 0.6–0.75 mm, 0.6–1 times as long as the first lemma, at anthesis chartaceous, puberulous, obtuse. Palea obovate oblong, 1–1.35 by 0.4–0.6 mm wide, chartaceous, glabrous, obtuse. Anthers 0.6–0.75 mm long.

DISTRIBUTION. Malesia: Malay Peninsula (Langkawi Island).

HABITAT. On limestone, in wet depressions in rocks, in a very wet part with trickling ground water, fully exposed to the sun, on low altitude (c. 20 m).

4. ISACHNE MINUTULA (Gaudich.) Kunth – Fig. 5.


Plants perennial. Culms loosely tufted or erect or geniculate, rooting in decumbent nodes, 0.05–0.45 m long, nodes pubescent (rarely glabrous), without annular glands below them, internodes 0.6–6.5 cm long. Sheaths 0.4–1.75 cm long, glabrous to pubescent with bulbous hairs, margin pubescent. Ligule setose, hairs 0.7–1.5 mm long. Blades ovate-lanceolate to linear, 0.9–3.5 cm by 2–5 mm wide, base narrowed and pectinate, scaberulous, glabrous to pubescent, 5-nerved (rarely 3 or 7); margins not white, not undulate, scaberulous, not pectinate. Panicle loosely contracted, 2.5–5 by 1–3 cm wide; branches 3–12, eglandular or glandular, smooth to scaberulous; lowermost branch 1–1.8 cm long, naked in the lowermost 0.05–0.17-th, with 2–5-branches and 6–17 spikelets. Pedicels smooth to scaberulous; of the lower spikelet eglandular or glandular, shorter to longer than the spikelet; of the upper spikelet eglandular or glandular, longer than the spikelet. Spikelets not secund, paired, not yawning, obovoid, 1.3–2 by 0.8–2 mm. Lower glume elliptic, 1.4–1.9 by 0.7–0.9 mm, membranous, 7-nerved, glabrous, distally scaberulous, obtuse; upper glume obovate to rarely elliptic, 1.4–1.9 by 0.75–1.3 mm, membranous, 7–(9)-nerved, glabrous, distally scaberulous, obtuse. Rhachilla between florets distinctly obdeltoid. Lower floret flattened ellipsoid, male. Lemma oblong, at anthesis longitudinally grooved, 1.25–2 by 0.8–0.85 mm, at anthesis membranous, glabrous, obtuse. Palea oblong, 1.2–1.85 by 0.5–0.75 mm, mem-branous, glabrous, obtuse. Anthers 0.45–1.05 mm long. Upper floret planoconvex, female. Lemma elliptic, 0.9–1.4 by 0.65–1.05 mm, 0.45–1.1 times as long as the first lemma, at anthesis chartaceous, puberulous, obtuse. Palea elliptic, 0.75–1.3 by 0.6–0.95 mm, chartaceous, puberulous, obtuse.

DISTRIBUTION. India, Sri Lanka to Vietnam, Australia; malesia: Sumatra (Aceh, N. Sumatra, W Sumatra, Bangka, Enggano Isl.), Java, Madura, Kangean, Bawean, Borneo (Sarawak), Philippines (Luzon, Biliran, Panay Isl., Guimas Isl., Basilan Isl., Mindanao), N Celebes, Lesser Sunda Islands (Sumba, Alor, Timor, Tanimbar Isl.), Moluccas (Buru, Ambon).

HABITAT. Low wet areas, forested ridge, along the river, side of canal, marshy paddy field after harvest, swampy and muddy places, sawah dike, in occasionally flooded shallow ditch, edge and roadside, open and damp grassy places, on sandy soil with periodic flood, 10–400 m alt.

COLLECTOR’S NOTES. Inflorescence green.

NOTE. This taxon was previously erroneously called I. miliacea or I. pulchella Roth.
Isachne pulchella Roth. Spikelets. From Larsen & Larsen 34511 (L)

Plants perennial or annual. Culms tufted to loosely tufted, geniculate, rooting in decumbent nodes or straggling, 0.1–0.4 m long, nodes pubescent, with annular glands below them, internodes 1.4–4 cm long. Sheaths 0.6–1.5 cm long, glabrous to pubescent with bulbous hairs, margin pubescent to pubescent with bulbous hairs. Ligule setose, hairs 0.9–1.1 mm long. Blades ovate-oblong to ovate-lanceolate, 1.2–3 cm by 3.5–11 mm, base cordate, clasping, pectinate, scaberulous, glabrous to pubescent with bulbous hairs, 7–(–9)nerved; margins white cartilaginous, undulate, scaberulous, not pectinate. Panicle contracted to lax, 3–5 by 0.5–3.2 cm; branches 7–18, glandular, smooth; lowermost branch 0.6–1.7 cm long, naked in the lowermost 0.02–0.08-th, with 2–4-branches and 6–13 spikelets. Pedicels smooth; of the lower spikelet eglandular, shorter than the spikelet; of the upper spikelet glandular, longer than the spikelet. Spikelets secund, paired to distally solitary, yawning at maturity, obovoid, 1.1–1.5 by 1–1.1 mm. Lower glume elliptic, 1.2–1.3 by 0.7–0.8 mm, membranous, 5-nerved (sometimes 7), glabrous, smooth, obtuse; upper glume obovate, 1.2–1.3 by 0.7–1 mm, membranous, 7-nerved, glabrous, smooth, obtuse. Rachilla between florets terete. Lower floret flattened ellipsoid, male. Lemma elliptic, at anthesis not longitudinally grooved, 1.2–1.5 by 0.6–0.75 mm, membranous, glabrous, obtuse. Palea elliptic, 1.1–1.3 by 0.6–0.7 mm, membranous, glabrous, obtuse. Anthers 0.5–0.6 mm long. Upper floret planoconvex, female. Lemma obovate, 1.1–1.2 by 1–1.2 mm wide, 0.6–0.9 times as long as the first lemma, at anthesis chartaceous, puberulous, obtuse. Palea obovate, 1–1.1 by 0.6–0.7 mm wide, chartaceous, puberulous.

DISTRIBUTION. India, Nepal to SW China, Malesia: Sumatra (W-, N, Samosir Isl., Selayar Isl.), W Java, Borneo (Sabah, E. Kalimantan), Philippines (Mindanao), S Celebes.

HABITAT. Marshy places, on banks of ponds, tobacco fields, 0–1000 m alt.

COLLECTOR’S NOTES. Leaves slightly purplish underneath, anthers purple.

NOTES. The combination Isachne pulchella Roth has generally been equated with Sphecorocaryum malaccense (Trin.) Pilg., but the type, depicted by Bor (1952) actually is what is known as Isachne dispar Trin., and being older must replace it.

The taxon is easily recognised by the presence of an annular gland below the nodes, the blade with a cordate base, and white-cartilaginous and undulated margins.

Some authors have mentioned the presence of Isachne polygonoides (Lam.) Döll in SE Asia, but their application appears to be heterogeneous. Bentham (1849: 560) wrote: 'The Timor plant,
which Decaisne identified with Lamarck's *Panicum polygonoides*, is certainly this species'. We have not seen it.

Balansa [1880: 137] made the isonym *Isachne trachysperma* (Nees) Balansa, i.e. Nees (1857), which is a synonym of *I. polygonoides*. His collection (*Balansa 1675, L*) belongs to *I. globosa* (Thunb.) Kuntze.

Hooker f. (1896: 25) has it in the synonymy of *I. miliacea*, which in the present paper is called *I. minutula*. Being the oldest epithet A. Camus (1922: 413) regarded *I. polygonoides* as the correct name for Balansa's collection, but Schmid (1958: 327) again used *I. miliacea* for it.

Keng's use of the combination (1959: 639, 648, t. 585) was a misapplication to specimens belonging to *I. dispar* according to Chen (1990: 191), in the present paper replaced by *I. pulchella*.

In fact the two are rather similar but differ:

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- Ligule hairs 1.5–2.5 mm long. Spikelets not yawning at maturity, 1.25–1.75 mm wide. Upper glume 1.6–2.2 mm long. – S America .......... *I. polygonoides*
- Ligule hairs 0.9–1.1 mm long. Spikelets yawning at maturity, 1–1.1 mm wide. Upper glume 1.2–1.3 mm long. – SE Asia ...................... *I. pulchella*

7. **ISACHNE POLYGONOIDES** (Lam.) Döll.

*Isachne polygonoides* (Lam.) Döll in Mart., Fl. Bras. 2, 2 (1877) 742. – *Panicum polygonoides* Lam., Encycl. 4 (1798) 742. – Type: *Leblond s.n.* (P, holo, fragm. in US, IDC microfiche 6207).


**DISTRIBUTION.** America: S Mexico to Brazil, Peru.

8. **ISACHNE VILLOSA** (Hitchc.) Reeder – Fig. 7.


Plants perennial. Culms tufted and erect, 0.1–0.3 m long, nodes pubescent, without annular glands below them, internodes 0.8–6 cm long. Sheaths 0.6–3 cm long, glabrous to pubescent with bulbous hairs, margin pubescent to pubescent with bulbous hairs. Ligule setose, hairs 1.8–2 mm long. Blades linear-lanceolate to linear, 1.3–5.5 cm by 2–8 mm, base narrowed and pectinate, scaberulous, pubescent to pubescent with bulbous hairs, 5-nerved; margins white cartilaginous, not undulate, scaberulous, not pectinate. Panicle loosely contracted, 4.2–9 by 2–4.2 cm; branches 8–18, eglandular, scaberulous; lowermost branch 1.2–4 cm long, naked in the lowermost 0.06–0.2-th, with 2–8-branches and 6–39 spikelets. Pedicels eglandular, scaberulous; of the lower spikelet shorter to longer than the spikelet; of the upper spikelet longer than the spikelet, scaberulous. Spikelets not secund, paired to distally solitary, not yawning, obovoid, 1.25–1.5 by 0.75–1 mm. Lower glume elliptic, 1.35–1.75 by 0.75–1 mm, membranous, 7-nerved, glabrous, smooth, obtuse; upper glume obovate,
1.25–1.6 by 0.65–0.8 mm, membranous, (5–)7-nerved, glabrous, smooth, obtuse. Rhachilla between florets terete. Lower floret flattened ellipsoid, bisexual. Lemma elliptic, at anthesis longitudinally grooved, 1.1–1.2 by 0.7–0.75 mm, at anthesis chartaceous, puberulous, obtuse. Palea elliptic, 1–1.05 by 0.55–0.6 mm, chartaceous, puberulous, obtuse. Anthers 0.55–0.75 mm long. Upper floret planoconvex, bisexual. Lemma elliptic, 0.9–1.1 by 0.6–0.75 mm, 0.6–1.1 times as long as the first lemma, at anthesis chartaceous, glabrous to puberulous, obtuse. Palea elliptic, 0.75–0.8 by 0.4–0.65 mm, chartaceous, glabrous to puberulous, obtuse. Anthers 0.5–0.6 mm long.


HABITAT. Cleared hill, on steep slopes of road cutting, open places, on sand on bed of small stream, on an open rock-slide, in ditch on roadside, open ridge top, 1500–2300 m alt.

ADDITIONAL NOTES. Jansen (1953) thought that *Isachne surgens* Jansen had heteromorphic florets, and would thus belong to 'Eu-Isachne'. There are indeed some spikelets with somewhat heteromorphic florets, but in the majority the main difference is caused by the pubescence, which makes them look more different than they really are. As there is only a brief original description, we include a more lengthy one here.

9. ISACHNE SURGENS Jansen – Fig. 8.

*Isachne surgens* Jansen, Reinwardtia 2 (1953) 281. – Type: Bünnemeijer 11268 (BO, holo).

Plants perennial. Culms tufted, geniculate, rooting in decumbent nodes, 0.25–0.4 m long, nodes glabrous, without annular glands below them, internodes 0.5–5 cm long. Sheaths 0.8–1.5 cm long, glabrous, margin glabrous to pubescent with bulbous hairs. Ligule setose, hairs 0.5–1.1 mm long. Blades linear-lanceolate to linear, 1.5–4.5 cm by 2–4 mm, base narrowed, smooth, glabrous to puberulous above, pubescent underneath, 5-nerved; margins white cartilaginous, not undulate, scaberulous, not pectinate. Panicle loosely contracted, 3.5–5 by 1.5–2.5 cm; branches 3–9, eglandular, smooth; lowermost branch 1.6–2 cm long, naked in the lowermost 0.1–0.5-th, with 2-branches and 3–5 spikelets. Pedicels eglandular, smooth; of the lower spikelet shorter to longer than the spikelet; of the upper spikelet, longer than the spikelet. Spikelets not secund, paired to distally solitary, not yawning, ellipsoid, 2.25–2.5 by 1.7–2 mm wide. Lower glume oblong, 2.3–2.5 by 1–1.2 mm, membranous, 7-nerved, glabrous, smooth, obtuse; upper glume obovate to elliptic, 2–2.3 by 0.9–1.2 mm, membranous, 7-nerved, glabrous, smooth, obtuse. Rhachilla between florets not distinctly developed. Lower floret flattened ellipsoid, bisexual. Lemma oblong, at anthesis longitudinally grooved, 2–2.2 by 0.9–1.1 mm, at anthesis chartaceous, glabrous, obtuse. Palea oblong, 1.8–2.1 by 0.8–0.9 mm, chartaceous, glabrous, obtuse. Anthers 0.75–1 mm long. Upper floret planoconvex, bisexual. Lemma elliptic, 1.7–2 by 1–1.1 mm, 0.8–1 times as long as the first lemma, at anthesis chartaceous, puberulous, obtuse. Palea oblong, 1.6–2 by 0.75–0.9 mm, chartaceous, puberulous, obtuse. Anthers 0.7–0.8 mm long.

![Fig. 8. *Isachne surgens* Jansen. Spikelets. From Bünnemeijer 12207 (L)](image-url)

DISTRIBUTION. Malesia: Celebes (Mt. Bonthain).

HABITAT. Not recorded, 2750 m alt., probably in subalpine scrub.
**NOMINA DUBIA**

1. **PANICUM BATAVICUM** Steud.


2. **ISACHNE SUBGLOBOSA** Hatus. & T. Koyama


   NOTE. This species was described from the Ryukyus. Koyama (1976) extended its distribution to South China, 'Malaysia', and India. However, in 1987 (p. 136) he claimed that it was an endemic species of the Ryukyus. As we have not seen the type nor any other voucher, we exclude it here, but provisionally have accepted it in the Appendix.

**INDEX TO SPECIMEN EXAMINED**

bra: *Isachne brassii* Hitchc.
dia: *Isachne diabolica* Ohwi
glo: *Isachne globosa* (Thunb.) Kuntze
lan: *Isachne langkawiensis* Jansen
min: *Isachne minutula* Kunth
pul: *Isachne pulchella* Roth
sur: *Isachne surgens* Jansen
vil: *Isachne villosa* (Hitchc.) Reeder

Amdjah 18: glo – Asdat 133: glo.

Rutten-Kooistra 50: glo.
Zollinger 271: min.

APPENDIX: A NOMENCLATURAL SURVEY OF ISACHNE

The only global survey of the species of Isachne is by Steudel (1854) with a major one for India by Prakash & Jain (1987). Additional names were extracted from the Index kewensis (CD-ROM, vs. 2.0, 1997) and IPNI on the Internet. Local treatments were consulted but no recent ones are present for Madagascar and Réunion. Because of the lack of general information distributions can only be given roughly. This resulted in the following lists of 95 apparently accepted names and of 83 synonymous ones, and 11 uncertain ones. One comb. nov., and 2 nom. nov. are made.

This rough survey shows the presence of 23 species in Malesia (Jansen & Pennington 2003). There appear to be none in Europe.

ACCEPTED NAMES

Isachne angolensis Rendle in Hiern, Cat. Afr. Pl. 2 (1899) 166. – Africa: Angola to Nigeria.
Isachne borii Hemadri, Indian Forester 97 (1971) 223. – India (Maharashtra).
Isachne cochinchinensis Balansa, J. Bot. (Morot) 19 (1889) t. 85. – Bhutan, Sikkim, N India to SE China, Malesia (Sumatra, Malay Pen., Sabah, New Guinea).
Isachne decanensis Bor, Kew Bull. (4) (1949) 95. – India (Tamil Nadu).
Isachne diminuta Hillebr., Fl. Bras. 2, 2 (1890) 137. – Vietnam.
Isachne dimyloides Bor, Kew Bull. (4) (1949) 96. – Sikkim.
Isachne disperma (Lam.) Döll in Mart., Fl. Bras. 2, 2 (1877) 274. – Lesser Antilles.
Isachne distichophylla Munro [in H. Mann, J. Bot. 7 (1896) 178, nom. nud.] ex Hillebr., Fl. Hawaiian Isl. (1888) 504. – Hawai‘i.

Isachne albomarginata Jansen, Reinwardtia 2 (1953) 279. – Malesia (Sabah, Celebes, New Guinea).
Isachne elegans Dalzell in Dalzell & A. Gibson, Bombay Fl. (1861) 291; in Hook. f., Fl. Brit. India 7 (1897) 23. – India (W Ghats).

Isachne fischeri Bor, Kew Bull. (4) (1949) 69. – India (Kerala).


Isachne goiasensis Renvoize, Kew Bull. 42 (1987) 928. – Brazil.


Isachne hoi Keng f., Acta Phytotax. Sin. 10 (1965) 11. – China (Guangdong, Zhejiang).


Isachne incrassata Merr., Philipp. J. Sci. 5 (1910) 168. – Malesia (Philippines); doubtfully distinct from I. myosotis.


Isachne kinabaluensis Merr., J. Straits Branch Roy. Asiat. Soc. 76 (1917) 77. – India (Megalaya), Borneo, to Malesia (Sumatra, Malay Penins., Borneo).

Isachne kunthiana (Wight & Arn. ex Steud.) Nees ex Miq., Fl. Ned. Ind. 3 (1857) 460. – Sri Lanka, S India, to S China, Taiwan, Solomons.


Isachne langkawiensis Jansen, Reinwardtia 2 (1953) 284. – Malesia (Langkawi Isl.).

Isachne leersioides Griseb., Mem. Amer. Acad. Arts n.s. 8 (1863) 533. – Cuba.

Isachne ligulata Swallen, Caldasia 2 (1943) 305. – Colombia, Venezuela to S Peru.


Isachne littoralis Hook. f., Fl. Brit. India 7 (1896) 23. – India (Maharashtra, Karnataka).


Isachne mauritiana Kunth, Révis. Gramin. 1 (1830) 243, t. 33. – Africa, Madagascar, Mauritius.


Isachne minutula (Gaudich.) Kunth, Révis. Gram. 2 (1831) 407, t. 117. – Sri Lanka to Pacific (Carolines).


Isachne myosorensis Sundararagagh., Indian Forester 97 (1971) 304. – India (Karnataka).


Isachne obtecta Reeder, J. Arnold Arbor. 29 (1948) 313. – New Guinea.

Isachne oreades (Dom.) Bor, Grasses Burma, etc. (1960) 582. – India (Tamil Nadu).

Isachne pallens Hillebr., Fl. Hawaiian Isl. (1888) 504. – Hawai'i.

Isachne pangerangensis Zoll. & Moritzi in Moritzi, Syst. Verz. (1845) 102. – Malesia (Sumatra to Flores, N Borneo, Luzon, Mindoro).


Isachne polygonoides Döll in Mart., Fl. Bras. 2, 2 (1877) 273. – W Indies, Panama to Brazil.


Isachne puberula Bor, Dansk Bot. Ark. 68 (1965) 147. – Thailand.


Isachne pulchella Roth in Roem. & Schult., Syst. Verz. (1845) 102. – Malesia (Sumatra to Flores, N Borneo, Luzon, Mindoro).


Isachne rigidifolia (Poir.) Urb., Symb. Antill. 5 (1845) 85. – W Indies.

Isachne salzmannii (Trin. ex Steud.) Nees ex Miq., Fl. Ned. Ind. 3 (1857) 460. – Sri Lanka, S India, to S China, Taiwan, Solomons.


Isachne scabrosa Hook. f., Fl. Brit. India 7 (1896) 23. – India (Megalaya).

Isachne scabrosa Hook. f., Fl. Brit. India 7 (1896) 23. – India (Megalaya).


Isachne sikkimensis Bor, Kew Bull. (4) (1949) 115. – Bhutan, Nepal, Sikkim, India (W Bengal).


Isachne surgens Jansen, Reinwardtia 2 (1953) 281. – Malesia (SW Celebes).


Isachne villosa (Hitchc.) Reeder, J. Arnold Arbor. 29 (1948) 314. – New Guinea.


SYNONYMS


Isachne angusta Nees ex T. Durand & Schinz, Conspl. Fl. Afric. 5 (1894) 739, nom. superfl. = Isachne stenantha (Steud.) Veldk.

Isachne apoensis Elmer, Leafl. Philipp. Bot. 7 (1915) 2676; = Isachne albens Trin.

Isachne arisanensis Hayata, Icon. Pl. Formos. 6, Suppl. 96 (1917); Icon. Pl. Formos. 7 (1918) 57. = Isachne albens Trin.


Isachne australis R. Br., Prodr. 1 (1810) 196. = Isachne globosa (Thunb.) Kunze.

Isachne biflora (Lam.) Cordem., Fl. Réunion (1895) 115; Kunze, Rev. Gen. Pl. 2 (1891) 778, isonym. = Panicum brevifolium L.


Isachne caespitosa Backer, Teysmannia 25 (1914) 212. = Isachne beneckei Hack.


Isachne dispar Trin., Sp. Gram. 1 (1826) t. 86. = Isachne pulchella Roth.

Isachne dubia Kunth, Révis. Gram. 1 (1826) 42, nom. superfl. = Isachne disperma (Lam.) Döll.


Isachne elegans Cordem., Fl. Réunion (1895) 115, non Dalzell (1861). = Isachne venusta Veldk.


Isachne gardneri (Thwaites) Benth. in Benth. & Hook. f., Gen. Pl. 3 (1883) 1100. = Panicum gardneri Thwaites.

Isachne geniculata Griff., Not. Pl. Asiat. 3 (1851) 41. = Isachne minutula (Gaudich.) Kunth.

Isachne glaucescens (Kunth) Pittier, Bol. Técn. Minist. Agric. 1 (1937) 49 = Isachne arundinacea (Sw.) Griseb.


Isachne hackelli Lindm., Kongl. Svenska Vetenskapsakad. Handl. 34, 6 (1900) 11, t. 5. = Poidium poimorphum (J. Presl) Matthei.

Isachne heterantha Hayata, Icon. Pl. Formos. 6, Suppl. (1917) 96; Icon. Pl. Formos. 7 (1918) 56. =
Isachne pulchella Roth.


Isachne jardini (Steed.) T. Durand & Schinz, Consp. Fl. Afric. 5 (1894) 739 (‘jardini’) = Cyrtococcum chaetophorum (Roem. & Schult.) Dandy.


Isachne lamarkii Kunth, Révis. Gramin. 1 (1829) 42 = Panicum brevifolium L.


Isachne lutaria Santos, J. Wash. Acad. Sci. 33 (1943) 140. = Isachne pulchella Roth.


Isachne mayocoeensis Vanderyst, Bull. Agric. Congo Belg. 9 (1918) 248, nom. prov.; 16 (1925) 689 (‘mayokesiensis’). = Panicum trichoides Sw.

Isachne meneritana Poir. in Lam., Encycl., Suppl. 3 (1813) 185 = Isachne globosa (Thunb.) Kuntze.


Isachne milacea Roth in Roem. & Schult., Syst. Veg. 2 (1817) 476; Roth, Nov. Pl. Sp. (1821) 58, generally misapplied to I. minuta = Isachne globosa (Thunb.) Kuntze.

Isachne montana Backer, Teysmannia 25 (1914) 298. = Isachne beneckei Hack.


Isachne mortehanii Vanderyst, Bull. Agric. Congo Belg. 16 (1925) 688 (‘mortehani’). = Isachne buettneri Hack.


Isachne nilagirica Hochst. ex Benth. in Benth. & Hook. f., Gen. Pl. 3 (1883) 1100, nom. nud. = Isachne walkeri Arn. ex Steud.


Isachne pynaertii Vanderyst, Bull. Agric. Congo Belg. 16 (1925) 688. (‘pynaerti’). = Isachne buettneri Hack.


Isachne repens Keng, Sunyatsenia 1 (1933) 129. = Isachne kunthiana (Wight & Arn. ex Steud.) Nees ex Miq.

Isachne rhabdina (Steud.) Henrard, Blumea 4 (1941) 530 [or I. pangerangensis Zoll. & Moritizi var. rhabdina (Steud.) Henrard, nom. altern., both valid], Ohwi, Bull. Tokyo Sci. Mus. 18 (1947) 1, isonym. = Isachne pangerangensis Zoll. & Moritizi.


Isachne sapinii Vanderyst, Bull. Agric. Congo Belg. 16 (1925) 688 (‘sapini’). = Panicum strictissimum Afzel, ex Sw.


Isachne semitalis Ridl., Fl. Malay Penins. 5 (1925)
For Réunion there is no second opinion since Cordemoy (1895, n.v.) and for Madagascar there is only a partial treatment by Bosser (1969). The identities of the following taxa therefore need confirmation:

**Isachne cernua** Cordem., Fl. Réunion (1895) 115. – Réunion.


**Isachne longifolia** Cordem., Fl. Réunion (1895) 115. – Réunion.


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