

NEW ADDITIONS OF BRYACEOUS MOSSES (MUSCI, BRYACEAE)  
TO THE ANTARCTIC FLORA

Harumi OCHI<sup>1</sup> and Hiroshi KANDA<sup>2</sup>

<sup>1</sup>Prof. Emer., Tottori University; present address: 743-9, Gyotoku-i, Tottori 680

<sup>2</sup>National Institute of Polar Research, 9-10, Kage 1-chome, Itabashi-ku, Tokyo 173

**Abstract:** *Bryum pallescens* SCHLEICH. ex SCHWAEGR. is recognized for the first time from the Peninsular site, Antarctica, based on a collection made by a U.S. botanist (NIPR 850409-002 ex NY). Furthermore, examining three duplicates named "*Bryum algens* CARD." from East Antarctica, it has been revealed that at least one of them (NIPR 870610-007, from Wilhelm II Land) belongs to *Bryum pseudotriquetrum* (HEDW.) GAERTN., MEYER et SCHERB., which is a new record to the region around the USSR base.

In order to clarify the moss flora of Antarctica, it is indispensable to collect well-developed plants repeatedly: those with sporophytes, at least with perichaetia or perigonia, or with gemmae or tubers. Observing in detail recently accumulated specimens in NIPR, the following new additions to the moss flora of the Continental Antarctic are recorded.

1. *Bryum pallescens* SCHLEICH. ex SCHWAEGR. (Fig. 1)

Specimen studied. ANTARCTICA. Antarctic Peninsula: Short Cut I., Anvers Island (64°47'S, 64°03'W), G. T. PRANCE (NY 28695. det. by W. C. STEERE as *B. stenotrichum*)—NIPR 850409-002 p.p., sterile + *Bryum* cf. *amblyodon* c. fr.

Plants up to 2 cm high, densely tufted, scarcely lustrous. Stems slender, soft, branched by 3–5 subfloral innovations; the head of main stems containing mostly an inconspicuous female perichaetium (including a few to several archegonia and paraphyses) and rarely a synoicous perichaetium (incl. a few archegonia, a few antheridia and paraphyses); in cases of providing 4–5 subfloral innovations on a single plant, upper, longer ones holding a female perichaetium, and lower, shorter ones a synoicous perichaetium. (No innovations holding a perigonium were so far observed.) Leaves ± flexuous, scarcely twisted and mostly erect when dry, erect-spreading when moist, soft, narrowly ovate or oblong to oblong-lanceolate, long-acuminate, narrowly recurved or revolute almost throughout except in the uppermost apical part, scarcely decurrent; costa strong, red in the basal part, rather abruptly thinner toward the tip and then long-excurrent with a slender, smooth tip. Cells thin-walled, rhomboid-hexagonal, mostly 55–70 × 14–18 μm, broader and more markedly rectangular in the basal part, narrowed toward the margin; rather indistinctly bordered with more elongate (very

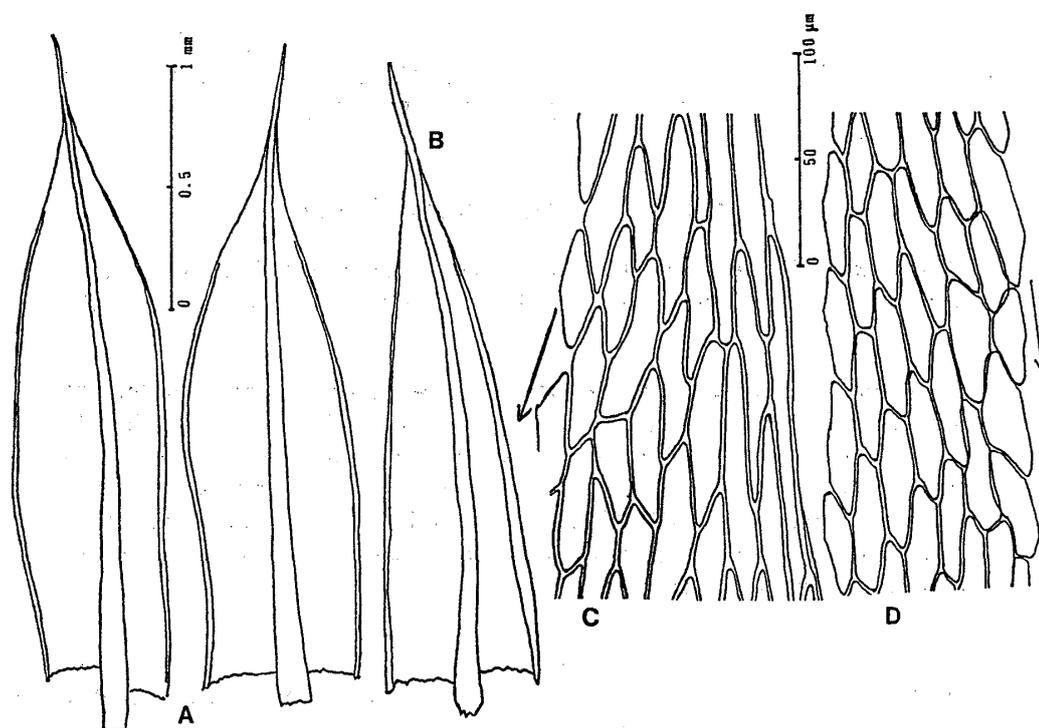


Fig. 1. *Bryum pallescens* SCHLEICH. ex SCHWAEGR. A: Leaves. B: Perichaetial leaf. C: Upper laminal cells. D: Median laminal cells. Drawn from NIPR 850409-002.

much more elongate in the uppermost part), narrower, scarcely thicker-walled cells in 3–4 rows.

The remarkable characters of *B. pallescens*, in sterile conditions to distinguish it from allied species growing at higher altitudes and latitudes, such as *B. algovicum*, *B. amblyodon*, *B. caespiticium*, *B. gayanum*, *B. pseudotriquetrum*, etc. are: rather soft, narrowly ovate- or oblong-lanceolate leaves with a very long-acuminate apex, scarcely decurrent base, narrowly recurved or revolute margins almost throughout except in the uppermost, acuminate apical part where it is plane and consists of very much elongate, scarcely thicker-walled cells. Furthermore, the particular sexuality observed in the present Antarctic material (the top of main stems and more elongate, upper longer innovations hold a female perichaetium, whereas lower, shorter innovations a synoicous one) could be noteworthy, because *B. pallescens* has been generally accepted as autoicous (SCHWAEGRICHEN, 1816). However, we can sometimes find such synoicous form of *B. pallescens* as in northern Europe (NYHOLM, 1958).

Considering these, the material cited above is concluded to be placed in the category of *B. pallescens* which is a new addition to the Antarctic moss flora. Judging from the fact that *B. pallescens* has been known to occur in the Falkland Islands (OCHI, 1982), and that a similar material was collected from Deception Island, the South Shetland Islands by R. COVARRUBIAS (Univ. de Chile, MAHÚ No. 21968, duplicates in NIPR & H.O.), its occurrence there is not surprising.

2. *Bryum pseudotriquetrum* (HEDW.) GAERTN., MEYER et SCHERB. (Fig. 2)

Specimen studied. ANTARCTICA. East Antarctica, Wilhelm II Land, Gaussberg: at the foot of the mountain, among talus; leg. S.A. EVTEEB (ex-Inst. Bot. Acad. Sc. URSS 6/203, det. by Z. N. SMIRNOVA as *B. algens* CARD.)—NIPR 870610-007.

Variability of this moss was repeatedly discussed, especially with sterile material collected at higher latitudes including Antarctica (OCHI, 1970, 1979, 1982). A total of three duplicate specimens (named *B. algens*) collected from the region around USSR base were brought for the present study. But the two (NIPR 870610-008 from Banger Hills, and 870610-009 from Oases Gatefa) other than cited above were so poor in plant development that we have not yet determined the species. On the stems of the specimen cited firstly above, however, the following characters of *B. pseudotriquetrum* are observed, although no sex organs are seen.

Leaves ovate or oval, short-acuminate, usually with  $\pm$  apiculate apical part where a few characteristic crenulae are occasionally seen, and mostly with a distinctly decurrent, broad base in well-grown plants: costa strong, mostly short-excurrent; margins almost plane or slightly reflexed in the basal part; border indistinct to rather distinct, in the latter case it consists of more elongate, narrower cells in 1–3 rows.

Judging from the characters cited just above, the plants of the specimen observed appear to be in the similar stage of development to a syntype of *Webera gerlachei*

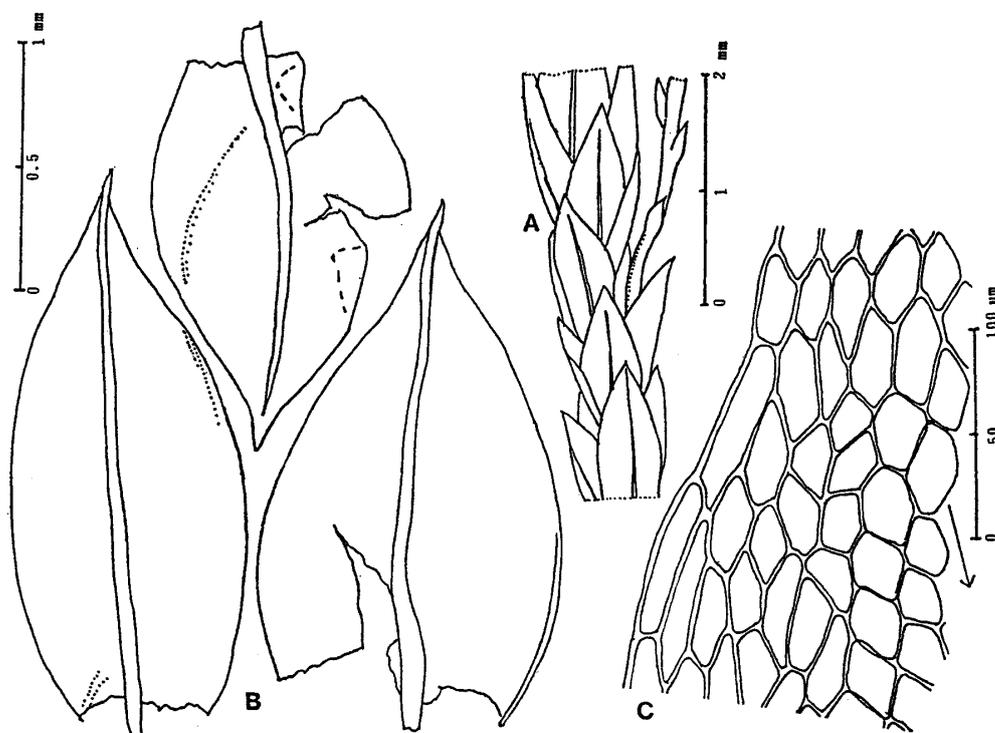


Fig. 2. *Bryum pseudotriquetrum* (HEDW.) GAERTN., MEYER et SCHERB. A: Part of plant with flagella-like branchlet in wet habit. B: Leaves. C: Upper laminal cells. Drawn from NIPR 870610-007.

CARD., "RACOVITZA 229a" (H) which was collected from "Canal de Gerlache, Antarctica" (OCHI, 1970).

#### References

- NYHOLM, E. (1958): Illustrated moss flora of Fennoscandia. II. Musci, fasc., 3, 243–245. *Lund*.
- OCHI, H. (1970): A revision of the subfamily Bryoideae in Australia, Tasmania, New Zealand and the adjacent islands. *J. Fac. Educ. Tottori Univ. Nat. Sci.*, 21, 7–67.
- OCHI, H. (1979): A taxonomic review of the genus *Bryum*, Musci in Antarctica. *Mem. Natl. Inst. Polar Res., Spec. Issue*, 11, 70–80.
- OCHI, H. (1982): A revision of the Bryoideae (Musci) in southern South America. *J. Fac. Educ. Tottori Univ. Nat. Sci.*, 31, 11–47.
- SCHWAEGRICHEN, F. (1816): *Species Muscorum*. Suppl., 1(2), 107–109, pl. 75. *Lipsiae*.

(Received May 30, 1990; Revised manuscript received August 4, 1990)