

Hiroshi INOUE*: **Taxonomic miscellany on hepatics (3)****

井上 浩*: 苔類の分類雜記 (3)

6. On some species of the Chinese Plagiochilaceae.

Due to very insufficient collections of the Plagiochilaceae made in China there have been rather few species reported from China [mainly by Stephani (1902-1905, 1917-1921) and Herzog (1930)]. Some of the Chinese species were critically reviewed (c.f. Inoue 1963), but still there are several species in ambiguous status. On the other hand, among recent collections of bryophytes made in China, I have found some interesting species of the Plagiochilaceae which are apparently new to China and interesting in phytogeographical view points. The following notes will discuss some of these species.

Xenochila integrifolia (Mitt.) Inoue, Bull. Nat. Sci. Mus. Tokyo 6: 373 (1963). = *Plagiochila integrifolia* Mitt., Journ. Linn. Soc. London 5: 96 (1961).

Specimen examined. Western Hubei Prov.; Shennongjia Forest District (31°30'N, 110°30'E), along the road between Pingquian and Dajiuhu, 1700 m alt., leg. "1980 Sino-Amer. Exped." no. 1380D (NY).

This species has been known from the Himalayas, Taiwan and Japan. In the specimen cited above, a few fragments of this species were found among *Plagiochila lenis* Inoue (sp. nov., described below), *Apometzgeria pubescens*, and some mosses; from the conditions observed in the specimen, the habitat seems to be nearly the same as in the localities in Japan and Taiwan; the habitat condition of the specimen was given as "Growing on hard wood tree (*Cyclobalanopsis*), in dark moist ravine".

Plagiochila satoi Hatt., Bot. Mag. Tokyo 57: 361 (1943).

Specimens examined. Western Hubei Prov.; Shennongjia Forest District, along the Changping River, NW of Baishaynan, 1900 m alt., leg. "1980 Sino-Amer. Exped." no. 1846A (NY). Prov. Hubei; Mt. Shennongjia, in Canyon between Gui-Zhu-Yuan and Yan-Zi-Ya, deciduous broad leaf forest, 1600-1750 m alt., on forest ground, leg. P.C. Wu, 158, 428 (MO).

* Department of Botany, National Science Museum, Shinjuku, Tokyo. 国立科学博物館 植物研究部

** Continued from Journ. Jap. Bot. 58: 65-71, 1933.

This species is a rather common, subalpine species known from Japan (from Hokkaido to Kyushu), Korea, and the Northwest Pacific coast of North America; this species was also reported as "*Plagiochila asplenoides* (L.) Dum. var. *miyoshiana* (Steph.) Inoue" from Prov. Heilongjiang (Chinae boreali-orientalis) by Gao & Zhang (1981).

The plants in specimen "no. 1846A" are small, rather juvenile, about 1 cm long, pale green; the leaves are broadly ovate to suborbicular, 1.4-1.7 mm long and wide, with the dorsal margin moderately to strongly decurved, moderately decurrent, and the ventral margin not decurrent; the leaf-margins are entire or with a few, 1(-2)-celled teeth; the leaf-cells at middle portion are $24-30 \times 22-26 \mu$, those of the leaf-base are moderately elongated, $24-30 \times 30-50(-56) \mu$, with thin cell-walls (along the leaf-margin sometimes they are slightly thickened); the trigones of leaf-cells are small to medium in size and acute. The plants in other two specimens collected by Wu (nos. 158 & 428) are more well developed with perianth, approaching to the common phase of this species in Japan.

Plagiochila lenis Inoue, sp. nov. (Fig. 1)

Planta similis *Plagiochilae hakkodensi*, sed differt 1) foliis cuneatis, 2) cellulis foliorum pellucidis, trigonis minutis, et 3) cellulis basalibus foliorum elongatis.

Plants small to medium in size, 1-2 cm long and 3.5-4.2 mm wide, pale green, rather translucent, obliquely or sometimes erectly ascending from short rhizomatous portions. Stem about 450μ thick, in cross section about 15 cells across, the cortical cells $10-15 \times 17-25 \mu$, with moderately thickened and pale brownish walls, the interior cells $25-50 \times 30-55 \mu$, moderately thick-walled; branches rather few, if present exclusively of the lateral-intercalary type, developing from dorsal side of leaf-axils. Leaves remote to approximate, obliquely spreading, along dorsal margin moderately revolute, base of dorsal margin long decurrent along dorsal stem-midline, ventral margin moderately decurrent, leaving 4-5 cell rows of the ventral merophyte; leaves ovate or ovate-oblong, 1.5-1.8 mm wide and 1.8-2.1 mm long, dorsal margin nearly straight or weakly arched, apex rounded or weakly to moderately retuse, ventral margin distinctly arched from moderately to distinctly cuneate base; teeth on leaf-margin present from distal half of dorsal margin to ventral margin, irregular in size, mostly spinose, sometimes narrowly triangular, with an acute terminal cell of 1.7-2.2 times as long

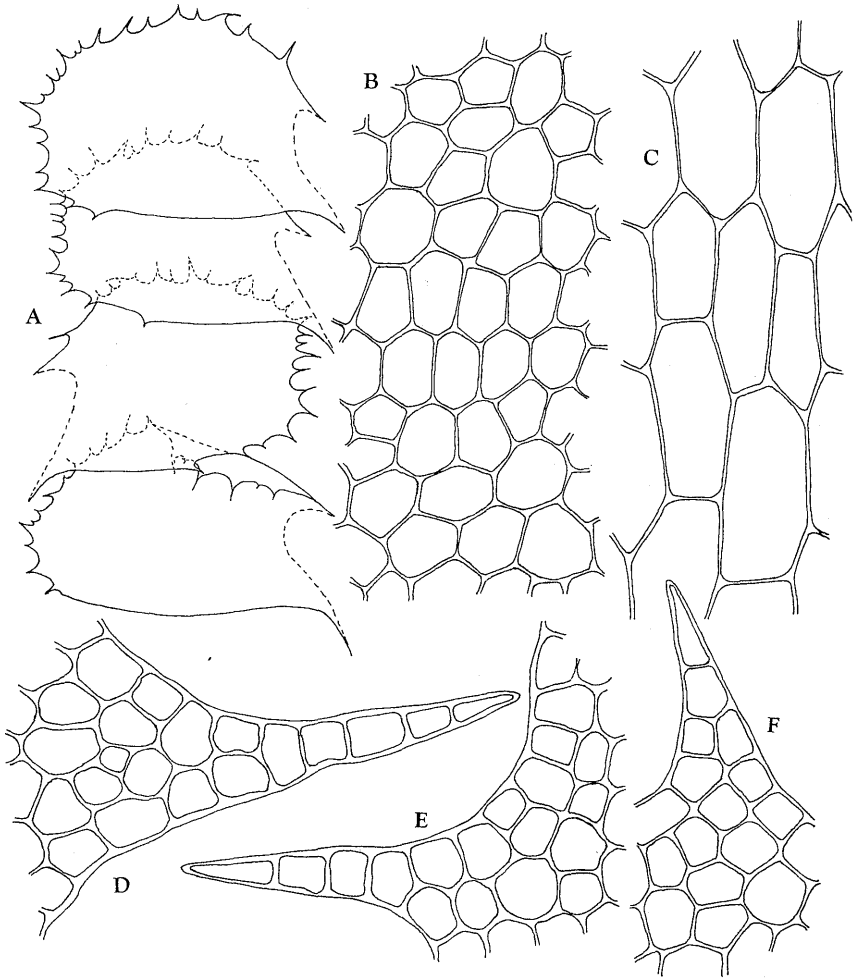


Fig. 1. *Plagiochila lenis* Inoue. A. Leaves, $\times 15$. B. Cells from leaf-middle, $\times 350$. C. Cells from leaf-base, $\times 350$. D-F. Teeth from leaf margin. $\times 350$. All figs. based on the type.

as wide ($12-15 \times 25-32 \mu$); cells at leaf-middle $20-25 \times 23-30 \mu$, those of leaf-base moderately to distinctly elongated, $22-30 \times 47-62 \mu$, walls thin, trigones small, acute, cuticle smooth, Underleaves vestigial, 2-3-lobed to the base, lobes 2-3 cells long. Asexual reproduction not observed.

Androecia not seen. Gynoecia terminal, with 0-1 innovation; bracts oblong or oblong-ovate, 1.8-2.3 mm long and 1.3-1.5 mm wide, with strongly revolute dorsal margin, teeth on margin similar to those of leaves in size and number; perianth short cylindrical, about 2.5 mm long and 1.7 mm wide, dorsal keel nearly the same in length with the ventral, not winged, mouth arched, moderately bilabiate, margin spinosely dentate, teeth 1-2-cells wide at the base and usually 3-5-cells long.

Type. Western Hubei Prov.; Shennongjia Forest District (31°30'N, 110°30'E), along the road between Pingquian and Dajiuhu, 1700 m alt., leg. "1980 Sino-Amer. Exped." no. 1380D (NY; isotype in TNS).

Specimen examined. Western Hubei Prov.; Shennongjia Forest District, Vicinity of Taizishang, along the Yingyu River, elev. 1400-2000 m, on rocky slope in shade, leg. "1980 Sino-Amer. Exped." no. 1511 (MO).

The type specimen includes also *Xenochila integrifolia*, *Apometzgeria pubescens* and some mosses as described above. *Plagiochila lenis* is apparently closely related to *P. hakkodensis* Steph. known from Japan, but it is well characterized by 1) the soft-textured, pale green plants, 2) the distinctly cuneate leaf-base, 3) the pellucid, thin-walled leaf-cells, and 4) the moderately to distinctly elongated basal leaf-cells (usually more than 2 times as long as wide). The rounded to moderately retuse leaf-apex with spinose teeth resembles those of *P. lacerata* Steph. of China, but *P. lacerata* has the leaves distinctly broadened at the base (never cuneate), the basal leaf-cells are never elongated, and the trigones of leaf-cells are medium to large in size and distinctly subnodulose.

Plagiochila lenis is also somewhat similar to *P. taiwanensis* Inoue known from Taiwan, in general aspect, but in *P. taiwanensis* the leaves have the spinose, small teeth on entire dorsal margin, with sharply elongated terminal cells usually of 3.6-4.2 times as long as wide, and the basal leaf-cells are not markedly elongated (usually less than 2 times as long as wide).

Plagiochila togashii Inoue in Hara, Fl. East. Himalaya: 520 (1966); Journ. Hattori Bot. Lab. 30: 125, fig. 3, F-L (1967).

Specimen examined. Quang-Xi Prov.; Xing-An Pref., in the forest of *Tsuga*, on moist ground, leg. S. S. Hu 80413, as *Plagiochila cadens* Inoue (MO).

This species has been known only from southern part of Sikkim. The Chinese plants have more elongated, oblong leaves with cuneate base, but other important characteristics are the same as the type from Sikkim. As this species

is rather poorly described, the following description based on the Chinese plants will supplement the previous one supplied by Inoue (1967).

Plant slender, filiform, pale to yellowish green, (1.5-)2-3 cm long and about 1 mm wide, obliquely or erectly ascending, without differentiated rhizomatous stem. Stem 150-200 μ thick, pale brownish green, in cross section about 10 cells across, the cortical cells in 2 layers, with moderately to distinctly thickened, pale to bright brown walls, the interior cells thin- or moderately thick-walled, 15-20 \times 15-27 μ , trigones absent; vegetative branches rather few, exclusively of the lateral-intercalary type, developed from leaf-axils. Rhizoids sometimes frequent, scattered. Leaves remote, obliquely spreading, dorsal margin moderately revolute, moderately to long decurrent along dorsal stem-midline, ventral margin hardly decurrent, extending to near the ventral stem-midline, usually leaving 1-2 cells wide ventral merophyte; leaves oblong or ovate-oblong, 0.4-0.6 mm wide and (0.5-)0.9-1.1 mm long, (1.5-)1.7-2.3(-2.5) times as long as wide, dorsal margin nearly straight or weakly concave, entire, ventral margin weakly concave, with 2-4, spinose teeth, basal portion moderately to distinctly cuneate, apex narrowly rounded, with 2(-3), rather large-sized, triangularly acuminate teeth, terminal cell sharp, 12-15 \times 30-37 μ , 2.5-3 times as long as wide. Cells of leaf-middle (7-)10-15 \times (8-)10-20 μ , those of leaf-base 17-22 \times 34-50 μ , walls more or less thickened, trigones absent or minute, cuticle smooth. Underleaves vestigial, filiform, 2-3-celled, easily caducous.

Androecia terminal or intercalary on shoot, with bracts in 3-7 pairs, closely imbricate, strongly inflated and erectly oriented at the basal half, distal half obliquely spreading, with 3-8, small, triangularly acuminate teeth on margin. Gynoecia terminal on shoot, with 1-2 innovations; bracts ovate-oblong, about 0.6 mm wide \times 0.9 mm long, teeth on ventral and apical margin triangularly acuminate; perianth campanulate, about 1 mm wide \times 1.1 mm long, dorsal keel longer than the ventral, narrowly winged (at least on basal half), mouth bilabiate, arched, irregularly toothed, teeth broad-based, usually 3-6 cells wide at the base.

Between the Himalayan and Chinese plants there are observed some differences; for instance, the leaf-cells of the Chinese plants are mostly 7-14 \times 8-15 μ at middle portion but those of the Himalayan plants usually 13-22 \times 20-27 μ ; the leaves of the Chinese plants are more elongated and usually 1.7-2.4 times as long as wide (in the Himalayan plants the length/width ratio is usually 1.5-1.8).

However, such important characters as 1) the more or less uniformly thickened cell-walls of leaves, lacking trigones, and 2) the campanulate perianth with a distinct wing on the dorsal keel (at least on the basal half), clearly indicate the identity of the Chinese plants with those of the Himalayas.

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6. 広大な中国からは、ハネゴケ科苔類が意外に少数しか記録されていない上、これらの種の正確な把握も充分におこなわれてはいない。ここでは、最近中国で採集された資料の中で、植物地理学的ないしは分類学的に興味を引くもの4種について取り扱った。

Xenochila integrifolia はヒマラヤ～日本に分布が知られていたが、中間の中国には未知であった。日本の亜高山帯に多い *Plagiochila satoi* ヒメハネゴケも中国中部に見出されたが、中国の東北地方にも分布している。*Plagiochila lenis* (新種) は日本の *Plagiochila hakkodensis* や中国の *P. lacerata*, 台湾の *P. taiwanensis* に似るが、葉形、葉細胞などの性質ではっきり異なる。ヒマラヤから記載された *Plagiochila togashii* も今回中国にまで分布域が広がったが、十分な記載がないので、中国産の植物に基づいて記載をしておいた。