

Harumi OCHI*: **Notes on moss flora (VIII)****

越智春美*: セン類覚えがき (VIII)**

88. **Entosthodon physcomitrioides** (Mont.) Mitt., Journ. Linn. Soc. Bot. Suppl. 1: 55 (1859); Ochi, Jap. Journ. Bot. 20(1): 17, f. 7-8 (1968).

Specimen examined. THAILAND. Payap: Chiangmai, Mt. Inthanon, in sparse forest, ca. 1600 m alt., on soil, *Tagawa & Kitagawa 2759**** NICH 275613. **New to Thailand!**

Distribution: India, Java, Thailand, Formosa, and New Caledonia.

89. **Pseudopohlia bulbifera** Williams, Bull. New York Bot. Gard. 8: 346, 172 (1914); Bartr., Philipp. Journ. Sci. 68(1-4): 133, pl. 10, f. 161 (1939). (Fig. 50)

Brachymerium microstomum Harv. in Hook., Icon. Pl. Rar. 1: 19 f. 4 (1836); Ochi, Hikobia 5(1-2): 16, f. 22, A-D (1967), syn. nov.—*Pseudopohlia yunnanensis* Herz., Hedwigia 65: 157, 4 (1925); Chen, Gen. Musc. Sin. (Pars Prima) 257, f. 161 (1963), syn. nov.—*Pohlia brachymerioides* Broth. in sched. (H). See Ochi (1967) for the other synonyms under *Brachymerium microstomum*.

Specimens examined. PHILIPPINES. Luzon: Subprov. Benguet, between Baguio and Sablan, *Williams 1770*—isotype (BM). CHINA. Yunnan: *S. Ten 64/c*—isotype of *P. yunnanensis* (BM). NEPAL(?). *Wallich H2421*—type of *B. microstomum* (K). INDIA. Mussoorie: in latere sept. m. Nog Tiba, 10,000 ft. alt., *Bahadru 4358*—as *P. brachymerioides* (H). THAILAND. Payap: Chiangmai, between Mae Klang Waterfall to Ban Yang, along Nam Mae Klang, foot of Mt. Inthanon, 350-600 m alt., dry deciduous forest zone, *Tagawa & Kitagawa s. num.****—NICH 275414. **New to Thailand!**

Distribution: China, Nepal, India, Thailand, and the Philippines.

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** (I) in Advanc. Front. Pl. Sci. 4: 105-126, pl. 1-8 (1963); (II) in Journ. Jap. Bot. 39(2): 49-56, f. 9-10 (1964); (III) in Hikobia 4(1-2): 7-22, f. 11-17 (1964); (IV) *ibid.* 5(1-2): 7-13, f. 18-20 (1967); (V) *ibid.* 5(1-2): 14-38, f. 21-33 (1967); (VI) *ibid.* 5(3-4): 153-171, f. 34-45 (1969); and (VII) in Journ. Jap. Bot. 45(1): 21-28, f. 46-49 (1970).

*** The specimens with three asterisks were collected by the members of "Kyoto Univ. Bot. Exped. to Thailand 1965-66 in co-operation with the Roy. For. Dept., Bangkok."

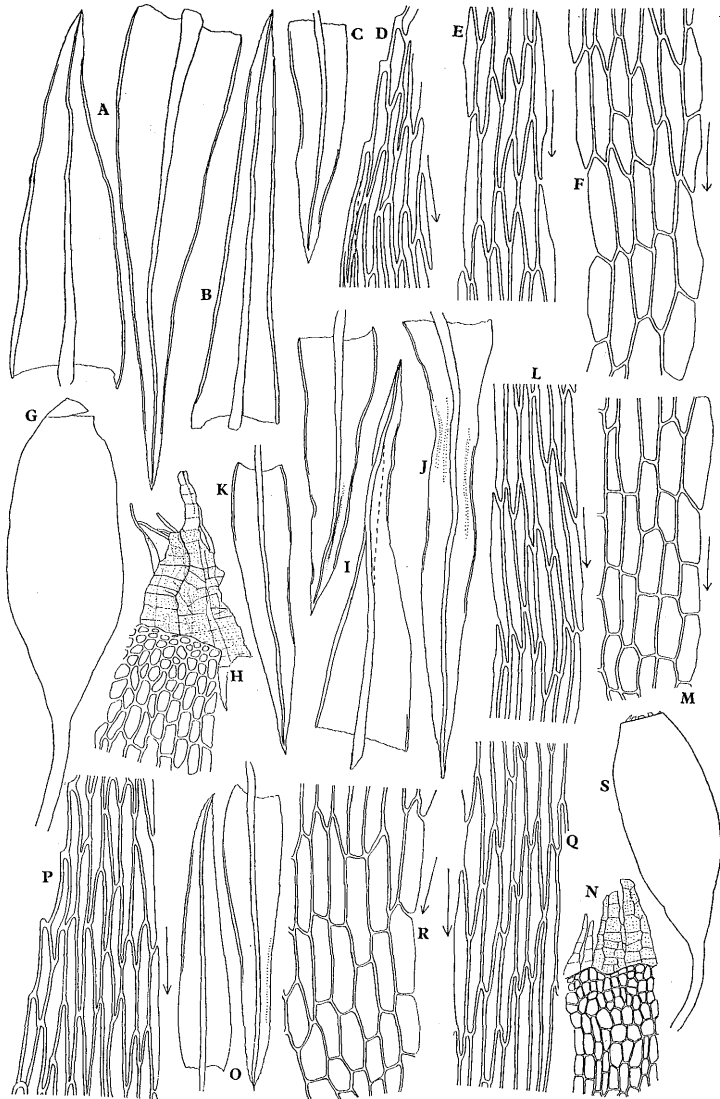


Fig. 50. *Pseudophytia bulbifera* Williams: A, I, J & O. Stem-leaves, $\times 22$. B. Perichaetial leaf, $\times 22$. C & K. Innovation leaves, $\times 22$. D & P. Upper parts of leaves, $\times 200$. E, L & Q. Lamina-cells in the median parts, $\times 200$. F, M & R. Ditto in the basal parts, $\times 200$. G & S. Capsules, $\times 11$ (fairly much pressed). H & N. Peristome and exothelial cells (upper part of peristome teeth broken off in N), $\times 96$. A-H. drawn from isotype of *P. bulbifera* (BM), I-N from isotype of *P. yunnanensis* (BM), and the others from type of *Brachymenium microstomum* (K).

There has been observed only a slight difference in plant size between type materials of *P. bulbifera* and *P. yunnanensis*, and the difference never seems to be essential at all. The type material of *B. microstomum* available consisted of smaller plants than those of either *P. bulbifera* or *P. yunnanensis*, and having capsules strongly pressed and with much broken peristome only. But these three agree well with each other in the other respects. The original illustration of *B. microstomum* is not considered to have been presented adequately: outer peristome teeth short-triangular without slit in the upper part, in spite of the fact that they are actually in pair with a clear slit each; and also inner peristome is far from the actual feature. But it is possible that the peristome teeth were presented just as in the original illustration based on a rough observation.

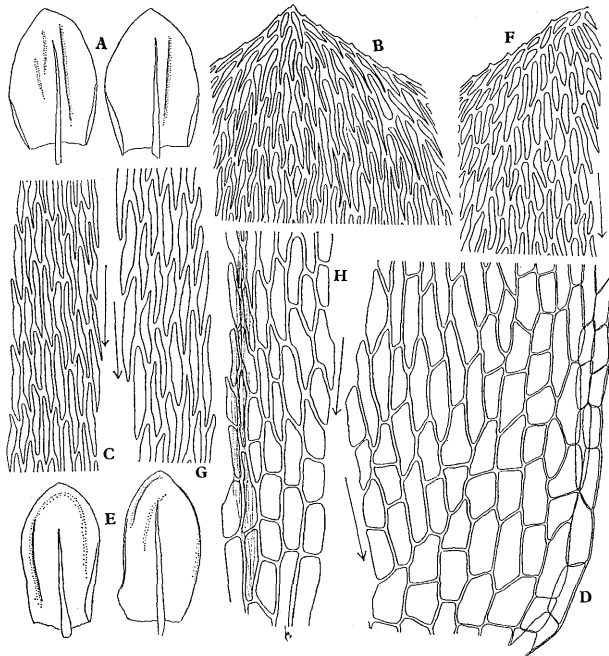


Fig. 51. *Bryum auratum* Mitt.: A & E. Leaves, $\times 22$. B & F. Leaf-apices, $\times 200$. C & G. Lamina-cells in the median parts, $\times 200$. D & H. Ditto in the basal parts, $\times 200$. A-D. drawn from "Eusebio 33" as *Anomobryum Macleanii* (BM) and the others from isotype of *Anomobryum sulcatum* (BM).

For the reasons stated above, *P. yunnanensis* and *B. microstomum* are reduced to synonymy.

90. ***Brachymerium contortum*** Hamp. ex Ochi, Journ. Jap. Bot. 43(4): 109, 1 (1968).

Specimens examined. FORMOSA. Nantow Hsien: Upstream area of Shihpachang Chi, Wangmei Tsun, Hsini Hsiang, ca. 1800 m alt., on bark of stump on roadside in open area close to hardwood forest, *C. K. Wang 10818, 10812*—+ *Bryum Billardieri* (H. O.): **New to Formosa!**

Distribution: Nepal, Sikkim, and Formosa.

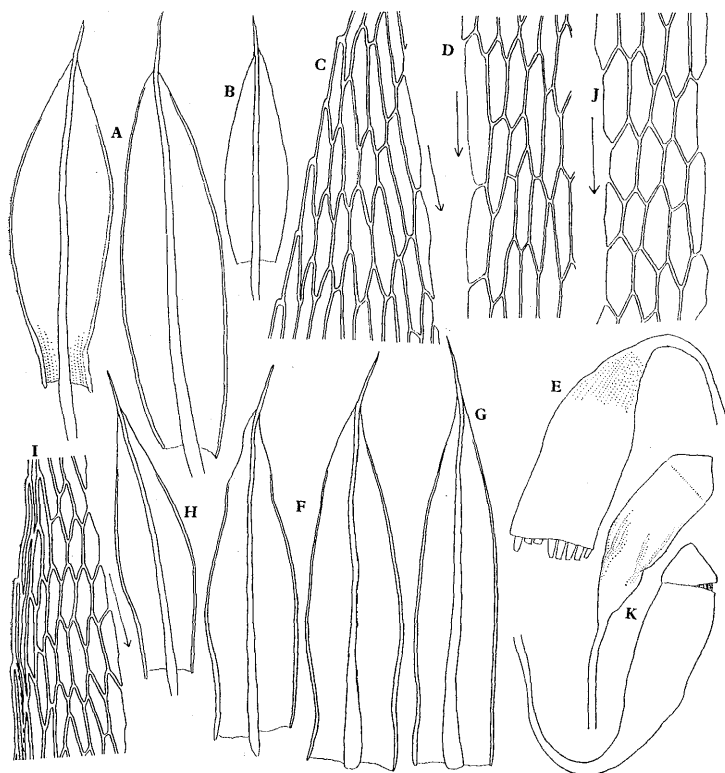


Fig. 52. *Bryum gedeanum* Bosch et Lac.: A, F & G. Stem-leaves, $\times 22$. B & H. Innovation leaves, $\times 22$. C & I. Upper parts of leaves, $\times 200$. D & J. Lamina-cells in the median parts, $\times 200$. E & K. Capsules (E showing strongly pressed one with broken peristome), $\times 11$. A-E drawn from lectotype, and the others from "NICH 275037" from Thailand.

91. **Bryum auratum** Mitt., Journ. Linn. Soc. Bot. Suppl. 1: 67 (1859); Ochi in Hara, Fl. E. Himalaya 557 (1966); Hikobia 5(3-4): 155, f. 36 (1969). (Fig. 51)

Anomobryum sulcatum Thér. et P. Vard. in P. Vard., Rev. Bryol. 47: 50, 51 (1920), syn. nov.

Specimens examined. THAILAND. Payap: Chiangmai, Ban Yang, Mt. Inthanon, ca. 1200 m alt., in dry deciduous forest, on soil, *Tagawa & Kitagawa 2557****—NICH 275037—+*Bryum argenteum*, *B. gedeanum* and *Funaria hygrometrica*; ditto, 1670 m alt., on weathered rock in clearing, *A. Touw 9976*—Herb. Lugd. Bat. 20. Ind. Or. No. 968, 250-191 (L.). **New to Thailand!** KENYA. Rives du Chania, *R. R. Soul 185*—type of *Anomob. sulcatum* (PC, also isotype in BM). TANZANIA. Luempe, *P. Eusebio 33*—as *A. Macleannanii* (BM). **New to Africa!**

Distribution: S. to S. E. Asia, and E. Africa.

92. **Bryum gedeanum** Bosch et Lac., Bryol. Jav. 1: 147, 120 (1860); Fleischer, Musci Fl. Buitenzorg 2: 557 (1904). (Fig. 52)

Specimens examined. INDONESIA. Java: Ost-Java: Ardjoenogebirge bei Lali-Djiwa auf Erde, 2650 m & West-Jawa: Gedehgebirge bei Patjet auf Erde, 1200 m, coll. *Fleischer*—both in the packet "Fleischer: Musci Frond. Archip. Ind. ser. VIII (351-430) 1905, No. 365"—Herb. Lugd. Bat. 20. Ind. Or. No. 910, 77-9 (L); Trogon, Herb. Korthals, as "*Bryum pallescens* Schwaegr."—Herb. Lugd. Bat. 20. Ind. Or. Nos. 910, 77-10, 910, 77-13—chosen as lectotype, 910, 77-14, 910, 80-151, 910, 80-153 (L). Tjibodas an Alsophila—ditto No. 910, 77-12 (L). BHUTAN. Lubuli (2600 m)—Chendebi (2300 m)—Kyebaka (1400 m)—Choojom (1300 m), *H. Kanai & O. Tanaka*****—NICH 286809—+ *Pohlia elongata* and *Bartramia ithyphylla*. **New to Bhutan!** THAILAND. Payap: Chiangmai, Mt. Inthanon, ca. 1200 m alt., in dry deciduous forest, on soil, *Tagawa & Kitagawa 2557****—NICH 275037—+*Bryum argenteum*, *B. auratum* and *Funaria hygrometrica*. Lampang: Hill Tak, ca. 400 m alt., on wet charcoal, *R. S. 34*—Herb. Lugd. Bat. 20. Ind. Or. No. 964, 298-117 (L). **New to Thailand!** N. BORNEO. Kinabatangan distr.: near Bambulud Summit, Gomantong Caves Hill, 20 km

**** Specimens with four asterisks were collected by the members of "The Third Univ. Tokyo Bot. Exped. to E. Himalaya 1967."

S. of Sandakan, 200 m alt., on bank, trunk-base in poor forest, on shallow soil over limestone, *G. H. S. Wood 1482*—Herb. Lugd. Bat. 20. Ind. Or. No. 965,67-041 (L). **New to Borneo!**

Distribution: Indonesia, Bhutan, Thailand, and Borneo.

This moss is similar to *B. capillare* externally. But the leaves not contorted when dry, the leaf-border not at all or hardly differentiated, narrower lamina-cells, and smaller purple-red capsules are distinct.

93. ***Bryum recurvulum*** Mitt., l. c.: 74 (1859); Ochi, Adv. Front. Pl. Sci. 4: 118, pl. V (1963); in Hara, l. c. 558 (1966); Hikobia 5(1-2): 20, 24 (1967).

Specimens examined. THAILAND. Payap: Chiangmai, around the summit of Mt. Inthanon, 2100 m alt., on limestone in sparse wood, *Tagawa & Kitagawa 4290****—NICH 275065; ditto, ca. 6100 ft. alt., on limestone, *R. G. Robbins 3676*—Herb. Lugd. Bat. 20. Ind. Or. No. 968,302-306 (L).

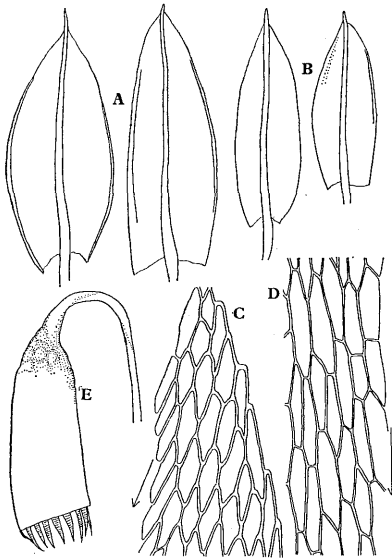


Fig. 53. *Bryum sandii* Doz. et Molk.: A. Stem-leaves, $\times 22$. B. Innovation leaves, $\times 22$. C. Upper part of leaf, $\times 200$. D. Lamina-cells in the median part, $\times 200$. E. Capsule (fairly much pressed), $\times 11$. Drawn from type (L).

New to Thailand! BHUTAN. Lingshi (3900 m)—Yale La (4600 m)—Shozu (3800 m), *Kanai, G. Murata, Ohashi, O. Tanaka & T. Yamazaki*****—NICH 286746 p. p.; Ratsoo (1850m)—Tzarza La (2600 m)—Sena Thang (2400 m)—Samtengang (1900 m), coll. ditto****—NICH 286754, 286758; Samtengang—Kyebaka—Choozom, *Kanai & Tanaka*****—NICH 286803, 286839. **New to Bhutan!**

Distribution: India, Nepal, Bhutan, Thailand, China, Formosa, and Japan.

94. ***Bryum salakense*** Card., Annuaire Cons. Jard. Bot. Genève 15-16: 166 (1912); Ochi, Hikobia 5(3-4): 166, 43 (1969).

Specimens examined. BHUTAN. Ritang (2400m)—Ratsoo (1850m), *Kanai, Murata, Ohashi, Tanaka & Yamazaki*****—NICH 286630; Tzatogang

(3000 m)—Dotanang (2500 m), coll. ditto***—NICH 286948. **New to Bhutan!**

Distribution: Indonesia, Formosa (Ochi, 1969), and Bhutan.

95. **Bryum sandii** Doz. et Molk., Musc. Frond. Archip. Ind. 4 (1844); Fleischer, Musci Fl. Buitenzorg. 2: 545 (1904). (Fig. 53)

Specimens examined. INDONESIA. Java: s. loc., *Korthals 106*—Herb. Lugd. Bat. 20. Ind. Or. No. 910,82-111—type (L); Herb. *Dozy & Molkenboer* s. num.—ditto No. 910,82-122 (L); Megamendonggebirge, *Kühl, van Hasselt* s. num.—ditto No. 910,82-113 (L); West-Java: am Gedeh bei Rarahan unterhalb Tjibodas auf Erde, 1350 m, Fleischer: M. Archip. Ind. ser. IV (1901), No. 168—ditto No. 910,82-121 (L); s. loc.—ditto No. 910,82-102 (L); vam Tjibodas, 1450 m—ditto No. 910,82-103 (L); in monte Magnedon, *Kühl* s. num.—ditto No. 910,82-104. N. BORNEO. West Coast Reserve: Mt. Kinabalu, above Park Cave, ca. 10,000 ft. alt., *W. Meijer B11,908*—Herb. Lugd. Bat. 20. Ind. Or. No. 965,31-011 (L). **New to Borneo!**

Distribution: Indonesia (Java), and N. Borneo.

96. **Bryum Soullii** Thér. et P. Vard. in P. Vard., Rev. Bryol. 47: 52, 4 (1920); Ochi, *Hikobia* 5(3-4): 170, 45 (1969).

Specimens examined. THAILAND. Udawn: Loey, Phu Kradung, ca. 1200 m alt., on moist rock in grass field, *Tagawa & Kitagawa****—NICH 275068; E. ridge of Mt. Phu Luang, ca. 1500 m alt., on sand in subshrubby field, *Tagawa & Kitagawa 1921****—NICH 275060; ditto, 1350 m alt., in evergreen forest, *F. Ploto 7415*—Herb. Lugd. Bat. 20. Ind. Or. No. 966, 248-588 (L). **New to Thailand!** (New to Asia!).

Distribution: E. Africa and Thailand.

97. **Bryum** (Rhodobryum) **homalobolax** C. Muell. ex Ren., Prodr. Bryol. Madagascar 167: 167 (1898). (Fig. 54)

Specimens examined. MADAGASCAR. Sud-Betsileo, Wald von Ankafina, *J. M. Hildebrand 2143* (BM, L). N. BORNEO. West Coast Reserve: Mt. Kinabalu, ca. 9000 ft. alt., ultrabasic area, *W. Meijer B10,262*—Herb. Lugd. Bat. 20. Ind. Or. No. 964,56-732 (L); ditto, above Kamaranga, 8000 ft. alt., *W. Meijer B11,891*—ditto No. 965,31-003 (L). **New to Borneo!** (New to Asia!).

Distribution: E. Africa, Madagascar, and N. Borneo.

This moss is very similar in plant and leaf size to *B. roseum*. But the leaves have a clearly differentiated yellowish border consisting of thicker-

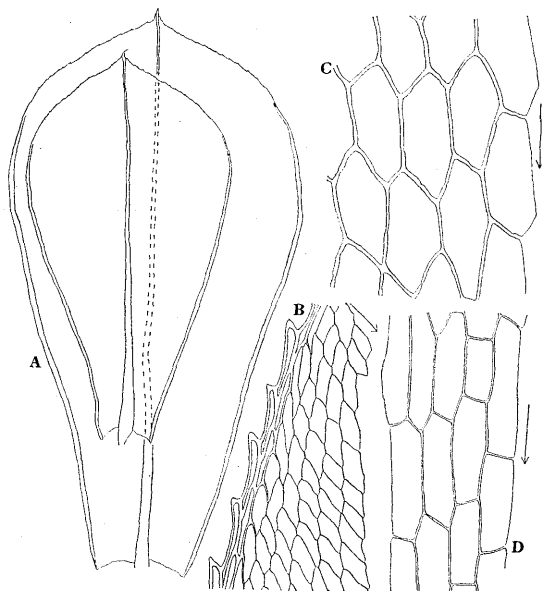


Fig. 54. *Bryum homalobolax* C. Muell.: A. Leaves, $\times 11$. B. Upper part of leaf, $\times 96$. C. Lamina-cells in the median part, $\times 200$. D. Ditto in the basal part, $\times 96$. Drawn from "Hildebrand 2143" (BM).

walled cells in two rows and have the serration which is far weaker than in *B. roseum*.

98. *Bryum* (*Rhodobryum*) **russulum** Broth. et Geh., Oefv. Finsk. Vet. Soc. Foerh. 40: 175 (1898). (Fig. 55)

Specimens examined. NEW GUINEA. Mt. Dayman, *W. Armit* jur. s. num.—type (ex Herb. Melbourne, H). N. BORNEO. West Coast Reserve: below Kamaranga, Morris Falls, 6500 ft. alt., *W. Meijer* B11,654—Herb. Lugd. Bat. 20. Ind. Or. No. 965,53-368 (L). **New to Borneo!** (New to Asia!).

Distribution: New Guinea and N. Borneo.

This moss is characterized in having the leaves with a border not very clearly differentiated and consisting of gradually longer and narrower cells in 4-5 rows at the margin, and with the serration rather slightly developed only near the apex. It looks like a member of the so-called "Rhodobryum"

group judging from the robust plants and large leaves, but, judging from the border and serration like a member of the so-called "Rosulata" group.

Acknowledgements

My deep gratitude to the following persons is acknowledged for aid in making available the specimens examined: Messrs. R. Ross and A. H. Norkett of British Museum (Nat. Hist.), London; Dr. (Sir) George Taylor of Herbarium and Library, Royal Botanic Gardens, Kew; Drs. H. Roivainen and T. Koponen of Botanical Museum, University of Helsinki; Professor C. G. G. J. van Steenis and Drs. A. Touw of Rijksherbarium, Leiden; Professor (Mme) S. Jovet-Ast of Muséum National d'Histoire Naturelle, Laboratoire de Cryptogamie, Paris; Professor A. Noguchi of Kumamoto University.

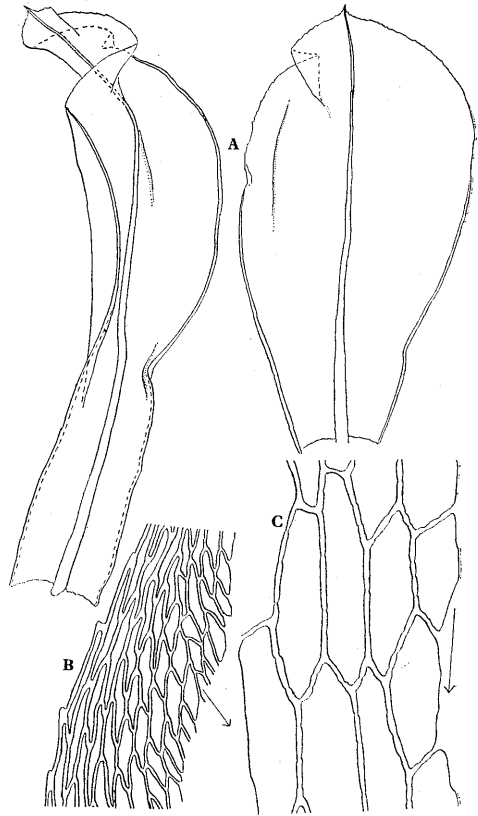


Fig. 55. *Bryum russulum* Broth. et Geh.: A. Leaves, $\times 11$. B. Upper part of leaf, $\times 96$. C. Lamina-cells in the median part, $\times 200$. Drawn from type (H).

Literature cited

- Ochi, H. (1967). Notes on moss flora V. *Hikobia* 5(1-2): 14-38, f. 21-33.
 — (1969). Ditto VI. l. c. 5(3-4): 153-171, f. 34-45.

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今回は、京都大学タイ国植物探検隊 (1965-66)、第三次東京大学 東部ヒマラヤ植物探検隊 (1967) の採品、ライデン植物標本館から同定依頼をうけたアジア各地からの

採品, および, 台湾台中市東海大学の王忠魁教授からの同定依頼品のうち, ヒョウタンゴケ科およびカサゴケ科の分布上めばしいもの, および, それらに関連する分類学上の問題についてのべる。

これらのうち, 89. *Pseudopohlia bulbifera* については少しくわしくのべる必要がある。本属には, アジアから 2 種, 中央アメリカから 1 種の計 3 種が従来知られているが, その外見も葉の形態もヘチマゴケ属 (*Pohlia*) とよく似ていて, 属としての区別が困難のように見受けられる。しかし, 比較的太くて直立する短頸のさく果は著しい特長を持っている。すなわち, 外さく歯は短かく, ヘチマゴケ属の 16 個に相当するものが 2 個ずつ対をなして結合して 8 個となり, その上部にさけ目があること, 内さく歯と間毛とが区別しにくく, 一様にその先端が糸状になることなどである。

フィリピン産の *P. bulbifera* と中国雲南省産の *P. yunnanensis* とは, それぞれタイプを調べてみても, ほとんど差がみつからないので, 当然同一種とすべきものである。また, インドやネパールから知られていた *Brachymenium microstomum* は, そのタイプは上記 2 種よりはかなり小さく, また, さく果が破損していて, さく歯の重要な特長が調べられなかったが, 他に多くの標本が得られ, また, 大きさには多くの移行形がみられるので, 同一種とみられる。本種は現在のところ, 南～東南アジアの温帯～亜熱帯種とみなされる。

91. *Bryum auratum* はアフリカから新しく知られ, 96. *B. Soulii* と 97. *B. homalobolax* および 98. *B. russulum* はアジアから新しく知られるものである。92. *Bryum gedeanum* と 95. *B. sandii* とは従来ジャワからのみしか知られていなかった。セン類には分布の広いものが非常に多いことがだんだんわかってくる。

□Department of Medicinal Plants, Thapathali, Kathmandu, Nepal: **Medicinal Plants of Nepal** Text 153 pp., 27 pls., Index 21 pp. 1970. Rs. 15. ネパールで用いられている薬用植物 393 種が解説され, その大部分はネパール産である。各植物のネパール名, 学名, 簡単な解説, 利用部分と用途, 分布, 代表的な産地が記されている。近年医薬原料植物をネパールに求める動きが目立ち, それについての問合せが多く寄せられていることが, この本を出版させた動機の一つである。Mrs. T. K. Rajbhandary によって約 650 の土名が学名と対比されており, 薬学関係者のみならず, ヒマラヤの植物の研究者にとっても有用であろう。巻末に主要な薬用植物の年間輸出货量を示したリスト及び学名の索引がある。本文の配列はネパール名のネパール語アルファベット順であり, ネパール植物名の ABC 順索引が無いので大変不便なものとなっているのが惜しい。またネパールでは同じ植物でも種族によって名前が異なるので, どの種族の名前かを示すことが必要だろう。入手希望の方は, 頭書の所へ申込みばよいが, 輸出価格は未定である。 (金井弘夫)