

**PSEUDOPHEGOPTERIS (THELYPTERIDACEAE) IN FIJI,  
A NEW RECORD AND A NEW SPECIES**

K. U. KRAMER & E. ZOGG

Institut für Systematische Botanik der Universität Zürich, Switzerland

SUMMARY

*Pseudophegopteris fijiensis* is a newly described fern species from the island of Taveuni, Fiji; it also represents a new generic record for Fiji. Its possible relationships are discussed.

In 1985 the second author had the opportunity to collect ferns in Fiji, together with Miss H. Gassner. The collection is deposited in the herbarium of the University of Zürich (Z) (see Zogg, 1987). When identifying his collection he came across a specimen that evidently belonged to the genus *Pseudophegopteris* (Thelypteridaceae), not previously known from Fiji. Closer study indicated that the species was undescribed, and in the following it is described as new.

***Pseudophegopteris fijiensis* Kramer & Zogg, spec. nov. – Fig. 1.**

Rhizoma erectum, squamis pallide lurido-brunneis, integris vestitum. Petiolus rufo-brunneus; rachis glandacea ad rufo-brunnea, sulco adaxiali strigoso. Lamina anguste ovato-oblonga, 30–40 × 6–11 cm, ad basim leviter, ad apicem sensim et forte angustata, chartacea, pinnata, pinnis bipinnatifidis, oblongis, sessilibus, breviter acuminatis, majoribus circ. 11 pro latere. Costa adaxialiter convexa, strigosa, abaxialiter pilis albis, unicellularibus, acutissimis, sparsissimis. Segmenta majora 13–16 mm longa, 4 mm lata supra basim dilatata adnataque; costulae percurrentes, adaxialiter sparse strigosae; facies segmentorum nec pubescens nec glandulifera; margo lobatus fere ad medium, lobis circ. 6, (sub)rotundatis, leviter ciliatis. Venae abaxialiter prominulae, ramis brevibus usque ad 4, marginem attingentibus, abaxialiter glabrae. Sori orbiculares, dorsales ad ramos venarum, exindusiati, circ. 1 mm diam.; sporangia pedicellis capsulisque glabris.

*Rhizome* erect, c. 7 mm ø, 3 cm tall in the type, pale in section (according to collectors); scales elongate-triangular, long-acuminate, c. 7 × 2 mm, light fawn-coloured, entire. *Leaves* tufted; petiole 10–20 cm long, dull, medium to reddish brown, ± deciduously scaly but persistently so at base; no scales present on other leaf axes. *Rachis* yellowish brown to reddish brown, in its adaxial groove strigose with hyaline, unicellular, acicular hairs of c. 0.6 mm, otherwise glabrous. *Lamina* narrowly ovate-oblong, 30–40 cm long, 6–11 cm wide, widest at or somewhat below the middle, pinnate + bipinnatifid, catadromous in dissection and venation;



Fig. 1. *Pseudophegopteris fijiensis* Kramer & Zogg. One leaf,  $\times 0.5$  (photograph of the type specimen, Zogg & Gassner 9075).

texture firm, chartaceous; colour dark yellowish green and lustrous above when living, greenish brown when dry. *Pinnae* up to c. 11 major pairs, ascending, not contiguous, subopposite in pairs close to the pinnatifid leaf-apex, sessile, oblong, shortly acuminate, the largest 11 × 3 cm; two pairs of basal pinnae slightly shortened. Major pinnae deeply pinnatifid (very nearly pinnate at base) + pinnatilobate, symmetric, with c. 12 major segments to a side; basal segments not reduced. *Costa* adaxially convex, strigose with hairs like those of the rachis, abaxially prominulous, like the costules and veins bearing very scattered, spreading, whitish, pointed, unicellular hairs of c. 0.5 mm. *Segments* slightly ascending, narrowly oblong, subacute, adnate by their broadened bases, wing-connected by their decurrent bases, the wing c. 0.5 mm wide in the pinna bases; segments gradually reduced from about the middle of the pinna upward (or in the lowermost pinnae from their base), gradually more broadly connected and confluent. Larger segments 13–16 mm long, 4 mm wide above the broadened base; costules percurrent, adaxially thinly strigose with pale, spreading, acicular hairs c. 0.3 mm long; surface of segments neither hairy nor glandular. *Margin* lobed to nearly the middle, with c. 6 broad, rounded to subacute lobes. *Veins* abaxially prominulous, c. 8 in the major segments, bearing a few (up to 4) short vein-branches which reach the margin and may be forked in the larger, basal lobes; all veins abaxially glabrous, adaxially bearing a few pale, acicular hairs to 0.6 mm long, similar hairs borne here and there on the margin. *Sori* dorsal on the vein branches, two together in the larger segments, otherwise single, exindusiate, orbicular, up to 1 mm  $\phi$  when mature, the sporangia then concealing the vein-ends. *Sporangia* short-stalked, stalk and capsule hairless; annulus with c. 18 thickened cells. *Spores* bean-shaped, monolete, pale brown, translucent, smooth (probably immature), c. 45 × 24  $\mu$ m.

*Type* (and only known collection): *E. Zogg & H. Gassner 9075* (Z, holo; K, iso); Sept. 1985; Fiji Islands, Taveuni, Des Voeux Peak, 179° 59' E, 15° 50' S. Rainforest of broad-leaved trees with many epiphytes and many ferns in undergrowth, 1100 m; solitary.

*Pseudophegopteris* is a fern genus of 20 species\* (Holttum, 1969), distributed exclusively in the Old World, from Kashmir to Japan and New Guinea, with a few species in St. Helena, Africa, Madagascar and the Mascarenes, and one outlying, endemic species each in Samoa and Hawaii (Holttum, l.c.). The area contained a gap in the Fiji Islands where the genus was not known to occur (Brownlie, 1977). That gap is now closed.

In habit *P. fijiensis* is rather like *P. pyrhorhachis* (Kunze) Ching but diverges widely in its much scarcer indumentum of shorter hairs. Geographically closest is the Samoan *P. persimilis* (Baker) Holttum, but this is a much larger fern with leaves of thinner texture and with paler axes; in indumentum it is, however, not unlike *P. fijiensis* and it may be its closest relative. In Holttum's key (l.c.) the new species runs to near *P. sumatrana* Holttum which is, however, quite distinct in its abaxially glabrous costae and costules, more deeply incised pinnules, much larger size, etc.

\* We are inclined to unite *Pseudophegopteris aubertii* (Desv.) Holttum with *P. cruciata* (Willd.) Holttum, which would reduce the number of species to 19, excluding the present one.

## ACKNOWLEDGEMENTS

The authors are much indebted to Professor R.E. Holtum, Kew, for kindly examining our material and confirming our opinion that it represents an undescribed species; to Dr. W.A. Sledge, Leeds, for providing us with a specimen of the very rare *Pseudophegopteris persimilis*; and to Mr. A. Zuppiger, Zürich, for preparing the photograph. The second author would like to thank Mr. Saula Vodonaivalu for field assistance.

## REFERENCES

- BROWNLIE, G. 1977. The pteridophyte flora of Fiji. Vaduz.  
HOLTUM, R.E. 1970. Studies in the family Thelypteridaceae. The genera *Phegopteris*, *Pseudophegopteris*, and *Macrothelypteris*. *Blumea* 17: 5–32.  
ZOGG, E. 1987. Der Reichtum an Farn-Endemiten auf den Fiji-Inseln. *Farnblätter* 17: 25–35.