Studies on Asian Ferns 3

Kunio IWATSUKI

Botanic Gardens, University of Tokyo, 3-7-1, Hakusan, Bunkyo-ku, Tokyo, 113-0001 JAPAN
E-mail: iwatsuki@spa.nifty.com

(Accepted January 29, 2016)

A new species of *Selliguea* (*Polypodiaceae*), *Selliguea nepalensis*, is described from Nepal. The new species is carefully described and its generic position is resolved by its characteristic features. Although some phenetic features suggest a resemblance of this new species to *Goniophlebium amoenum*, its actual position is within the genus *Selliguea*.

(Continued from Acta Phytotax. Geobot. 30: 43, 1979)

**Key words**: Frond construction, *Goniophlebium amoenum*, Nepal, rhizome scale, *Selliguea ebenipes*, *Selliguea nepalensis* sp. nov., venation.

(8) **A new species of *Selliguea* from Nepal**

Following the University of Tokyo Himalayan botanical trips sent during 1960s and early 1980s, the Society of Himalayan Botany Tokyo sent a botanical survey team to Nepal nearly every year during the mid-1980s and 2005 and collected a vast number of botanical specimens. Many botanical reports were contributed based on these field trips and their collections.

Ferns were studied and collected in this continuous research project primarily by Hutoshi Miyamoto and the others, although the collector names on the labels of the collections include all the botanists participating in the trips. A vast number of fern specimens were accumulated unidentified, and just recently I was requested to identify them to follow up on my previous works on the fern collections from Nepal Himalaya made by the University of Tokyo botanical surveys (Iwatsuki 1975, 1988).

In the present part of this series of papers, a distinct new species found in the course of this identification work is described.

The Nepalese fern specimens were offered me for identification by Dr. Hiroshi Ikeda and the Society of Himalayan Botany Tokyo, and Dr. Hutoshi Miyamoto gave me valuable notes on the habitat of this species; the picture of the holotype specimen was scanned by Dr. Tetsuo Ohi-Toma and TI staff members. In observing the variation of *Goniophlebium amoenum* and *Selliguea ebenipes*, herbarium specimens were examined in TI, and in brief visits to KYO and PE, courtesy of their directors and curators. Dr. Chris Fraser-Jenkins gave me valuable comments during this study. I thank for all of them for their kind assistance.

*Selliguea nepalensis* K. Iwats., sp. nov. [Fig. 1]


Differs from *Goniophlebium amoenum*
Fig. 1. Holotype of *Selliguea nepalensis* K. Iwats. (M. Minaki & al. 90-20927, Ti).
in the following characters (those of \textit{G. amoenum} in parentheses): rhizome scales ovate to oblong ovate, acute at apex, 4–6 mm long, 1.5 mm broad, black with dark brown ferruginous margins, adpressed and imbricated (monocolorously brown, clathrate, linear lanceolate, hair-pointed, patent); stipes and lower part of rachis pale brownish throughout, glabrous or very sparsely minutely scaly (stramineous with some castaneous coloration, minutely scaly on adaxial surface); laminae papyraceous (herbaceous); venation hardly visible, with a few rows of reticulation at the outside of the costal areoles, each of which with a sorus (more or less distinct, usually free or at most one row of areoles at outside of costal areoles); sori subcostal (medial to subcostal). Differs from \textit{Selliguea ebenipes} in (those of \textit{S. ebenipes} in parentheses): rhizome scales as described above (ovate-lanceolate, fixed just above the round base, gradually narrowing towards a long-attenuate apex, 2.5–7 mm long, 1–1.5 mm broad at the broadest attached portion, margin dense with long hairs of up to 1 mm in length, entire, soft herbaceous, shining black on the central portion with broad, brown to dark-brown marginal zone); laminae up to 60 cm long with 20–25 pairs of lateral lobes (laminae up to 45 cm long with up to 17 pairs of lateral lobes); rachis wings about 1 mm broad (2–3 mm broad).

Full description: Epiphytic plants. Rhizome long creeping, 5–7 mm in diameter, the surface with a whitish bloom and covered densely with scales; rhizome scales ovate-oblong to linear subtriangular, fixed a little above the round base, gradually narrowing towards the attenuate apex, up to 12 mm long, 4 mm broad at the broadest attached portion, margin entire, sparsely covered with short hairs, herbaceous or rather stiff, shining deep black in central portion with broad brown marginal zone, very densely adpressed on rhizome with a shiny black appearance. Stipes pale brownish throughout, not dark at base, 20–25 cm long, glabrous, scaly at very base with the scales like those on the rhizome; laminae pinnatisect, oblong-lanceolate in outline, the lowest lobes the longest or slightly shorter than the next above, gradually narrowing towards acute apex, papyraceous, 50–60 cm long, 25–30 cm wide; rachis pale brownish throughout, narrowly winged, glabrous or very sparsely covered with minute scales on the underside; wings of rachis narrow, at most 1 mm broad, entire, plane; lateral lobes all adnate at base, nearly straight or a little curved upwards, broadest at base and gradually narrowing towards the caudate apex, in 20–25 nearly opposite pairs, the longest lower ones up to 14 cm long, 1.8 cm broad at the broadest basal portion, one shallow incision 0.3 mm deep at margin between the adjacent main veins, very narrowly cartilaginous at margin; upper pinnae gradually shorter upwardly; the apical lobe distinct, narrowly triangular, crenate to shallowly lobed at margin, about 6–10 cm long, 1.5 cm broad at the broadest basal portion; costae more or less raised beneath, glabrous underneath, raised on adaxial surface, distinctly hairy; laminar surface glabrous underneath, sparsely hairy near costae on adaxial surface. Veneration not very distinct, reticulate in a few rows of areoles outside larger costal areoles, included veinlets simple or forked, usually glabrous on both surfaces. Sori subcostal, one between main veins, up to 2.5 mm in diameter, arranged in one row at each side of the costae.

Notes: The present new species is seemingly similar to species of \textit{Goniophlebium}, or \textit{Polypodiodes}, in general habit and frond construction, especially to \textit{G. amoenum}, though it actually belongs to \textit{Selliguea}, or \textit{Pichisermollodes}.

The genus \textit{Goniophlebium} is placed far from \textit{Selliguea} in the family \textit{Polypodiaceae}, and they are usually distinguished by the following key characteristics:

\begin{itemize}
\item \textit{Goniophlebium}: rhizome scales attenuate and usually clathrate; laminae soft papyraceous to herbaceous; veins more or less distinct, anastomosing to form costal areoles, each with
one free included veinlets, and often forming smaller areoles outside them.

*Selliguea*: rhizome scales lanceolate, attenuate to setaceous; laminae papyraceous to coriaceous; veins forming several pairs of areoles between costae and margin of lobes with recurrent included veinlets.

The present new species resembles at a glance some species of *Goniophlebium*, though it is distinct from the species of this genus in the features noted in the above diagnosis. As noted in the full description, the rhizome scales are not clathrate and are herbaceous or rather stiff in texture. The venation is reticulate to form a few rows of areoles outside larger costal areoles, and included veinlets are simple or forked but hardly recurrent.

The rhizome scales of this new species are distinct in this rather stiff texture and coloration, with a shining black central portion with brown margin. In this feature, *Selliguea nepalensis* resembles *S. ebenipes*, though the rhizome scales of the latter are: ovate-lanceolate, fixed just above round base, gradually narrowing towards the long-attenuate apex, 2.5–7 mm long, 1–1.5 mm broad at the broadest attached portion, margin dense with long hairs of up to 1 mm in length, entire, soft herbaceous, shining black in central portion with broad, brown to dark brown marginal zone. They are very densely adpressed on rhizome, commixed densely with long marginal hairs having an appearance of black scales covered with a pale brown carpet. In the older rhizomes, the marginal hairs of scales are often caduceus, and the rhizome looks purely black directly showing black central portion without a carpet of woven hairs.

In *Selliguea*, there are simple-fronded species, trilobed or palmate species as well as those with lateral lobes. One aberrant species of *Selliguea, S. albidosquamata*, has more than 20 pairs of lateral pinnae, though this species is fully pinnate with many distinctly stalked pinnae and is quite different from the species now under consideration.

One of the species of *Selliguea* with many lateral lobes is *S. ebenipes*, and one specimen with a larger frond, for instance Forrest 13497 from Ghi Shan east of Tali Lake (PE), has up to 17 pairs of lateral lobes of 4–5 cm in breadth. In the present new species, the rhizome scales have a morphology similar to those of *S. ebenipes*, though the general habit of the plants is still different from this latter species. In *S. nepalensis*, the length of laminae measures 60 cm and the texture of lateral lobes is papyraceous. The frond has many lateral lobes, counting 20–25 pairs, and this frond construction is rather exceptional in *Selliguea*. Still, I would place this new species under *Selliguea* observing all the key characters distinguishing the genera under consideration.

The scales on the lower surface of the rachis are distinct in *Selliguea ebenipes*, brownish and sometimes with a blackish central portion. A similar feature is observed in *Goniophlebium amoenum*, though the rachis scales of the latter species are more or less clathrate and different from those of *S. ebenipes*. In the present new species the rachis is glabrous or with very sparse brown scales on the lower surface.

Pinna-margin is with shallow convex in *S. ebenipes* every 4–6 mm, and dully serrate in this new species, more deeply convex. The base of lateral lobes are decurrent to the rachis, and the rachis wing is usually more than 3 mm broad in *S. ebenipes* but at most 1 mm in this new species.

There are collections of *Goniophlebium amoenum* similar to *Selliguea ebenipes* in the general appearance, including the rachis scales, lateral pinnae, and wings on rachis, though the scale characters are quite distinct between these two species.

**References**


岩槻邦男：アジア産シダ植物の研究 3

ヒマラヤ研究会が継続してネパールで調査をした 1980 年代中葉から 2005 年頃までに採集した標本のうち、シダはほとんどが未整理で積み上げられており、最近見せてもらう機会ができ、少しずつ仮同定を進めていく。ネパールで Fraser-Jenkins 氏のシダの研究が進んでおり（Fraser-Jenkins et al. 2015）、国際的な協力も得た中国植物誌も英文版まで完成した時期でもあり（Zhang et al. 2013）、最新の情報を含めた検定ができている。

本報はそのうちの 1 新種 Selliguae nepalensis についての速報である。これは広義のミツデウラボシ属の 1 員であるが、見かけ上は Goniophlebium 属の G. amoenum（トモアオネカズラという和名がある）に似たところがある。新種の根茎の鱗片の構造は Selliguae ebenipes に似たところもあり、葉面の構成の差など、この種との差ははっきりしているものの、近縁であると考えられる。

この仲間の学名は人によってずいぶん多様に適用される。ミツデウラボソ属は最近まで Crypsinus が属名とされてきたが、命名上の問題で、これが使えず、属名は Selligiae とする。細分して、Pichisermollodes を属名とする考えもある。また、G. amoenum の属名についても、Goniophlebium は広義の Polypodium 属に含められることもあり、またさらに細分して Polypodiodes 属という学名にあてる考えもある。

（東京大学大学院理学系研究科附属植物園）