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Dasycladus vermicularis (Scopoli) Krasser: a new record for Taiwan (Chlorophyta, Dasycladales, Dasycladaceae)

臺灣的一新記錄種海藻，蠕形絨枝藻（綠藻植物門，絨枝藻目，絨枝藻科）

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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.

摘要

本報告描述於 2005 年 4 月在南臺 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 的新記錄種，此藻屬也是首次在臺 新發現的新記錄屬。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，新記錄種，臺 。

Introduction

On April 2005, a green algae, *Dasycladus vermicularis* (Scopoli) Krasser, was found at southern coast of Taiwan. *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 & Norris, 1987; Chiang et al, 1985, 1990; Huang, 1990, 1998; Lewis, 2000; Wang & Chiang, 2001). In this study, we report hear *D. vermicularis* as a new record in Taiwan. The description of this species is given herewith.

Materials and Methods:

The specimens were collected from the intertidal rocks of Che-cheng (車城), southern Taiwan, on April 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).

Results

Dasycladaceae **Kűtzing, 1843**

***Dasycladus* C. Agardh 1828**

***Dasycladus vermicularis* (Scopoli) Krasser in Beck & Zahlbruckner 1898**

(Figs. 1, 2)

Synonym:

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 examined:

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

Morphological description:

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.

Discussion

The morphology of *D. vermicularis* specimen studied here is identical to the type specimens described by Beck & 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 seem to be 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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Fig. 1. Habit of *D*asycladus *vermicularis*.

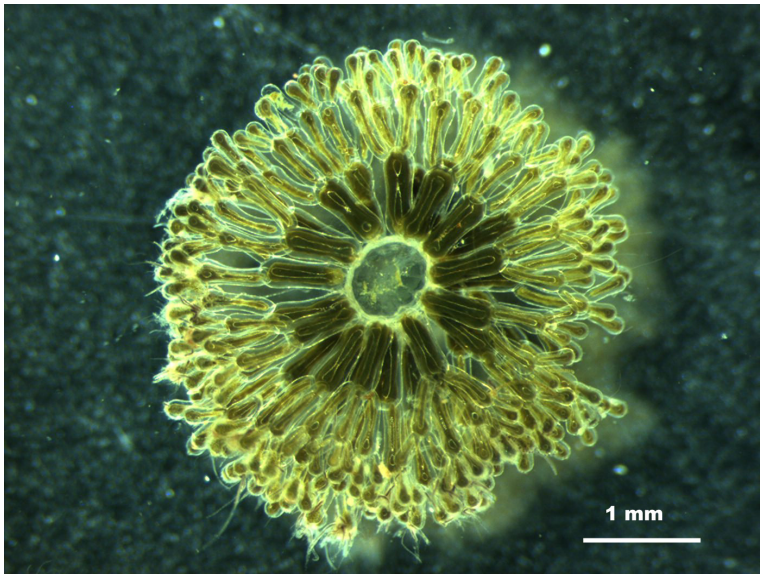

Fig. 2. Transverse section of *D. vermicularis*.