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NOTES ON LEPTURUS (GRAMINEAE) IN MALESIA

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SUMMARY

A survey of *Lepturus* R.Br. (Gramineae) in Malesia is given. *Monerma* P. Beauv. is superfluous, and hence Monermeae an illegitimate tribal name. One new variety of *L. repens* (G. Forst.) R.Br. is described.

Key words: Gramineae, *Lepturus, Monerma*, Monermeae, Malesia.

INTRODUCTION

Lepturus R.Br. (Gramineae) is a small genus of perhaps 8 species of the shores of the Indian and Pacific Oceans. For a long time it was associated with a number of grasses with somewhat similar spikes, e.g. *Aegilops* L., *Hordeum* L., *Nardus* L., *Parapholis* C.E. Hubb., *Phalaris* L., *Rottboellia* L.f., and what now are called *Hainardia* Greuter and *Oropetium* Trin. (incl. *Lepturella* Stapf).

From general morphological, anatomical (Hansen & Potztal, 1954), and now even molecular data (Hilu & Alice, 2000) it has become evident that it is the only member (if *Ischnurus* Balf.f. is regarded as a synonym; cf. Clayton & Renvoize, 1986) of the Leptureae Holmb., close to the Chloridoideae–Cynodonteae Dumort. Hilu & Alice placed *Lepturus* as sister group to the Chloridinae J. Presl.

In a combined analysis based on morphology and leaf anatomy Van den Borre & Watson (2000) included *Lepturus* in their '*Chloris* group' next to *Ischnurus*. This affinity is supported by *Lepturopetium* Morat, which allegedly is a hybrid between *Lepturus repens* (G. Forst.) R.Br. and *Chloris barbata* Sw. However, this theory is not evident from the positions of these genera in Van den Borre & Watson's cladogram. It is also undermined by the fact that both species have a very wide distribution, while *Lepturopetium* is only known from New Caledonia, the Marianas (Rota), Marshalls (Eniwetok), and Cocos Keeling (West Island or P. Panjang).

TRIBAL NAME AND NOMENCLATURAL POSITION OF MONERMA

Beauvois (1812: 110) noted under *Lepturus* R.Br. that this name had been used for insects (*Leptura* L., 1758, *Coleoptera*, Longhorn beetles) and for that reason had to be rejected. The only taxon he included was *Rottboëllae spec.* [G.?] Forst., and in his Index (p. 177) we find *R. repens* [G.?] Forst. as the only Forster name and there referred to *Monerma*. Under that name (Index, p. 168) *M. monandra* and *M. repens* are enumerated. Under the treatment of *Monerma* (p. 116) *Rottb. repens* is cited again.

Obviously this was an intentional renaming of *Lepturus* to *Monerma*. As names under the Zoological and Botanical Codes (Art. 54.1) are completely independent *Leptura* L. has no priority over *Lepturus* R.Br. (and may this rule be maintained!).

Therefore, *Monerma* is superfluous for and homotypic with *Lepturus*. Hence the tribal name Monermeae C.E. Hubb. being derived from an illegitimate name is also illegitimate (Art. 19.5).

The genus *Monerma* in the sense of European floras is to be called *Hainardia* Greuter and the tribe to which it belongs Hainardieae Greuter.

Dumortier (1824) also knew about the botanical/zoological homonymy and proposed the tribal name Lepiureae Dumort. taken from *Lepiurus* Dumort., a minor renaming of *Lepturus* R.Br. Likewise these names are illegitimate. For the same reason Rafinesque (1819) proposed the name *Leptocercus* (fide Hitchcock, 1920). For a more detailed discussion pro and contra this, see e.g. Scholz (1995) and Ghandi (1996).

LEPTURUS

The most widespread representative is the beach grass *Lepturus repens* which ranges from the African coasts of the Indian Ocean to the Pacific. It grows preferably on coral sands and limestone rocks. Although it is distributed by the sea and one therefore would expect a continuous exchange of genetic information whereby its variability would be rather homogeneous, it is quite variable, and F. Brown (1931) and Fosberg (1955) have described a fair number of infraspecific taxa, some of which would also occur in Malesia, e.g. var. *subulatus* Fosberg (= var. γ F.Br.) and var. *occidentalis* Fosberg. Fosberg based his taxa on personal field observations and four quantitative characters, e.g. thickness of the spike, length of its joints, length of joint plus glume, and shape of the latter's apex. He concluded that several regional varieties could be segregated, though their geographic ranges are not very clear and their distinctive characters overlap in various directions.

An examination of the variability of the species along Fosberg's lines was made for Malesian material, among which were some paratypes of var. *subulatus* and var. *occidentalis*. It turned out to be impossible to recognise any distinct entities, let alone taxa, as all analyses showed a continuous pattern of variability and mix-up of Fosberg's and other characters.

However, two collections from two small islands on the W coast of New Guinea (Pam Is., Kofiau Is. (Halmaheira Sea)) were immediately conspicuous because of the exceptional pubescence of the stem, blades, and glumes in this otherwise essentially glabrous species, and are here regarded as representing an undescribed variety.

Lepturus R.Br.

Lepturus R.Br. (1810) 207; I. Hansen & Potztal (1954) 256; Fosberg (1955) 285. — *Monerma* P. Beauv. (1812) 116, 168, 177, nom. superfl. — *Lepiurus* Dumort. (1824) 140, nom. superfl. — *Leptocercus* Raf. (1819) 190, nom. superfl. — (*Lepturus* sect. *Eulepturus* Hack. (1889) 78 nom. inval.) — Type species: *Lepturus repens* (G. Forst.) R.Br.

Stoloniferous annuals or perennials. Ligule a glabrous or ciliate membrane. Blades flat or enfolded. *Inflorescence* a single, terminal spike, disarticulating into cylindrical

joints. Spikelets solitary, alternately inserted in cavities along the thickened rhachis, dorsally compressed, 1- or 2-flowered, falling at maturity with the adjacent internode. Terminal spikelet falling with the uppermost lateral spikelet. Lower glumes reduced to a rudiment except in the terminal spikelet. Upper glumes abaxial, robust, several-nerved, closely covering the spikelet except in anthesis. Rhachilla process produced. Callus of the lemma short, obtuse. Lemmas lanceolate, 3-nerved, laterals extended close to the apex. Stamens 3. x = 9.

Distribution — 8–12 species on the shores of the Indian and Pacific Oceans.

KEY TO THE TAXA

1a. Spikelets 8–22 mm long 2
b. Spikelets 3–5 mm long ..... **1. L. radicans**
2a. Culms, sheaths, blades, peduncle, and upper glumes densely pubescent. Rhachis internodes sparsely hairy ..... **2b. L. repens** var. **pubescens**
b. Culms, sheaths, blades, peduncle, rhachis internodes and upper glumes glabrous ..... **2a. L. repens** var. **repens**

1. Lepturus radicans (Steud.) A. Camus

Lepturus radicans (Steud.) A. Camus (1923) 87; Veldk. (1999) 233. — *Ophiuros radicans* Steud. (July 1854) 430. — *Monerma radicans* (Steud.) Hack. (1889) 320. — Lectotype: *Boivin 1980* (holo P; K), designated by C.E. Hubbard (1974).

Mat-forming perennial. *Culms* tough, 0.1–0.3 m long, creeping to erect. Sheaths glabrous. Ligule 0.1–0.5 mm long. Leaves 3–12.5 cm by 3–8 mm. *Spikes* 3–7 cm by c. 2 mm. Spikelets lanceolate, 3–5 mm long. Lower glumes absent; upper glumes 5–9-nerved, smooth, acuminate to caudate. Lemmas 2.5–4 mm long, (sub)glabrous. Anthers 0.6–2 mm long. Caryopsis ellipsoid, 1–1.25 mm long. 2n = 18.

Distribution — E Africa, Madagascar, Comores, Seychelles, Mauritius, introduced in Sri Lanka; Malesia: Peninsular Malaysia (Selangor: Kuala Lumpur, *Ryves s.n.* Nov. 1992 (K); JFV went in July 1998 to the roadside opposite the Concorde Hotel, where it was collected, but could not find it).

Habitat — Sands, grassland near the sea, roadsides, lawns, preferring some shade, up to 500 m altitude in Sri Lanka.

Uses — Said to make a good lawn grass in shaded areas.

2. Lepturus repens (G. Forst.) R.Br.

Lepturus repens (G. Forst.) R.Br. (1810) 207. — *Rottboellia repens* G. Forst. (1786) 9. — *Monerma repens* (G. Forst.) P. Beauv. (1812) 117, 168, 177. — Lectotype: *Forster drawing 20, engraving 14* (holo BM), "Teoutea" (= Takaroa), designated by F.R. Fosberg, in sched. (see note 1).

Lepturus aciculatus Steud. (in Zoll. (June 1854) 57, nomen); (July 1854) 357. — Type: *Zollinger 1083* (holo P; perhaps in A, B, BM, BO, G, L, LE, W).

[*Lepturus repens* R.Br. var. γ F.Br. (1931) 90. — Voucher ('type'): *E.H. Quayle 442* (BISH)]. — *Lepturus repens* R.Br. var. *subulatus* Fosberg (1955) 290. — Type: *Fosberg 34173* (holo US).

Lepturus repens R.Br. var. *occidentalis* Fosberg (1955) 291. — Type: *Backer 31067* (holo US; BO, L, U).

a. var. **repens**

Mat-forming glabrous perennial. *Culms* tough, 0.2–0.4 m long, creeping to erect. Ligule 0.3–0.5 mm long. Leaves 5–20 cm by 3–8 mm. *Spikes* 5–12 cm by 1.2–2 mm. Spikelets 8–22 mm long. Rudiment of lower glumes triangular, 0.3–0.5 mm long; upper glumes 7–11-nerved, scabrous, acuminate to long-caudate. Lemmas 4–5.1 mm long, (sub)glabrous, sometimes awn-tipped. Anthers 1.5–2 mm long. Caryopsis c. 2 mm long. 2n = 42, 54.

Distribution — E Africa, Mascarene Is., Seychelles, Sri Lanka to Japan, Australia (N Territory, Queensland), Polynesia, Hawai'i; Malesia: widespread in suitable places.

Habitat — Mat-forming on sandy and rocky seashores. Preferably on coral sands. Also found along roads and in savannas (?). Usually at about sea-level, in Flores once at 1000 m altitude (*Jaag 1810*, L).

Uses — Efficient sand-binder. Not used for fodder because of its harshness and inferior yield.

Vernacular names — Bunch grass, Pacific Island thintail.

Notes — 1. The lectotypification is after a manuscript by the late Dr. F.R. Fosberg kindly communicated by Dr. D.H. Nicolson (US). Fosberg wrote: "The several fragments of Forster material available are either sterile or have subulate glumes (= *Lepturus repens* var. *subulatus* Fosberg). Only the drawing in BM has the acute glumes of my var. *repens* and is here chosen as the lectotype to maintain the species name in the sense of its awnless aspect". Fosberg noted that syntypes in BM, K, P, S, UPS, and W have the awns of var. *subulatus*, while those in FR, GOET, and UPS are sterile.

2. A collection of this species by R. Brown from Kupang, Timor, was distributed under the name *L. filiformis*. This seems to be a herbarium name and was never published by Brown. *Lepturus filiformis* (Roth) Trin. (= *Parapholis filiformis* (Roth) C.E. Hubb.) is a quite different Eurasian species.

b. var. **pubescens** Nowack, *var. nov.*

> Planta caespitosa stolonifera culmis ca. 0.3 m longis. Differt a varietate typica culmis vaginis foliis pedunculis et glumis dense pubescentibus. Spica ca. 10 cm longa 1.5 mm lata internodiis 5–7 mm longis paene glabris. Glumae superiores acuminatae 12–15 mm longae. — Typus: *A. van Leeuwen PAM-3* (holo L).

Culms c. 0.3 m long; culms, sheaths, blades, peduncles, and glumes densely pubescent. Spikes c. 10 cm by 1.5 mm; internodes 5–7 mm long, sparsely hairy. Upper glumes acuminate, 12–15 mm long.

Distribution — New Guinea, Halmaheira Sea, Pam Is., Kofiau Is.

Habitat — Sandy beaches.

Additional specimen seen:
A. van Leeuwen KOF-8 (L), Halmaheira Sea, Kofiau Is.

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