Hiroshi INOUE*: **Taxonomic miscellany on hepatics (2)****

井上 浩*: 苔類の分類雑記 (2)

4. *Cephalozia uniloba* N. Kitagawa and *Cephalozia* subg. Haplocephalozia Schust.

When Kitagawa (1962) discussed the hepatics on Mt. Tsurugi, southern Japan, he described a new species of *Cephalozia*, *C. uniloba* N. Kitagawa, which has the unique feature of unlobed, asymmetric leaves. He compared this species with *C. hakkodensis* Steph. (=*C. leucantha* Spruce !). Subsequently, *C. uniloba* has been reported from several mountains in Shikoku and middle to northern Honshu (Inoue 1981); Inoue (1974) briefly discussed this species, pointing out its close relationship with *C. leucantha*. Schuster (1974) emphasized the unlobed leaves and the weakly developed hyalodermis of the stem in *C. uniloba* and proposed a new subgenus, subg. Haplocephalozia Schust., for it.

During the course of my observations on the variation of *C. leucantha* in Japan, I have noticed that some populations of it very frequently produced unlobed leaves and poorly marked stem hyalodermis; these populations were mostly from fallen wood in extremely wet, shaded places, usually associating with *Odontoschisma denudata*, *Lophozia incisa*, *L. cornuta*, *Blepharostoma trichophyllum*, and *Mylia verrucosa*. A sample of variation of these populations is presented in Figs. 1-11 of this paper. In these populations, some plants have the typically bilobed leaves of *Cephalozia leucantha*, but some plants have strongly and asymmetrically bilobed leaves; the ventral lobes of asymmetrically bilobed leaves are considerably variable in size and in certain leaves the ventral lobes are completely reduced (sometimes a small, hyaline, mucillage-like cell may ramain on the middle portion of the ventral margin of the dorsal lobe and it represents the reduced ventral lobe). The frequency of leaves with completely reduced ventral lobes (thus appearing unlobed, triangular-ovate leaves) is also variable in a population and sometimes all shoots have the leaves of the "unlobed" type.

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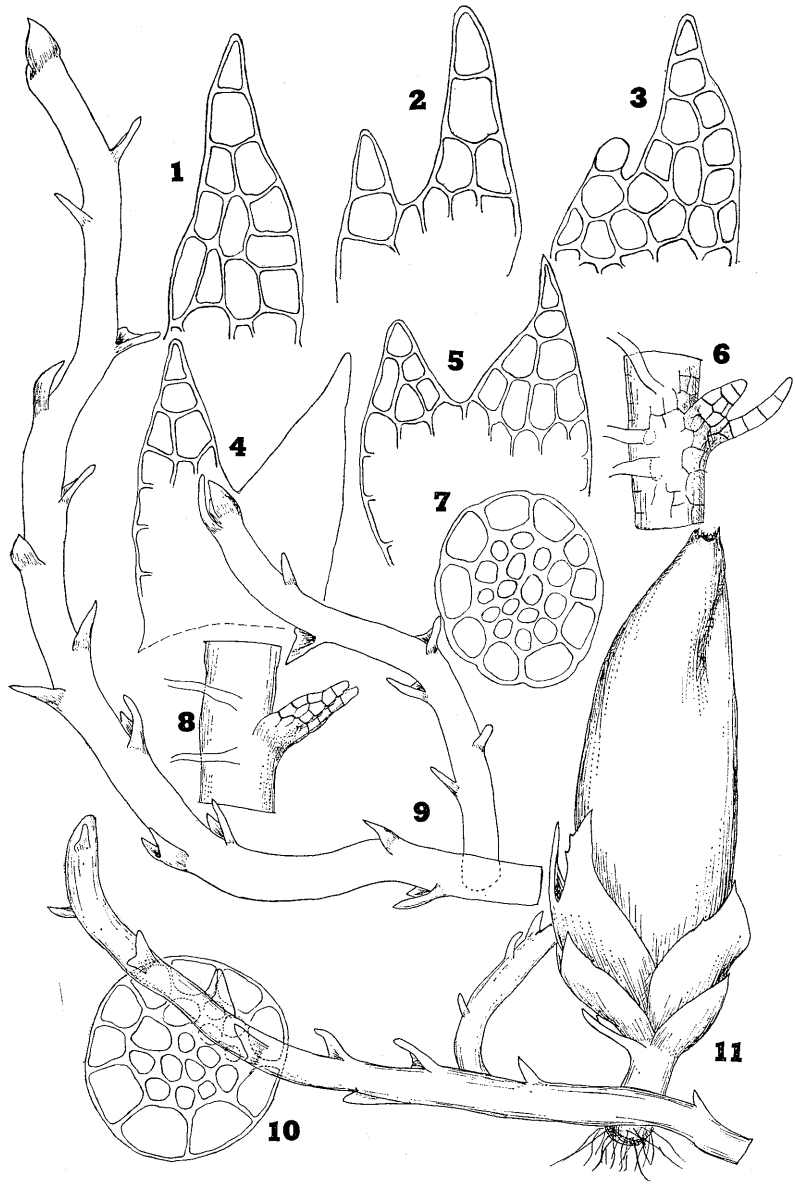
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The plants in the type material (Mt. Tsurugi, Tokushima Pref.; leg. T. Kodama no. 7180 in KYO; isotype in TNS) showed the same variation of leaves as described above, but the greater portion of the population were shoots with "unlobed" leaves. I have checked several specimens of *C. leucantha* from N. America (cf. USA: Mt. Mansfield, Vermont; leg. R.M. Schuster no. 43823a in TNS) and Europe (cf. Czechoslovakia: Mt. Slovenske, Slovakia centr.; leg. J. Vana s.n. in TNS), and I have observed the same tendency of variation of leaves as in the Japanese population.

The development of unlobed or strongly asymmmetrically bilobed leaves (with reduced ventral lobes) is not described in any of literature which discusses *C. leucantha* (cf. R.M. Schuster 1974), possibly because these plants with unlobed leaves were regarded as undeveloped, juvenile shoots. However, as shown in Fig. 11 of the present paper, even such shoots produced gynoecia. On these shoots with gynoecia, most parts have typically bilobed leaves.

The stem anatomy of *C. leucantha* is considerably variable as already discussed by Schuster (1974). On the shoots with frequent unlobed leaves the stem also shows considerable variation and the shoots in the type material mostly have a weakly developed hyalodermis; however, I have never observed the extreme case presented in Fig. 2:4 of Kitagawa (1962), but most parts of stem show more distinctly defined, enlarged cortical cells. Kitagawa (1962) illustrated the bracts and bracteoles of gynoecia to be fused at the basal 1/3 the length, but this was probably an error of illustration and the bracteole is usually only slightly (or at most for 1/5 the length) connate with bracts at the base.

The localities of *C. uniloba* so far reported are all covered by the area of *C. leucantha* in Japan, and any ecological features known for *C. uniloba* are also the same as those of *C. leucantha*.

From the above observations, I think that *C. uniloba* is a variant of *C. leucantha* with greatly reduced ventral leaf-lobe; this variant cannot be separated as a taxonomic entity because the reduction of the ventral lobe may be observed even on the same shoot as with typically bilobed leaves. Thus there is no reason to separate *C. uniloba* as an independent, monotypic subgenus Haplocephalozia

Figs. 1-11. *Cephalozia leucantha* Spr. 1-5. Various shapes of leaves, ×280. 6, 8. Leaves in situ, ventral view, ×135. 7, 10. Cross sections of stem, ×280. 9, 11. Parts of shoots, dorsal view, ×64. All figs. based on Inoue 25725 (Mt. Yatsugadake).

in the genus *Cephalozia*, and *C. uniloba* should be treated as a synonym of the polymorphic *C. leucantha*.

Cephalozia (Dum. emend. Schiffn.) Dum. (Subg. Cephalozia), Rec. Obs. Jung.: 18 (1835) = *Cephalozia* subg. Haplocephalozia Schust., Hepat. & Anth. N. Amer. 3: 700 (1974).

Cephalozia leucantha Spruce, On *Cephalozia*: 68 (1882) = *Cephalozia uniloba* N. Kitagawa, Acta Phytotax. Geobot. 19: 62 (1962).

5. On *Cryptocoleopsis imbricata* Amakawa and *Gymnomitrion integerrimum* N. Kitagawa from Japan.

On October 30, 1959, Amakawa described a new genus in the Jungermanniaceae, *Cryptocoleopsis*, based on a sole species, *C. imbricata* Amakawa, from Hokkaido; since then no further report has been made on this species. In December 1959, about one month later than the publication of *C. imbricata*, Kitagawa described a new species of *Gymnomitrion*, *G. integerrimum* N. Kitagawa, from a high mountain of central Honshu and since then no further report of this species has been made. But, Schuster (1974, page 5) already queried *G. integerrimum*, saying that "It is possible that so-called entire-leaved species of *Gymnomitrion* (*G. integerrimum* N. Kitagawa and *G. noguchianum* Hatt.!) represent a dense-leaved and undescribed genus of Jungermanniaceae, allied perhaps to *Cryptocolea* or *Cryptocoleopsis*. If regular terminal branching can be found in these supposed species of *Gymnomitrion*, I would transfer them out of the Gymnomitriaceae."

Recently I came across a specimen which was collected by Mr. E. Sakuma on Mt. Shirouma. The plants of this specimen were all male and somewhat similar to the species of *Gymnomitrion* with very densely imbricate, strongly concave leaves with pale brownish gray color. The plants were compared with the type of *G. integerrimum* and I found both were the same species. Furthermore, the plants from Mt. Shirouma were compared with the type of *Cryptocoleopsis imbricata*, and I found that *Gymnomitrion integerrimum* and *Cryptocoleopsis imbricata* were the same species, although some minor differences were observed between them.

The plants from Mt. Shirouma and Mt. Tateyama (type of *Gymnomitrion integerrimum*) were a little smaller, being 0.2-0.4 mm wide (0.6-0.9 mm wide in the type of *Cryptocoleopsis imbricata*), with pale grayish brown or bright

brown color, and with more densely and closely imbricate, nearly erect-appressed shoots (thus being *Gymnomitrion*-like in habit) ; they were all male plants. The plants from Isl. Rishiri (type of *Cryptocoleopsis imbricata*) and Mt. Daisetsu in Hokkaido have a somewhat *Nardia*-like habit with olive or brownish color but the shoots were not so markedly dorsi-ventrally appressed. However, I do not think that these differences are of value to separate two species, because the male plants from Hokkaido sometimes have the *Gymnomitrion*-like habit with closely imbricate leaves and somewhat dorsi-ventrally apppessed habit and are smaller than the female plants.

The branches of *Cryptocoleopsis imbricata* are rather few and they are of the ventral-intercalary or lateral-intercalary type; frequently from the lower portion of shoots, descending flagelliform branches with small, scale-like leaves may develop by the ventral-intercalary type. In the female plants from Hokkaido I have observed some gynoecial innovations when the gynoecia were unfertilized; the gynoecial innovations were always ventral-intercalary from the posterior portion of a more or less tubular perigynium ; no terminal branches were observed. The rhizoids are numerous and scattered over ventral side of stem.

Although Schuster (1974) made the occurrence of terminal branching the basis of transferring *Gymnomitrion integerrimum* out of the Gymnomitriaceae, no terminal branches were observed as stated above. However, *G. integerrimum* should be excluded from the Gymnomitriaceae and treated as a synonym of *Cryptocoleopsis imbricata*, as discussed above, because of 1) the scattered rhizoids on whole ventral side of stem, and 2) the absence of a tendency to have bilobed leaves; *C. imbricata* (=*Gymnomitrion integerrimum*) is perhaps the species linking Gymnomitriaceae and Jungermanniaceae.

Another species with "unlobed" leaves of *Gymnomitrion*, *G. noguchianum* Hatt., has the distinct tendency to the bilobed-leaves; as discussed by Inoue (1974), the leaf apices of *G. noguchianum* are usually obtuse and not bilobed, but sometimes they are slightly bilobed with sharrow sinus; the rhizoids are quite few and, if present, always restricted to lower portion of stem; thus, this species clearly belongs to *Gymnomitrion*.

Cryptocoleopsis imbricata Amakawa, Jounr. Hattori Bot. Lab. 21 : 274 (1959) =*Gymnomitrion integerrimum* N. Kitagawa, Acta Phytotax. Geobot. 17 : 36 (1959).

Distribution. Hokkaido: Isl. Rishiri, leg. D. Shimizu s.n. (type in NICH); Mt. Daisetsu, leg. Y. Kuwahara no. 6050 (NICH), leg. N. Kitagawa no. 1221 (NICH). Honshu: Mt. Tateyama, Toyama Pref., leg. N. Kitagawa no. 3630 (type of *Gymnomitrion integerrimum* in KYO); Mt. Shirouma, Nagano Pref., leg. E. Sakuma no. 2025 (TNS, as *Gymnomitrion integerrimum*).

Ecology. *Cryptocoleopsis imbricata* is rather rare and distributed in the subalpine or alpine zone in central to northern Japan, and altitudinally it is between 1400-2100 m in Hokkaido and 2000-2300 m in central Honshu. This species usually forms a small, pale brownish or grayish brown mat on moist rock usually covered with thin-layer of soil, or in wet rock-crevices, in rather open places, sometimes associating with *Antheria juratzkana*, *Jungermannia pusilla*, and some small mosses.

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4. 四国の剣山から記載され，その後本州の数ヶ所から記録されていた *Cephalozia uniloba* N. Kitagawa はタカネヤバネゴケ *C. leucantha* Spruce の一変異型である。

C. leucantha では葉の腹裂片が退化し，いちじるしい場合には三角形の葉形となる。この形のものはとくに陰湿地の腐木上に生育するものが多く，*C. uniloba* はそのような型の植物である。二裂せず三角形の葉をもつものから，完全に二裂する葉をもつものまで，様々な中間段階の形が同じ一つのポピュレーション内にみられる。このような変異についてはこれまであまり深く解析されていないが，ヨーロッパや北アメリカに産する *C. leucantha* でも観察された。

5. 北海道利尻島および大雪山から記載され日本特産属とされた *Cryptocoleopsis imbricata* Amakawa と，北アルプス立山から記載された *Gymnomitrion integerrimum* は同じものである。Schuster (1974) はすでに *Gymnomitrion integerrimum* が *Cryptocolea* や *Cryptocoleopsis* に近縁のものであると述べているが，論議の中で彼が言っている terminal branch はこの種類にはなく，すべて ventral-intercalary か lateral-intercalary の分枝となる。このような点から *Cryptocoleopsis* は *Cryptocolea* と共に Jungermanniaceae の中でも Lophoziaceae subf. Jamesonielloideae に近い群を構成すると思われる。

□何 豊吉： **台湾熱帯植物彩色図鑑 3** (Ho Feng-chi: Tropical plants of Taiwan in color 3 356 pp., 325 pls. 1982. 恒春熱帯植物園標本室，台湾. $40. 何氏は台湾ではじめて英国リンネ学会会員になった人という。それだけに本書では写真もすぐれているのがわかる。本書ではタカトウダイ科からはじめて，合弁花類にいたる範囲で，主に樹木を集め，しかも台湾に自生するもの以外にも熱帯原産の種を拾っているので参考となるものが多い。それに第一巻にくらべ大分写真のとり方がよくなっているので気持がよい。各頁の上部に花又は果実の写真を載せ，下部に学名と異名の出典，記載，産地，用途等を記している。中国発行の植物誌や図鑑はこの頃数多く出版されるが，これらでは漢字の書体が変って，私などは読むのにどうも苦労するが，台湾発行なので，旧書体であるのも助かるものである。 (前川文夫)

□北村四郎： **北村四郎選集 I 落葉** 349 pp. 1982. 保育社，大阪. ¥3,800. 北村四郎氏は中々著作の多い人である。専門論文は別刷をくばるが，別刷がなかったためにくばることができなかったとしてこれらをまとめたのが本書であると記されている。主に「京都新聞」に現代の言葉として載せたものとタキイ種苗会社発行の園芸新知識に草木風興誌としてともに10年以上にわたって連載されたものが主である。前者は話題は広く生物学全般にわたるが，後者は主に顕花植物の属や種をテーマに論述している。読んでみると中々に面白く，簡単に触れたものにも案外深い興味が見出せるし，所によってはその後の変化を後記として追記されていて親切である。氏の得意とする古いものに対する追及も中々鋭いものがあり，処々に古い文献の見事な挿図が引用されているのもまた参考となるであろう。 (前川文夫)