

Shunsuke SERIZAWA*: **Taxonomical notes**
on Asian ferns (5)**

芹沢俊介*: アジア産シダ植物考察 (5)**

18. In the course of the preparation of "Pteridophytes of the Ryukyu Islands (1)" which will be published in Science Reports of the Takao Museum of Natural History no. 7, I found the necessity of making two new names, *Nesopteris thysanostoma* var. *blepharistoma* and *Stegnogramma wilfordii*. Before the publication of this floristic paper, I would like to propose these two names with some taxonomic discussions.

Nesopteris thysanostoma (Makino) Copel. var. **blepharistoma** (Copel.) Serizawa, stat. nov.—*Trichomanes blepharistomum* Copel. Phil. Journ. Sci. 51: 225, pl. 41 (1933).—*N. blepharistoma* Tagawa, Journ. Jap. Bot. 26: 186 (1951).

Distr. The Philippines and the Ryukyus (Isl. Ishigaki and Isl. Iriomote). New to the Ryukyus.

The *Nesopteris* species in the Ryukyu Islands and the adjacent regions have been variously treated. Tagawa (1938, 1951) considered that *N. thysanostoma*, *N. blepharistoma* and *N. pseudoblepharistoma* are all distinct from each other; Copeland (1938) treated *Trichomanes blepharistomum* to be conspecific with *N. thysanostoma*; Iwatsuki (1958) united *N. pseudoblepharistoma* with *N. blepharistoma* and treated *N. thysanostoma* to be a separate species; Hatusima (1971) referred all plants in the Ryukyu Islands to one species, *N. thysanostoma*.

N. thysanostoma and *N. pseudoblepharistoma* are abundant in the lowlands of Isl. Iriomote. They are frequently growing side by side at the same place, and usually easily separated at such sympatric habitats. *N. thysanostoma* is characterized by the involucre which are 1-1.5 mm long, distinctly winged, not bent downwards, and concave and with deciduous clavate hairs

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** Continued from Journ. Jap. Bot. 46: 278-282 (1971).

at the mouth. In less soriferous leaves, the sori are confined to the upper parts of pinnulae. The sori of *N. pseudoblepharistoma* are born on the lower parts of pinnulae restrictedly. The involucre are 2-2.5 mm long, slightly winged, distinctly bent downwards, and more or less dilated and glabrous or sparsely hairy at the mouth. The combinations of these characters are stable, e. g. the short involucre are always accompanied with distinct wings, concave mouth, etc. The two should be classified as different species. Besides the characters on sori and involucre, these two species are also different from one another in some other characters. *N. thysanostoma* has usually smaller leaves, yellowish or grayish green laminae, narrower stipes and axes of laminae, and rather copious clavate hairs on laminae. The leaves of *N. pseudoblepharistoma* are larger, deep green in colour, less hairy, and with rather stout stipes and axes of laminae. The differences in vegetative characters are, however, so delicate that the discrimination in sterile plants is not easy.

Separated from *N. thysanostoma* on one side, *N. pseudoblepharistoma* approaches to *N. grandis* on the other side. *N. grandis*, distributed in the Philippines and Java, has the involucre with more dilated mouth. Namely, *N. pseudoblepharistoma* is considered to be a distinct species standing on the intermediate position between *N. thysanostoma* and *N. grandis*.

In Isl. Iriomote, however, we can find some seemingly intermediate plants between *N. thysanostoma* and *N. pseudoblepharistoma*. They are characterized by the involucre which are 1.5-2 mm long, rather distinctly winged, not bent downwards, and truncate or slightly concave and hairy at the mouth. The sori are usually born on the middle parts of pinnulae. In these points, they agree well with the original description and figures of *Trichomanes blepharistomum* which was given by Copeland based on the specimens collected from the Philippines. They are less abundant than *N. thysanostoma* and *N. pseudoblepharistoma*, but extending to rather high elevations where the latter two do not occur. The morphological gap between this fern and *N. pseudoblepharistoma* is not so large but distinct. The two are clearly separated from one another at least in living state. On the other hand, the difference between this fern and *N. thysanostoma* is rather delicate and not always clear, although the two can be discriminated on the whole. I think that *N. blepharistoma* is separable from *N. thysanostoma*

at the rank of variety.

The main distinctions among the taxa discussed above may be summarized as follows:

Involucres bent downwards, dilated at the mouth.

Mouth conspicuously dilated *N. grandis*

Mouth less dilated *N. pseudoblepharistoma*

Involucres not bent, not dilated at the mouth.

Mouth concave *N. thysanostoma* var. *thysanostoma*

Mouth truncate..... *N. thysanostoma* var. *blepharistoma*

19. ***Stegnogramma wilfordii*** (Hook.) Serizawa, comb. nov.—*Hemionitis wilfordii* Hook. Exot. Ferns t. 93 (1859).—*Dictyocline griffithii* var. *wilfordii* Moore, Ind. Fil. 317 (1861); Tagawa, Acta Phytotax. Geobot. 10: 292 (1941), Col. III. Jap. Pter. 117, 200, f. 255 (1959).—*D. wilfordii* J. Sm. Hist. Fil. 149 (1875); Ching, Acta Phytotax. Sin. 8: 334 (1963).—*S. griffithii* var. *wilfordii* K. Iwats. Acta Phytotax. Geobot. 19: 117 (1963), Mem. Coll. Sci. Univ. Kyoto B, 31: 128 (1965); Hatusima, Fl. Ryukyus 191 (1971).—*H. griffithii* var. *pinnatifida* Hook. Sp. Fil. 5: 193 (1864).—*D. griffithii* var. *pinnatifida* Bedd. Ferns Brit. Ind. f. 155 (1866); Nakai, Bot. Mag. Tokyo 37: 158 (1933); H. Ito, Bot. Mag. Tokyo 52: 642 (1938).

Dictyocline has currently been considered to be closely related to *Stegnogramma*. This relationship was emphasized by Ching (1936a). He stated in the note on *Stegnogramma*: "it seems to be more than probable that the genus is the parental type from which *Dictyocline* is possibly derived". Iwatsuki (1963) united these two and *Leptogramma* into a single genus. He was followed by Holttum (1971).

Dictyocline, *Stegnogramma* and *Leptogramma* are surely very similar to each other. They are chiefly distinguished by the different mode of venation, i. e. *Dictyocline* has irregular reticulate (pleocnemioid) venations, *Stegnogramma* has regularly netted (goniopteroid) venations, and *Leptogramma* has free venations. The venation of *Dictyocline wilfordii* was described and discussed by Iwatsuki (1962) in detail. He concluded that the venation of *Dictyocline* is not a complicated form of the geniopteroid venations. Based on this conclusion, he considered that *Dictyocline* is not a direct derivative of *Stegnogramma*. If his consideration is correct, his

taxonomic treatment may not be accepted: the difference between the venations of *Leptogramma* and those of *Dictyocline* is so distinct that it may be more practical to treat these genera to be independent.

Of the various groups of the thelypteroid ferns, *Thelypteris* (in the sense of Ching, 1936b) and *Leptogramma* have free venations even in the fully developed leaves. In *Cyclosorus*, the venations of the juvenile leaves are all free and similar to those of *Thelypteris*. After the stage having pinnately branched lateral veins, the veinlets unite with those of the adjacent lateral veins: then the goniopteroid venations are formed. As an example, the juvenile leaves of *C. parasiticus* are shown in Fig. 1. Judging from the veins at the apical parts of laminae and pinnae, the venations of *Stegnogramma aspidioides* and *S. dictyoclinoides* are considered to be rather complicated forms of this type. In *Abacopteris*, the venations are free in very small leaves in which the lateral veins are pinnately arranged but not yet branched. The veinlets unite together before the accomplishment of the pinnate construction of lateral veins. Then, two rows of areoles are formed along the rachis. Fig. 2 is the venations in the juvenile leaves of *A. liukuensis*. The venations in the juvenile leaves of *Dictyocline* were illustrated by Iwatsuki (1962). The anastomosis occurs at the very early stage in which the lateral veins are not yet pinnately arranged and the venation somewhat retains dichotomous natures.

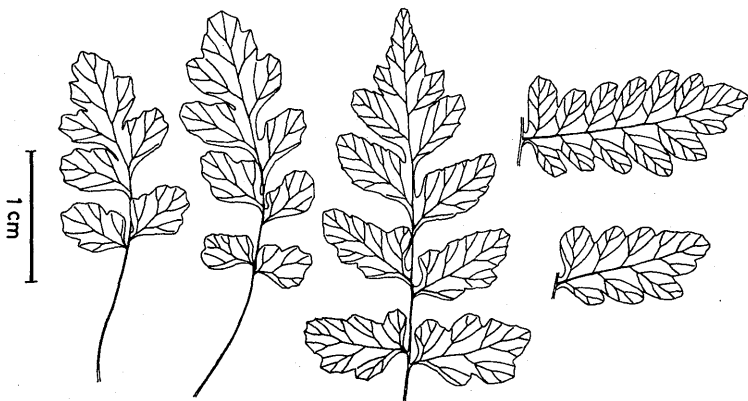


Fig. 1. Venations in juvenile leaves of *Cyclosorus parasiticus*.

The four types of venation are considered to belong to a single series. The gap between the *Cyclosorus*-type and the *Abacopteris*-type is filled with some intermediates. The mode of venation is gradually complicated in this series. The more complicated type is characterized by the earlier occurrence of anastomosis. This series is also closely related to the connation of segments. Most of *Thelypteris* species have no sinus-membranes, i.e. the segments are not joined. In *Cyclosorus* and *Stegnogramma* the translucent sinus-membranes are found at the bottom of sinus, i.e. the segments are more or less joined with the adjacent ones but the character of the margin of segments is persisting at the junctions. In *Abacopteris* and *Dictyocline* the segments are completely connated together, and no sinus-membranes are detected. There seem to be no essential differences between the venations of *Dictyocline* and those of *Stegnogramma*: the former seems to be a more complicated or "advanced" form of the latter. The similarities in many other characters suggest that *Dictyocline* is a direct derivative, or at least a very close ally, of *Stegnogramma*. Thus, these two "genera" are safely considered to be congeneric.

D. griffithii and *D. wilfordii* have usually been ranked as varieties of a single species. Copeland (1947) and Ching (1963), however, treated the two to be specifically distinct. In addition to the differences in the dis-

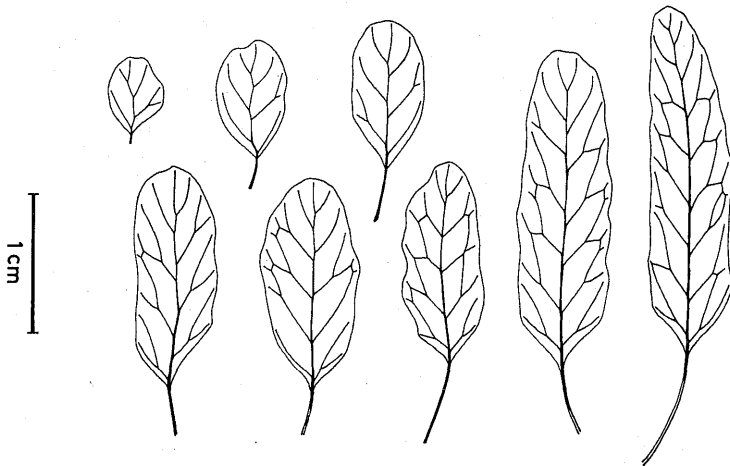


Fig. 2. Venations in juvenile leaves of *Abacopteris liukiensis*.

section and outline of laminae on which the usual discrimination is based, as mentioned by Ching, *D. wilfordii* has more complicated type of venation. Furthermore, *D. wilfordii* has subulate and fuscous scales, whereas the scales of *D. griffithii* are lanceolate and reddish brown. These differences between the two seem to warrant the treatment as two distinct species.

References

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18. フィリピンから記載された *Nesopteris blepharistoma* は、琉球の石垣島と西表島にも産する。この種類はカンシノブホラゴケとオオカンシノブホラゴケの中間的な特徴を持っているが、前者により似ており、その変種として扱うのがよいと思う。西表島ではカンシノブホラゴケやオオカンシノブホラゴケよりも少ないが、やや標高の高い所にまで生育している。

19. アミンダの不規則な網状脈は、アミンダモドキ属などに見られる規則的な網状脈のより複雑化したものと考えられる。脈理以外の形質に関して多くの共通点を持つアミンダ属、アミンダモドキ属、ミゾシダ属は、一つのよくまとまった系統群と推定される。アミンダとオオアミンダは、葉身の形や切れ込みのほかに脈理や鱗片も異なっており、別種とみなす意見に賛成である。

□中国科学院北京植物研究所編：中国高等植物図鑑 第三冊。科学出版社，1974年8月，4.70元。先に第一冊，第二冊で離弁花類まで出版されていたが，今回合弁花類の一部が出版された。エングラの旧版の配列にしたがって，イワウメ科からナス科までのせられている。中国はシャクナゲ類の豊庫であるが，それが282種も図示されているのは圧巻である。今まで中国のシャクナゲ類がこれだけまとめて図示されたことはないので，研究者だけでなく，園芸家にも重宝なものである。また将英氏の多年にわたるキョウチクトウ科，ガガイモ科の成果がまとめられているのは貴重である。

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