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Dasycladus vermicularis (Scopoli) Krasser (Chlorophyta, Dasycladales, Dasycladaceae), a New Record in Taiwan

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ABSTRACT: A species of green algae, *Dasycladus vermicularis* (Scopoli) Krasser, was found at Che-cheng coast of southern Taiwan. The appearance of this genus and its species is new to Taiwan. In this paper, the morphology, habitat, ecology and phytogeography of this species are described and discussed.

KEY WORDS: ***Dasycladus vermicularis*, Chlorophyta, Dasycladaceae, New record, Taiwan.**

INTRODUCTION

A green algae, *Dasycladus vermicularis* (Scopoli) Krasser, was found at southern coast of Taiwan in April of 2005. *D. vermicularis* belongs to Phylum Chlorophyta, Class Ulvophyceae, Order Dasycladales, Family Dasycladaceae (Guiry, 2006). According to the record of marine algal flora in Taiwan, there are 3 genera and 5 species in Dasycladaceae, namely *Bornetella nitida, Bornetella spherica, Cymopolia van-bosseae, Neomeris annulata, and Neomeris van-bosseae* (Chiang, 1973; Lewis and Norris, 1987; Chiang et al., 1985, 1990; Huang, 1990, 1998; Lewis, 2000; Wang and Chiang, 2001). In this study, we report *D. vermicularis* as a new record to Taiwan. The description of this species is given herewith.

MATERIALS AND METHODS

The specimens were collected from the intertidal rocks of Che-cheng, southern Taiwan, in April of 2005. Specimens were preserved in 10% formalin in seawater, or mounted in herbarium. Cross-sections were made by a cryostat microtome using OCT compound (Tissue-Tek, USA) as the inclusion liquid, a formulation of water-soluble glycols and resins solidifying at temperature below -10℃. Sections of 50 μm thick were obtained from frozen samples and prepared for observations under a light microscopy. Voucher specimens are kept in the herbarium of National Taiwan Museum (NTM).

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RESULTS

Dasycladaceae Kűtzing, 1843
Dasycladus C. Agardh 1828

Dasycladus vermicularis (Scopoli) Krasser in Beck & Zahlbruckner 1898 Figs. 1 & 2

Spongia vermicularis Scopoli
Conferva clavaeformis Roth
Fucus vermicularis Bertoloni
Myrsidium bertolonii Bory de Saint-Vincent
Dasycladus clavaeformis (Roth) C. Agardh
Dasycladus cylindricus Meneghini ex Kutzing

Material HG-095040022 (April 16, 2005), found on the coast of Che-cheng, Pingtung County, southern Taiwan. It occurs in large clusters on upper intertidal coral reef or in shallow tide pools.

Specimens are olive green, club-shaped, unbranched, erect and slightly bended, 2-4 cm high, 0.4-0.5 cm in diameter, spongy and slightly calcified. In cross section, the cells branched in a whorls manner from a calcified central axis, and they branch, forming ramifications up to the third order. The central axis cell has a diameter of about 500-900 μm, tightly packed by whorls of 10-12 trichotomously (or dichotomously) branched laterals.

Fig. 1. Habit of *D*asycladus *vermicularis*.

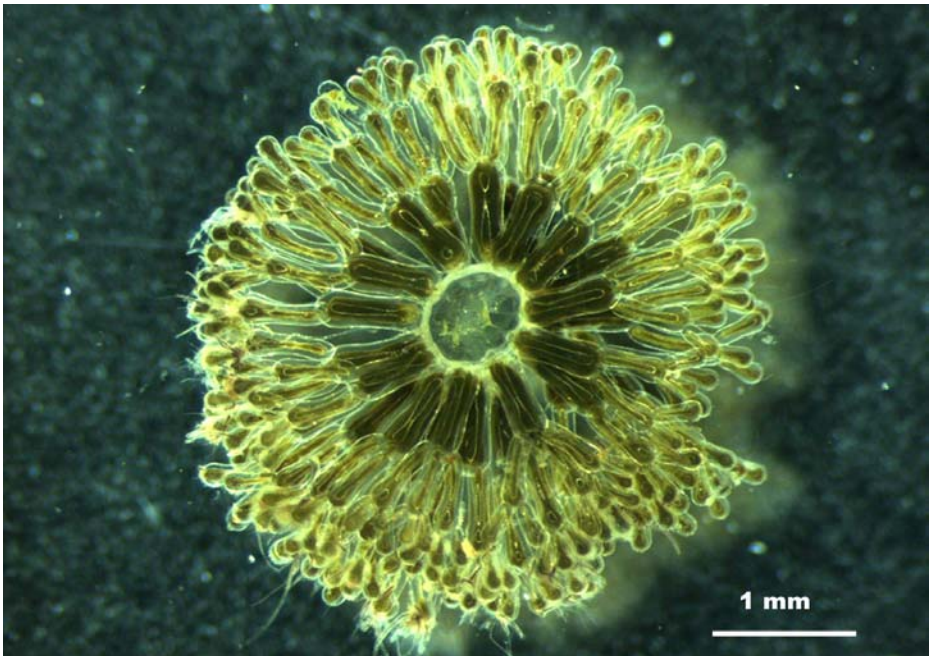

Fig. 2. Transverse section of *D. vermicularis*.

DISCUSSION

The morphology of *D. vermicularis* specimen studied here is identical to the type specimens described by Beck and Zahlbruckner (1898). According to the phytogeographical records, this species is widely distributed from tropical to temperate sea, including Japan (Yoshida, 1998), Philippines (Silva et al., 1987), Florida (Taylor, 1960), Belize (Littler and Littler, 1997), Caribbean Islands (Littler and Littler, 2000), Bahamas (Taylor, 1960), Cuba (Taylor, 1960), Jamaica (Taylor, 1960), Brazil (Taylor, 1960), Africa (Gallardo et al., 1993), and Canary Islands (Haroun et al., 2002). It grows on upper intertidal rocks and can endure the strong UV-radiation (Pérez-Rodríguez et al., 1998). For the first time this species was found in Taiwan.

It is well known that water temperature and current are the principal factors regulating the geographical distribution of marine algae (Lobban et al., 1985). Chiang (1973) had pointed out that marine flora in northern Taiwan was distinct from its southern counterpart due to the influence of the warm Kuroshio Current. This current brings warm water from the Philippines and the equatorial region toward southern Taiwan (Chu, 1971; Chern and Wang, 1990). Presumably, it is the main factor causing the occurrence of *D. vermicularis* in southern Taiwan.

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臺灣新紀錄種海藻－蠕形絨枝藻（綠藻植物門，絨枝藻目，絨枝藻科）

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摘　　要

本報告描述 2005 年 4 月在南臺灣的車城潮間帶發現的一種海產綠藻－蠕形絨枝藻 *Dasycladus vermicularis* (Scopoli) Krasser。這是臺灣的新紀錄種，此藻屬也是首次在臺灣發現的新紀錄屬。本報告除了描述此新記錄種的形態特徵及棲息生態之外，並討論該種的植物地理分佈。

關鍵詞：蠕形絨枝藻、綠藻植物門、絨枝藻科、新紀錄種、臺灣。

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