

STEENISIOBLECHNUM, A NEW FERN GENUS FROM QUEENSLAND

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SUMMARY

The genus *Steenisiolechnum* Hennipman is created to accommodate *Leptochilus acuminatus* C.T. White & Goy, an endemic, acrostichoid, blechnoid fern from Queensland.

INTRODUCTION

The acrostichoid fern originally described as *Leptochilus acuminatus* C.T. White & Goy (1938) was earlier recognized (Hennipman, 1976) as a representative of the Blechnaceae, and accordingly transferred to *Pteridoblechnum*. The two species constituting the latter genus until now are both endemic to Queensland. They could be studied in the field following the XIII International Botanical Congress, Sydney, 1981. As a result as yet unknown characteristics of the rhizome and the spore structure of *Leptochilus acuminatus* became available. The character states of the spores of this fern support its unique morphology as already indicated earlier. Therefore, this taxon is given generic recognition.

The cooperation of Mr. Bruce Andrews who guided the fern trip in Queensland, and the cooperation of the staff at Atherton (QRS, Director Dr. B. Hyland) is gratefully acknowledged. Mrs. G.A. van Uffelen kindly produced the S.E.M.-micrographs at the Rijksherbarium, Leiden.

STEENISIOBLECHNUM Hennipman, *gen. nov.*

A genere Pteridoblechno differt rhizomate brevirepentis, frondibus dense caespitosis, lamina pinnata segmento terminali vulgo triangulari lobis paucis interdum pinnae conformi, bulbillis axillaribus in axillis pinnarum supremarum sitis, sporis fuscus pariete laevi tenui perisporio bene evoluto exosporio appresso.

Differing from *Pteridoblechnum* by a short-creeping rhizome, tufted fronds, pinnate lamina, with a terminal segment which is usually triangular and few-lobed, sometimes conform to the pinnae, the presence of bulbils in the axils of the uppermost pinnae; the spores with a thin exospore and a well-developed brown perispore.

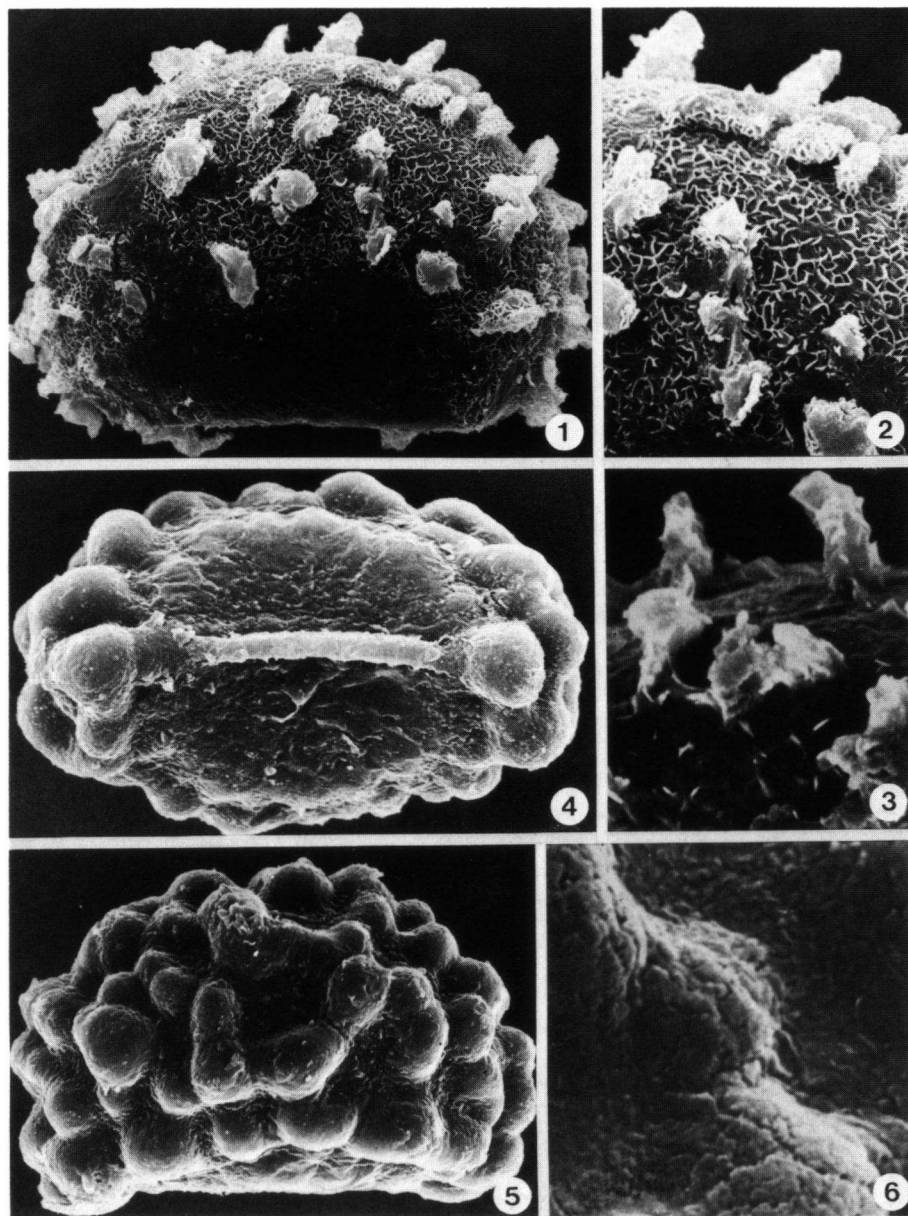


Plate 1. S.E.M.-micrographs of spores. — 1–3. *Steenisioblechnum acuminatum* (C. T. White & Goy) Hennipman. 1. lateral view, $\times 1500$; 2 & 3. detail of outer surface ornamentation of different spores, $\times 2500$. — 4–6. *Pteridoblechnum neglectum* (F.M. Bailey) Hennipman. 4. proximal vies, $\times 1500$; 5. lateral view, $\times 1500$; 6. detail of outer surface ornamentation, $\times 5000$.

Steenisiolechnum acuminatum (C.T. White & Goy) Hennipman, *comb. nov.* — Plate 1: 1–3.

Leptochilus acuminatus C.T. White & Goy, *Vict. Nat.* 54 (1938) 150, pl. 16. — *Pteridoblechnum acuminatum* Hennipman, *Proc. R. Soc. Queensl.* 87 (1976) 95, f. 1–5; Jones & Clemesha, *Austr. Ferns*, ed. 2 (1980) 192. — *Lectotype*: C.T. White 10652 (BRI; iso BM, GH, K, SING), Queensland, Mt Spurgeon.

Rhizome in cross-section \pm round, with a conspicuous brownish sclerenchyma sheath which is continuous with that of the petioles as well as with the centrally situated sclerenchyma core; parenchymatous ground tissue with few well-developed additional blackish sclerenchyma strands situated closely to the 3–6 radially arranged vascular bundles. Petioles usually with 4 vascular bundles of which the two anterior ones are largest; ground tissue scattered with many variously-sized blackish sclerenchyma strands.

Spores monolete bilateral, planoconvex, in polar view ellipsoidal, brown, (un-acetolysed) \pm 25–35 \times 40–50 μm , laesura \pm 30 μm ; exospore smooth, 1–1.5 μm thick, perispore smooth with irregularly placed and shaped \pm spinous projections, superimposed ultrastructure of perispore \pm smooth or densely set with minute \pm patent, plate- or rod-like excrescences; for details see plate 1: 1–3.

For the description of other parts see C.T. White & Goy (1938) and Hennipman (1976).

Distribution. Northeastern Queensland.

Specimens additionally studied. *Dockrill 1141, 1370, Gray 1748* (all QRS), *Hennipman 6480* (L, QRS, U): State Forest Reserve 143, North Mary Logging Area, 16°30' S, 145°15' E; *Flecker s.n.*, 1935. Platypus Ck (QRS, syntype); *Hyland 10645*, T. R. 165, Alexandra Logging Area, 16°04' S, 145°20' E (QRS).

Habitat. A terrestrial rainforest fern; reported from 600 to 1150 m altitude.

Etymology. This genus is named after Prof. Dr. C.G.G.J. van Steenis and Mrs. M.J. van Steenis-Kruseman in view of their scientific work and their creation of the 'Flora Malesiana' in particular.

DISCUSSION

Rhizome anatomy — The rhizome anatomy does not differ essentially from that found in e.g. *Pteridoblechnum neglectum* (F.M. Bailey) Hennipman, *Doodia aspera* R. Br., and *Blechnum* species, e.g. *B. fraseri* (Cunn.) Luerssen. Strikingly developed sclerenchyma strands are absent from the ground tissue of *Woodwardia virginica* (L.) J.E. Smith, *Lorinseria areolata* (L.) Presl as well as of *Blechnum* species.

Spores — The spores of *Steenisiolechnum* are markedly different from those of *Pteridoblechnum neglectum* (plate 1: 4–6). The latter being light yellowish, thick-walled, with the lateral and distal part coarsely verrucate to sinuate, the proximal part \pm smooth, perispore inconspicuous. The spores of *Pteridoblechnum neglectum* are similar to those found in *Blechnum fraseri* (Cunn.) Luerssen which are, however, covered with a perispore which consists of plate- and rod-like excrescences of a type

as also reported by Tryon & Tryon (Ferns and allied plants; Springer, 1981) for *Woodwardia*. Superficially the spores of *Steenisoblechnum* do remind of the S.E.M.-micrographs as obtained from *Stenochlaena palustris* (Burman) Beddome which are also provided with spine- or bacula-like projections covered by a thin wrinkled perispore. However, the origin of the projections in *Stenochlaena* is exosporial, whereas those of *Steenisoblechnum* are seemingly perisporial in nature. The spore morphology in relation to phylogeny of the Blechnaceae (incl. *Stenochlaena*) is discussed by Devi & Nayar (IV Int. Palyn. Conf. 1, 1978, 167:173).