Occurrence of a Pelagic Pteropod *Diacavolinia bandaensis* van der Spoel, Bleeker & Kobayasi, 1993 (Gastropoda: Cavoliniidae) in Nearshore Waters of Northwestern Taiwan

台灣駝蝶螺科翼足動物新紀錄種班達駝蝶螺 *Diacavolinia bandaensis* van der Spoel, Bleeker & Kobayasi, 1993

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Abstract

Diacavolinia bandaensis van der Spoel, Bleeker & Kobayasi, 1993, a pelagic cavolinid pteropod which has been known only from the Banda Sea, Indonesia, is reported herein as a species newly recorded to coastal waters of the northwestern Taiwan. The morphological differences to its related congeneric species as well as its distribution are discussed.

摘　要

本文描述一種原分布地局限於印尼班達海域(Banda Sea, Indonesia)駝蝶螺科翼足動物 *Diacavolinia bandaensis* van der Spoel, Bleeker & Kobayasi, 1993 (班達駝蝶螺)之台灣新紀錄。有關此種與同屬近似種間之形態差異與此種之分布問題，一併於本文中討論。

Key words: new record, cavolinid pteropod, *Diacavolinia bandaensis*

關鍵詞：台灣新紀錄、駝蝶螺、*Diacavolinia bandaensis*

Received: April 15, 2005 Accepted: June 29, 2005

收件日期：94年4月15日 接受日期：94年6月29日

Pelagic mollusks in the vicinity waters of Taiwan were sporadically studied in the past few decades (Zhang 1964, 1966; Dai 1989; Huang *et al*. 1993; Hsueh 1995; Ling 1999) with a total of 67 species and subspecies (mostly pteropods) that have been reported so far (Zhang 1964, 1966; Dai 1989; Huang *et al*. 1993; Hsueh 1995; Ling 1999). In our recent zooplankton study in the nearshore waters of northwestern Taiwan, a specimen of *Diacavolinia bandaensis* van der Spoel, Bleeker & Kobayasi, 1993, an unrecorded species of pelagic cavolinid pteropods (Gastropoda: Cavoliniidae), was collected. The species was originally known only from the Banda Sea, Indonesia (van der Spoel *et al*. 1997). Finding of this species in the West Pacific, particularly in the nearshore waters environment as compared to open oceanic environments, provides interesting information on the zoogeographic distribution of the species.

The specimen of *D. bandaensis* collected in this study had the shell length (tip of dorsal lip to tip of posterior margin; SL) 4.5 mm, shell width (between tips of lateral spines; SW) 4.8 mm, rostrum length (tip to base of rostrum; RL) 0.4 mm (Fig. 1). It was collected by P. W. Hsueh from surface water near the Yun-Ann Fishing Port (25°00.325' N, 121°00.247' E), Tau-Yuan County, northwestern Taiwan, 5 May, 2002, and deposited at the National Museum of Natural Science Taichung, Taiwan (NMNS 4780-001).

Diacavolinia bandaensis is closely related to its three congeneric species, *Diacavolinia angulosa* (Gray, 1850), *Diacavolinia pacifica* van der Spoel, Bleeker & Kobayasi, 1993 and *Diacavolinia grayi* van der Spoel, Bleeker & Kobayasi, 1993 by sharing the character of fairly similar shell form. However, *D. bandaensis* is distinguishable easily from the latter three species. *Diacavolinia bandaensis* has no notch on rostrum whereas *D. angulosa* and *D. pacifica* have a fully developed notch (Fig. 1a, 1c, 1d). *Diacavolinia bandaensis* has the similar level between the caudal joint and the lateral spine tips (Fig. 1a, 1c, 1d) (van der Spoel *et al*. 1993; van der Spoel *et al*. 1997), whereas *D. grayi* has the caudal joint projected posteriorly below the lateral spine tips.

It is surprising to find *D. bandaensis* in nearshore waters of the northwestern Taiwan, where is thousands kilometers away from its known original home range in the Banda Sea, Indonesia (van der Spoel *et al*. 1997). It is difficult to explain this disconnected distribution by ocean current transportation alone. The Banda Sea and northwestern waters of Taiwan are located in two different hemispheres. It is difficult for pelagic oceanic animals to cross the

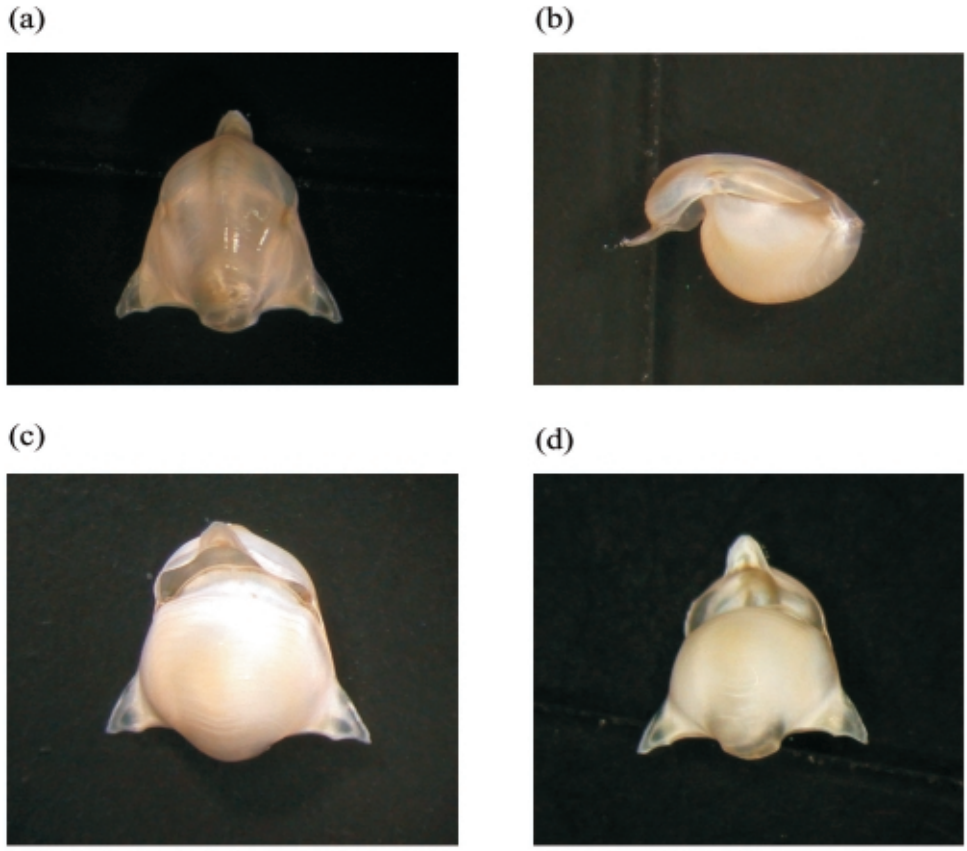

Fig. 1. Dorsal view (a), lateral view (b), ventral view (c), and ventral view with posterior margin elevated (showing the cone-shaped rostrum without a notch and the similar level between caudal joint and the lateral spine) of the shell (SL 4.5 mm; SW 4.8 mm; RL 0.4 mm) of a specimen of *Diacavolinia bandaensis* van der Spoel, Bleeker & Kobayasi, 1993 collected from nearshore waters of Northwestern Taiwan.

equator via surface oceanic currents. Therefore, it is hypothesized that *D. bandaensis* in the nearshore waters of the northwestern Taiwan is one of the populations or subpopulations of the species in the western Pacific. However, because of its extremely rarity, it was not found in the past. In this study we made 72 plankton samplings, but only a single specimen was collected. The surface water habitat found in this study corresponds with the shallow water distribution of the species noted by van der Spoel *et al.* (1997).

We thank Mr. Chin-Ling Chen and Shou-Yu Chen for their assistance in laboratory sorting. This study is supported in part by the grant of National Science Council (NSC92-2621-005-002) of Taiwan. We also appreciate logistic support from National Museum of Natural Science, Taiwan.

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