Dactylophorella muricata (Gottsche) R. M. Schust. (Marchantiophyta, Family Lejeuneaceae), a Genus and Species Record New to Liverwort Flora of Taiwan

棘鱗蘚(地錢門，細鱗蘚科)，臺灣蘚類植物誌新紀錄屬、種

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Abstract

Dactylophorella muricata (Gottsche) R. M. Schust. is reported as a genus and species record new to liverwort flora of Taiwan. *Dactylophorella* R. M. Schuster is a monotypic genus, with *D. muricata* known from Sumatra, Java, Celebes, Sabah and the Philippines. The previously known northernmost locality for the genus *Dactylophorella* and for *D. muricata* were Luzon, the Philippines. As for the locality recorded here in Taiwan, Orchid Island (22°04'39" N, 121°30'36" E) is the northernmost locality for this genus and species. A morphological description, illustration, habitat and specimens examination of *D. muricata* are provided in this study.

摘 要

棘鱗蘚(新擬中名)爲臺灣蘚類植物誌新紀錄屬、種。棘鱗蘚屬(新擬中名)爲一單種屬，只有棘鱗蘚，分布於蘇門答臘、爪哇、西里伯斯、沙巴及菲律賓等地區。過去已知棘鱗蘚屬及棘鱗蘚最北的分布地點爲菲律賓的呂宋島。棘鱗蘚在臺灣的分布地點蘭嶼(北緯 22°04'39", 東經 121°30'36")爲本屬之最北分布地點。文中提供形態描述、圖版、棲地及引證標本等。

Key words : *Dactylophorella*, Lejeuneaceae, liverwort, Taiwan

關鍵詞：棘鱗蘚屬、細鱗蘚科、蘚類、臺灣。

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Introduction

Dactylophorella R. M. Schuster is a monotypic genus, with *D. muricata* (Gottsche) R. M. Schust. known from Southeast Asia (Schuster 1980). Our recent studies on the Lejeuneaceae of Taiwan have shown that *D. muricata* is a genus and species record new to liverwort flora of Taiwan.

Taxonomic Treatment

Dactylophorella R. M. Schust. in Phytologia 45: 427. 1980. 棘鱗蘚屬

Plant minute, vigorous, creeping on substrate. Stems irregularly branched, cross-section of the stem with 7 cortical cells and 5–8 medullary cells, cell walls ± leptodermous. Leaves contiguous to loosely imbricate, lobes lobulate, triangular-ovate, margin densely muricate-spinous toothed; lobule inflated, free margin involute, apical tooth unicellular, straight or slightly curved. Ocelli absent. Underleaves bi-lobed, lobes erect, sinus U-shaped, strongly muricate-spinous toothed, margin recurved. Dioecious. Androecea briefly spiked, on short lateral branches, male bracts up to 7 pairs. Gynoecia on lateral branches; bracts, bract lobules and bracteole all with ciliolate-spinose margins; perianth obovate, with 5 keels, keels densely muricate-spinous toothed at margin (Herzog 1934; Schuster 1980).

A monotipic genus, represented by *D. muricata*.

Dactylophorella muricata (Gottsche) R. M. Schust. in Phytologia 45: 427. 1980.

Lejeunea muricata Gottsche in Gott., Lindenb. & Nees, Syn. Hepat. 348. 1845.

Drepanolejeunea muricata (Gottsche) Schiffn. In Engler & Plantl, Nat. Pfl.-fam. I, 3:126. 1895.

棘鱗蘚 Fig. 1

Descriptions:

Plant minute, yellowish brown in herbaria. Stems 3–5 mm long, 39–60 μm in diameter, with leaves 0.2–0.3 mm wide, irregularly branched; cross-section of the stem with 7 cortical cells and 5–8 medullary cells, cell walls leptodermous. Leaves contiguous to loosely imbricate, obliquely spreading, ovate-triangular in outline, ca. 0.3 mm long, and ca. 0.1 mm wide; margin densely muricate-spinous toothed; marginal cells 19–30 × 9–11 μm; median cells 19–22 × 15–22 μm; basal cells 32–45 × 17–26 μm, thin walled, without trigone and intermediate thickening; cuticle smooth. Ocelli absent. Leaf-lobule ovate, inflated, 2/5–1/2 as long as the lobe; free margin involute; apex constricted; apical tooth unicellular, obtuse, straight or slightly curved; keel arched. Underleaves distant, subtransversely inserted, 0.11–0.15 mm long, 0.12–0.14 mm wide; lobes erect, with strongly muricate-spinous teeth, sinus U-shaped, margin recurved. Sexual reproductive organs not seen.

Habitats:

Epiphyte in hardwoods forests, growing on boulders, rocks, tree roots, trunks, branches, or creeping on other bryophytes in the filtered or shade environment (Herzog 1934; Mizutani 1970, 1977).

Distribution:

Sumatra, Java, Celebes, Sabah and the Philippines (Herzog 1934; Mizutani 1970, 1977). New to Taiwan.

Specimens examined :

Taitung County: Hsiaotienchih (小天池) , Orchid Island, on rocks with thin layer of soil, mixed with *Fissdens* sp., at 150 m in elevation, 22°04'39" N, 121°30'36" E, 23 Jul. 1997, *Chi-Da Wu et al. 1897a* (**TAIE**, **TUNG**).

Remarks:

Genus *Dactylophorella* was separated from genus *Drepanolejeunea* by Schuster in 1980. It is different from *Drepanolejeunea* in (a) lobulate dorsal lobes; (b) leptodermous stem cells, the medullary in 5–8 rows; (c) under-leaves with erect, strongly spinulose lobes, the sinus U-shaped with reflexed margins; (d) apparent lack of ocelli (Schuster 1980). *Drepanolejeunea dactylophora* (Nees) Schiffn., with densely toothed leaf margins, is easily confused with *Dactylophorella muricata*, which differs in its bifid underleaves with entire margin and leaf lobe usually with 3–4 ocelli.

Based on woody plants, Orchid Island has a closer relationship with the Philippines than with Taiwan proper (Chang 1986). In accordance with Takhtajan's global floristic system, Orchid Island is assigned to the Philippinean Province of the Paleotropical Kingdom, and an analysis of vescular plants from Orchid Island shows that roughly 56% of the species are tropical elements (Hsieh 2002). The new record of this species well supports the phytogeographic affinity of the flora between the Orchid Island and the Philippines.

The previously known northernmost locality for the genus *Dactylophorella* and for *D.*

muricata were Luzon, the Philippines (Mizutani 1977). The locality recorded here in Taiwan, Hsiaotienchih (22°04'39" N, 121°30'36" E), Orchid Island, is the northernmost locality for this genus and species.

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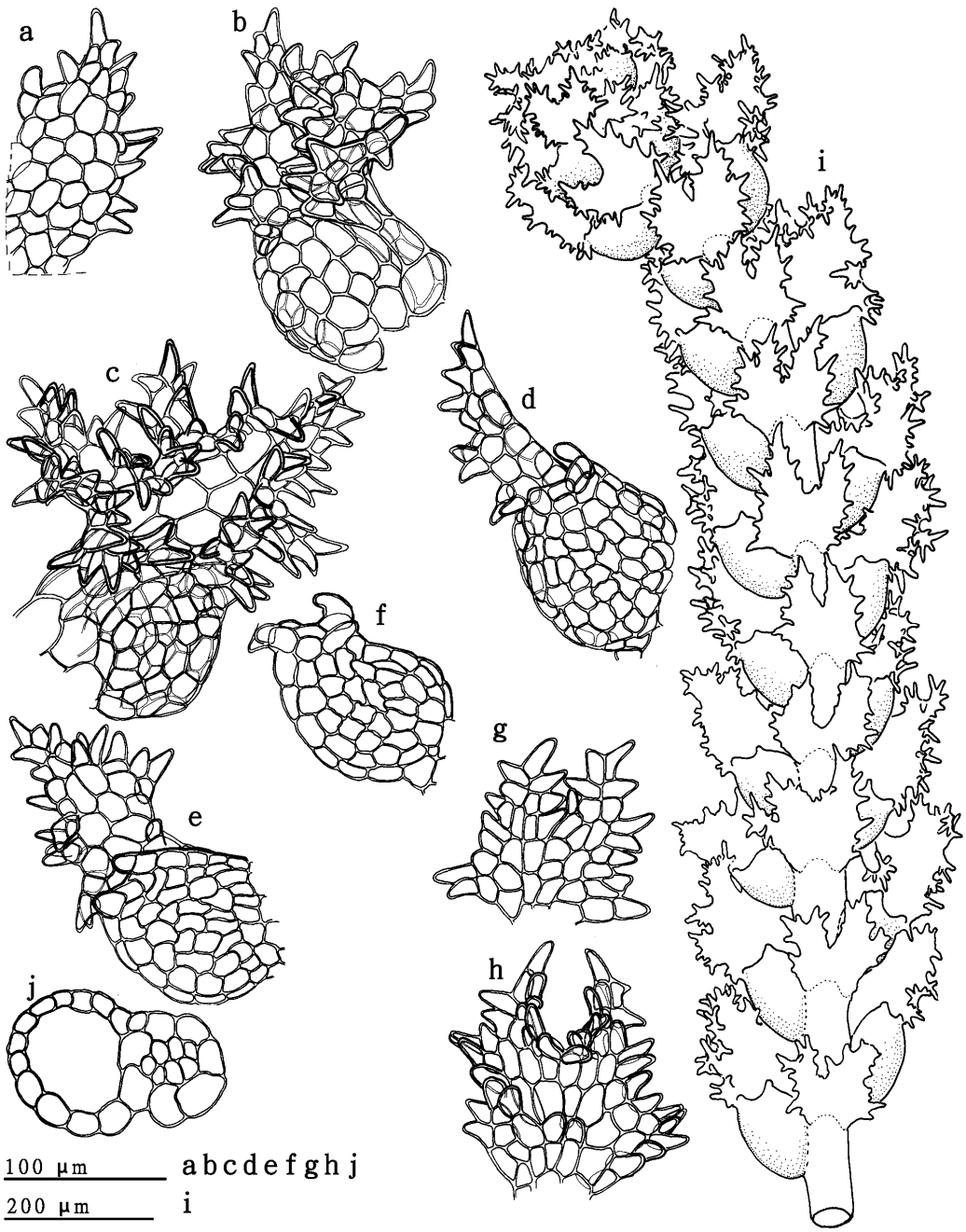

Fig. 1. ***Dactylophorella muricata*** (Gottsche) R. M. Schust. a. Cells of leaf lobe, dorsal view. b–e. Leaves, ventral view. f. Leaf lobule. g, h. Underleaves. i. Portion of sterile plant, ventral view. j. Transverse section of stem. (All drawn from *Chi-Da Wu et al. 1897a*).