

William J. HOE* & Hiroshi INOUE** : **Bryophytes of the Gilbert Islands (Micronesia) collected by Dr. D. Herbst**

W. J. ホーエ*・井上 浩** : Dr. D. Herbst 採集のギルバート
諸島産蘚苔類について

There has been, within the past fifteen years, a renewed interest in the bryoflora of the Micronesian Islands. As a result of the publications by H. A. Miller (see Miller et al. 1963 for bibliography), a reasonably complete understanding of the distribution of mosses and liverworts in the Micronesian area is now emerging. One group of islands, the Gilbert, however, has largely been ignored.

Between Aug. 6-16, 1972, Dr. Derral Herbst of the Pacific Tropical Botanical Gardens, accompanied by Mr. J. Allerton, botanized in the Gilbert Islands and collected a number of bryophytes from Tarawa and Butaritari Atolls. Miller (1960) and Miller et al. (1963) listed from the Gilberts 8 species of mosses in six genera; this total may now be increased to 12 species in eight genera. Hepatics, previously unrecorded, are now known to be represented by three taxa.

For the following systematic and distributional treatment, the mosses were identified by the first author, who has retained a complete set of the collections, while the co-author identified the hepatics. A nearly complete set is at TNS; representative sets have been deposited at B, BISH, MICH, MO, NICH, U, US. All collection numbers are those of Herbst and Allerton; previously reported Micronesian distribution is from Miller et al. (1963).

Mosses

Leucophanes smaragdinum (Mitt.) Par., Ind. Bryol. 3: 59 (1896). Butaritari Isl., Banaki area, abundant on rotten logs and base of coconut trees, nos. 2777.0, 2779.5. For the Gilberts, previously reported only from Little Makin. In Micronesia it is also known from the Caroline and Marshall Isls.

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as well as Guam Isl.

Calymperes dozyanum Mitt., Journ. Linn. Soc. Bot. suppl. 1: 42 (1859). Butaritari Isl., Banaki area, on wet soil, no. 2778.2. In the Gilberts, known only from this island. In Micronesia it is also reported from the Caroline and Marshall Isls.

C. hyophilaceum C. Müll. ex Besch., Ann. Sci. Nat. Bot. ser. 8, 1: 265 (1896). Butaritari Isl., Banaki area, on rotten logs and base of coconut trees, nos. 2777.2, on trunks of coconut tree, no. 2779.6; Bairiki Isl., on base of coconut trees, no. 2687.0. Previously unreported from the Gilberts, although known in Micronesia from the Caroline and Marshall Isls.

C. molleyi Mitt. in Doz. et Molk., Bryol. Jav. 1: 48 (1856). Butaritari Isl., Banaki area, on logs or base of coconut tree, no. 2777.1. Not previously recorded from the Gilberts, although known from Caroline and Marshall Isls.

C. tenerum C. Müll., Linnaea 37: 174 (1872). Butaritari Isl., near Uki-angang Village, on sandy soil, 2784.1, on coconut tree trunk, no. 2785.0; Bikenibeu Isl., ocean side of island, abundant on base of coconut trees, nos. 2677.0, 2679.0; Tabiteuea Isl., at base of coconut tree, no. 2684.1; Bairiki Isl., base of coconut tree, no. 2687.1. In the Gilberts previously reported only from Butaritari Isl., although apparently very common in the Caroline and Marshall Isls. Occasional plants from no. 2684.1 possess propaguliferous leaves exhibiting the blunt, expanded apex of the var. *edamense* Fl.

Hyophila beruensis Dix., Journ. Bot. 65: 255 (1927). Butaritari Isl., near Kuma Village, abundant in shaded, moist areas on sandy lagoon soil and roadbed, no. 2794.0; Tabiteuea Isl., on rocks and sandy soil, lagoon side of island, nos. 2685.0, 2685.1; Bairiki Isl., on sandy soil and rocks near center of island, no. 2686.0. Previously recorded only from Beru and Onotoa for the Gilberts as well as the Carolines.

Brachymerium indicum (Doz. et Molk.) Besch. et S. Lac. in Doz. et Molk., Bryol. Jav. 1: 141 (1860). Bikenibeu Isl., common on sand flats and soil, lagoon side of island, no. 2685.1; Bairiki Isl., on rocks and soil, nos. 2687.3, 2688.0. One of the most wide-spread moss taxa in the Gilberts, having previously recorded from Abemana, Beru, Little Makin, Onotoa, and Tarawa. In Micronesia it is also known from the Marshall Islands.

B. melanothecium (C. Müll.) Jaeg., Berlin S. Gall. Naturw. Ges. 1873-74: 114 (1875). Butaritari Isl., Banakai area, on wet soil, lagoon side of island, no. 2778.1, near Kuma Village, on shaded, moist, sandy lagoon and roadbed, no. 2794.1; Bairiki Isl., on rocks and soil, no. 2687.2. In the Gilberts previously known only from Onotoa, in Micronesia known also from the Caroline Isls.

Bryum nitens Hook., Icon. Pl. Rar. t. 19, fig. 6 (1837). Butaritari Isl., Banaki area, abundant on wet soil on lagoon side of island, no. 2778.0, Butaritari Village area, on sandy soil, no. 2789.1. Not previously known from the Gilberts although in Micronesia earlier reported from the Caroline and Marshall Isls.

Trichosteleum pygmaeum Bartr., Bishop Mus. Occ. Pap. 10: 9 (1944). Butaritari Isl., Banaki area, rotting logs and base of coconut tree, nos. 2777.3, 2779.0, Butaritari Village area, on coconut trunk, no. 2788.1. Previously reported only from the Tuamotu Archipelago of eastern Polynesia. The plants in all of the above collections are characterized by their small size, thick, carpet-like habit, dull, yellow-green color, strongly falcate leaves, short (ca. 5 mm), smooth setae, and small (0.5 mm long) capsules. The upper leaf-cells are nearly rhomboidal, have 2-4 large papillae over each lumen, and are somewhat obscured toward the apex.

Miller (1960) recorded four species of *Trichosteleum* in Micronesia: *T. carolinarum* Dix., *T. elegantissimum* Fl., *T. hamatum* (Doz. et Molk.) Jaeg., and *T. grosso-papillatum* Broth. The last-named is now *Acanthorrhynchium grosso-papillatum* (Broth.) Fl. (Index Muscorum, vol. 5, 1969) which van Zanten (1964) regarded to be merely a form of *A. papillatum* (Harv.) Fl.; it is characterized by (Bartram, 1939), among other features, a long (3-3.5 cm), smooth seta, a capsule 1.6 mm long, and leaf-cells with a single papilla. As compared with *T. carolinarum* Dix., it lacks the "broadly and shortly subulate, quite entire leaves" (Dixon, 1943); it is quite distinct from *T. elegantissimum* Fl. which possesses erect or slightly curved leaves and seta coarsely papillose above. *T. hamatum* (Doz. et Molk.) Jaeg., although widespread throughout the Pacific area and notoriously variable, seems at least to be characterized by a seta 1 cm long or longer which is roughened above. The Herbst collections can therefore be seen to differ markedly from the previously recorded *Trichosteleum* species in Micronesia and compare well

both the type description and identified materials of *T. pygmaeum* Bartr.

Ectropothecium monumentorum (Duby) Jaeg., Adumbr. 2: 523 (1877-78). Butaritari Isl., near Ukiangang Village, on wet, sandy soil, lagoon side of island, no. 2784.0, Butaritari Village area, on sandy soil, no. 2789.0; Tabiteuea Isl., on ground at base of coconut tree, no. 2684.0; Bairiki Isl., on sandy soil, no. 2688.1. In the Gilbert Isls. also previously reported from Marakei and Tabiteuea Atolls; in Micronesia also known from the Caroline and Marshall Isls.

Hepatics

Lopholejeunea subfusca (Nees) Steph., Hedwigia 29: 16 (1890). Butaritari Isl., Banaki area, on trunk of coconut tree, no. 2779.0. From Micronesia previously recorded from the Caroline and Marshall Isls.; new to the Gilberts.

Spruceanthus marianus (Gott.) Mizut., Journ. Hattori Bot. Lab. 29: 290 (1966) = *Archilejeunea mariana* (Gott.) Steph., Spec. Hepat. 4: 729 (1911). Butaritari Isl., Banaki area, on trunk of coconut tree, no. 2779.1. Previously reported from the Caroline and Marshall Isls. in Micronesia; new to the Gilberts.

Lejeunea borneensis Steph., Spec. Hepat. 5: 769 (1915) = *Lejeunea aloboides* Mill., Whit. et Bonn., Nova Hedwigia, beih. 11: 59 (1963) = *Lejeunea boninensis* Horik., Journ. Sci. Hiroshima Univ. ser. b, 2, 1: 24 (1931). Butaritari Isl., Banaki area, on trunk of coconut tree, no. 2779.3, Butaritari Village area, on trunk of coconut trees, nos. 2788.0, 2790.0. New to the Gilberts; in Micronesia reported from the Caroline and Marshall Isls.

The Herbst collections of Gilbert Islands bryophytes have added four moss species in two genera and three species and general of hepatics to the known flora of these islands, as well as provided the basis for numerous new atoll and island records. Only *Splachnobryum pacificum* Dix., known only from a single collection, was not obtained among the Herbst collections. With once exception, all taxa listed in this paper have been reported earlier from the Micronesian area, and may therefore be regarded as reasonable range extensions. The surprising find of *Trichosteleum pygmaeum* Bartr. is, however, not without precedent; Whittier (in Miller et al., 1963) included

in the Micronesian atoll moss flora *Calymperes aongstroemii* Besch., *C. moorei* Bartr., and *C. tuamotuense* Bartr., all of which exhibit a similar distribution.

We thank Dr. Derral Herbst for making available his collections and Dr. P. van Royen (BISH) for the loan of many comparative materials. Mrs. Terabata Groves and Dr. K. Luomala helped with the names of some islands.

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ギルバート諸島はミクロネシアの東南部を占める位置にあり、主としてサンゴ礁からなる小さな島々の集りである。この諸島の蘚苔類はまだよく分っていないが、Dr. D. Herbst の採集により総計 14 種が確認された。このうち、半数の 7 種がギルバート諸島から新しく知られるもので、とくに苔類 3 種はギルバート諸島における最初の苔類の記録となる。いずれの種類もミクロネシアの他の諸島（例えばカロリン、マーシャル群島など）からは記録されている。今回の採集品の中の植物体はいずれも小形のもので多く、ココヤシの樹幹、岩上などにへばりつくようにして生育するものが多い。

□K. Nisizawa et al.: **Proceedings of the Seventh International Seaweed Symposium.** i-xvi+646 pp. University of Tokyo Press 1972. 1971 年 8 月に日本で開催された第 7 回国際海藻学会議の講演集である。目次、前文、本文、著者索引、用語索引、種名索引および参加者リストからなる。本文は特別講演 4 篇のほかに、一般講演 131 篇を含む。一般講演は、I) 分布、分類と形態、II) 生態と応用、III) 生理と培養、IV) 化学、生化学と応用の 4 部門に分けて採録されてある。なお淡水藻についての講演もかなり含まれる。藻類に興味をもつ方や藻類の養殖や加工、あるいは薬用などの実際に関係をもつ方達には有用の書である。東京都文京区本郷、東京大学内、東京大学出版会。定価 10,000 円。なお同国際会議参加登録者には無料で頒布される。
 (千原光雄)