

ADDITIONS TO THE FERN FLORA OF JAVA

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SUMMARY

Cyathea jacobsii (Cyatheaceae), *Pneumatopteris auctipinna* and *Pseudophegopteris tenggerensis* (Thelypteridaceae) are described as new species. Of these, only the last-named species is confined to Java, as at present known.

Cyathea jacobsii Holtt., sp. nov.

Cyathea arachnoidea (non Hook.) Backer & Posth., *Varenfl. Java*: 25. 1939.
C. tripinnata Copel. sensu Holtt. in *Fl. Males*, Ser. II, 1: 140. 1963, p.p.

Species nova subg. *Sphaeropteridis*, sect. *Sphaeropteridis*, subsect. *Fournierae*, *C. tripinnata* Copel. affinis, stipitibus copiose aculeatis (aculeis usque 5 mm longis), squamulis sororum paucis, parvis, soros non tegentibus distincta.

TYPUS: *M. Jacobs 8113*, S. Sumatra, Prov. Lampung, G. Tanggamus, 1200—1300 m (L; dupl. BO, K).

When preparing my account of *Cyathea* for *Flora Malesiana*, I saw a few species from West Java which certainly belonged to the very distinct subsection *Fourniera*. They were so near *C. tripinnata* that I included them, with a little doubt, in that species. However, the more complete new material collected by Dr. Jacobs in the extreme south of Sumatra show that the species is distinct in its very spiny petioles and in the few small soral scales which do not form a pseudo-indusium. The subsection *Fourniera* has its centre of distribution in New Guinea. The westernmost species are *C. tripinnata* (Philippines, Moluccas, Sabah and Pulau Tioman) and *C. jacobsii* (S. Sumatra and W. Java).

Dr. R. M. Tryon (in *Contrib. Gray Herb.* no. 200: 23. 1970) has recognized *Sphaeropteris* as a distinct genus, and has transferred *C. tripinnata* to it, without comment on the status of *Fourniera*.

Pneumatopteris auctipinna Holtt., sp. nov.

Aspidium truncatum Chr. in *Ann. Jard.bot. Buitenz.* 15: 133. 1898.

Caudex brevis, erectus. Stipes ca 20 cm longus, pallidus, glabrescens.

Frons ca 150 cm longa, basin versus subabrupte angustata; pinnae 35-jugatae, inferiores oppositae; pinnae infimae 15 mm longae, sequentes 8 pares sensim longiores earum superiores $2\frac{1}{2}$ —4 cm longae, omnes basi acroscopica auriculatae; pinnae intermediae 2—3 pares et pinnae maximae inferiores omnes basi auriculatae; pinnae suprabasales ca 18×2 cm basi truncatae (non auriculatae), apice anguste acuminatae, margine $\frac{1}{3}$ — $\frac{2}{5}$ versus costam lobatae, costulis 4— $4\frac{1}{2}$ mm inter se distantibus, lobis subtruncatis, margine leviter dentatis; venae 8—9 jugatae, utrinque prominentes, infimis anastomosantibus, paribus 2— $2\frac{1}{2}$ sequentibus membranam pellucidam elongatam tegetibus (venis in auriculis pinnarum inferiorum saepe furcatis, ut *Haplodictyum anastomosantibus*); rhachis costaeque subtus dense breviter pilosae, pagina laminae \pm pustulosa, pilis brevibus paucis praedita; costa supra antrorse hirsuta, pagina superiore cetera glabra. Sori inframediales; indusia parva, breviter pilosa; sporangia pilis brevibus capitatis prope annulum ornata.

TYPUS: *P. & F. Sarasin 119*, N. Celebes, Tomohon (BAS).

CELEBES. *P. & F. Sarasin 118, 124, 125*, Tomohon (BAS). *De Vries & Teysmann 231*, Menado (K). *De la Sarvinière 207*, Menado (P, G). *Posthumus 2274*, Menado, afd. Donggala, 900 m (BO, L). *Alston 15680*, Tomohon 700 m (BM); *15903*, Sapulan Mts (BM). *T.G. Walker 11734, 11944, 11988, 11989*, W. Celebes (BM).

JAVA. *Posthumus 532, 3905*, Pasuruan (BO). *Donk 153*, Ardjuno-Welirang Mts 1700—2000 m (BO). *Van Heurn s.n.* July 1937, Mt Kawi 1450 m (BO). *Mousset Jar.* 1910, Wonosari 1100 m (no. 215 in C. Müller Herb. Jav., K, Fi).

FLORES. *Posthumus 3080*, 1400 m (BO).

AMBON. *Sa-Anam 30*, P. Poka (BO).

BURU. *Stresemann 433*, G. Fogha 1400 m (L).

This species is strikingly distinct in the form of the base of the frond. The species most resembling it in its auricled lower pinnae is *Cyclosorus ecallosus* Holtt. from Malaya (this will be transferred to *Pneumatopteris* in a monograph of the genus), but in *C. ecallosus* only 2—3 pairs of basal pinnae are reduced. I saw it abundantly near streams in half-cleared forest at 1500 m alt. at Cameron Highlands in 1969, very constant in its character, not known from any other locality. There is also an allied species in New Guinea.

Pseudophegopteris tenggerensis Holtt., *sp. nov.*

Rhachis castanea, nitens, glabra; pinnae maximae ca 33 cm longae, subpinnatae, lobis lobulatis, obliquis, omnibus late adnatis et ala costali angustissima junctis, costulis earum usque 15 mm inter se distantibus; lobus infimus basicopicus usque 7 cm longus, 1.6 cm latus, lobo sequenti 5.5—6 cm longo; lobi basicopici dimidii basalis pinnae quam lobi acroscopici longiores; costae pinnarum costulaeque loborum subtus pilis perbrevis capitatis copiose velutinae, pili aciculares longiores pauci etiam adsunt; costae costulaeque supra pilis acicularibus brunneis patentibus vestitae; sori plerique globosi, inferiores interdum leviter ellipsoidei; sporangia non setifera.

TYPUS: *Buysmann 40*, Tengger Mts, near Nongko, 1200 m, 1906 (U) Herb. Divers. Bot. Insulae Javae 147, 295 (U).

This species most nearly resembles *P. henriquesii* (Bak.) Holtt., only known from the island of San Thome in the Gulf of Guinea, West Africa (see Blumea 17:15, 1969), with which it agrees in frond-form and in the capitate hairs on lower surface of axes of pinnae and of their lobes; *P. henriquesii* differs in the presence of such hairs on the lamina of both surfaces. The caudex of both species is unknown, and the base of the frond in the type specimen of *P. tenggerensis* is incomplete (another specimen shows lowest pinnae 24 cm long, but there might have been another still shorter). In frond-form the nearest Malesian species is *P. cykocarpa* Holtt. from New Guinea, but this has only acicular hairs, which are present also on the sporangia.

It is possible that the sterile specimens collected by Mousset in East Java, cited by me under *P. paludosa* (l.c., p. 23) also belong to *P. tenggerensis*, but the former species differs in shape of pinnae and in pubescence. *P. paludosa* is certainly very widely distributed, from Malaya to the Philippines and New Guinea. In 1969 I found it to be abundant by streams at about 1500 m alt. at Cameron Highlands, Malaya, where the forest had been cleared; the plants had stout erect caudices. Several species in this genus however appear to be of very restricted distribution, and *P. tenggerensis* is probably one of these. More information is needed about this genus in Malesia.