

Chirostylus ortmanni MIYAKE et BABA, 1968, a Synonym of *C. dolichopus* ORTMANN, 1892 (Crustacea, Anomura, Chirostylidae)

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Abstract

Examination of newly collected specimens revealed that specific characters to differentiate *Chirostylus ortmanni* from *C. dolichopus*, the number of spines on carapace, pterygostomial flap, antennular basal segment and sternal somite varied continuously. Furthermore, the carapace spine arrangement was also considerably variable. Thus, these characters as a specific key are not adequate, and leads to the conclusion that *C. ortmanni* is a junior synonym of *C. dolichopus*.

Introduction

MIYAKE and BABA (1968) established the new species *Chirostylus ortmanni* [Japanese name: Orutoman-wara-ebi] based on a single female specimen collected from off Okino-shima Islet, northern Kyushu, 90m deep. This was the second species of the genus *Chirostylus* around Japanese waters (BABA, 1988; BABA and HAYASHI, 1986). The first species, *C. dolichopus* [Mugi-wara-ebi], was briefly described by ORTMANN (1892), nevertheless well known to marine biologists for its unique morphology, and hitherto it is believed to be a rather rare species inhabited in the depth between 35 and 140m (MIYAKE, 1982; BABA, 1988).

We could obtain some specimens of *Chirostylus* from the shallow depth about 10m at Miyake-jima, one of the Izu Islands situated to the south of Izu Peninsula, and identified these specimens as *C. dolichopus*. However, we noticed that the specific characters described by MIYAKE and BABA (1968) were not satisfied to distinguish either *C. dolichopus* or *C. ortmanni*.

We asked many researchers to collect the *Chirostylus*, and obtained 14 specimens along the Pacific coast of Japan during 12 years. Based on the comparative study of these new materials, we concluded that *C. ortmanni* is a junior synonym of *C. dolichopus*.

Material Examined

All specimens examined are as follows.

♀ : 6 (Carapace Length : 3.70-6.86mm) Miyake-jima Island., Tokyo : collected by the authors during 1980-1985. Depth : 10m.

♂ : 3 (CL : 6.00-7.10mm) Izu Ocean Park, Shizuoka Prefecture : collected by Mr. MORITA in December, 1986. Depth : 20m.

♂ : 2 (CL : 4.60, 7.80mm) Ooshima Island., Kushimoto, Wakayama Prefecture : collected by Mr. FUKUDA in April, 1987. Depth : 30m.

♀ : 1 (CL : 6.30mm) Hime-jima Island., Kochi Prefecture : collected by Mr. WATANABE in August, 1991. Depth : 28m.

♀ : 1 (CL : 5.10mm) Sakura-jima, Kagoshima Prefecture : collected by K. OGAWA in August, 1980. Depth : 40m.

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Young (sexuality could not be identified): 1 (CL : 1.80mm) Aka-jima Island., Okinawa Prefecture : collected by Mr. IMAHARA in July, 1989. Depth : 20m.

All specimens studied are deposited at the National Science Museum, Natural History, Tokyo.

Results

MIYAKE and BABA (1968) distinguished two species based on two main characters, 1) the number of carapace spines and their arrangement around the branchial region, and 2) distal marginal spine arrangement of antennular basal segment. Furthermore they added three different points as follows : 1) cardiac region spine being or not, and the arrangement of a pair of spines on the branchial region, 2) number of spines on the surface of the pterygostomial flap, and 3) number of spines and the morphology of anterior part of sternal segments.

All of these spine numbers of new materials are summarised in Fig. 1. It is clearly shown that these numbers varied continuously. The number of carapace spines ranged from 2 to 7. The number of spines of antennular basal segment ranged from 1 to 4. The number of spines of pterygostomial flap on one side ranged from 1 to 7. The number of spines of sternal segment ranged from 2 to 6.

Spine arrangements on the carapace and pterygostomial flap of all specimens are shown in Fig. 2. Rostral spine is present in 11 cases, and in 3 cases rostral spine is absent. Around the branchial region, one pair of spines on the middle portion with a single spine at center is the basic arrangement (5 cases occurred). Two pairs of spines with a single spine at center occurred in 3 cases, and three pairs of spines with a single spine at center occurred in one case. Asymmetrical arrangement occurred in 2 cases with a single spine in the center, and 2 further

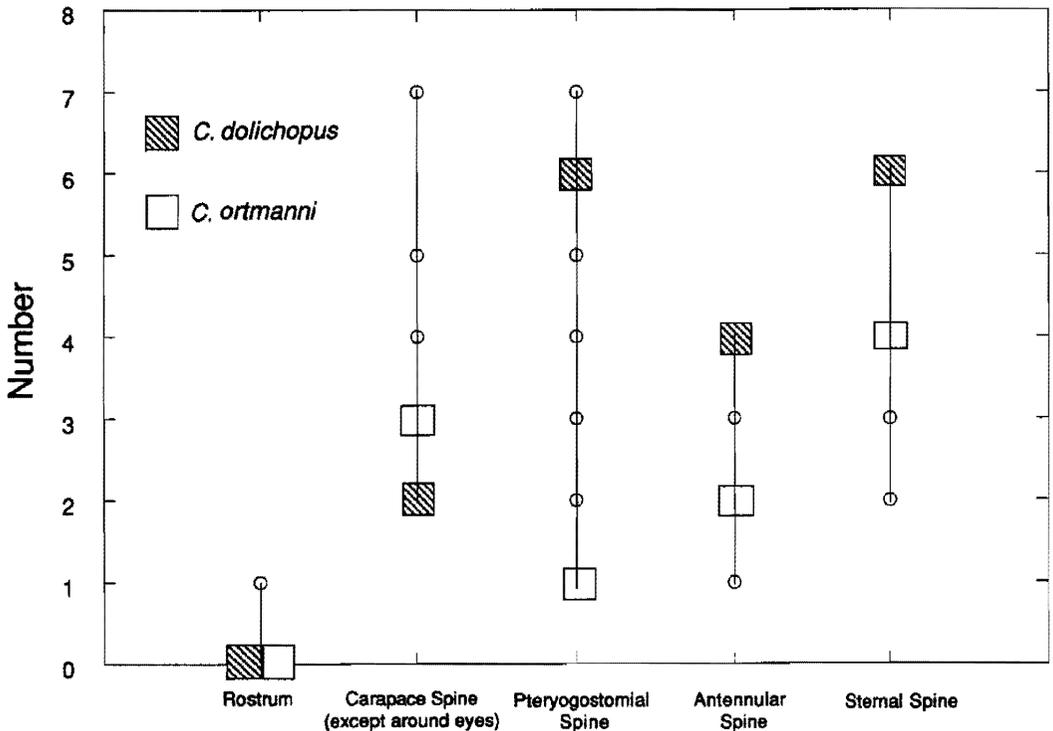


Fig. 1. Comparison of the number of spines within all specimens. Squares show the specific keys defined by MIYAKE and BABA (1986).

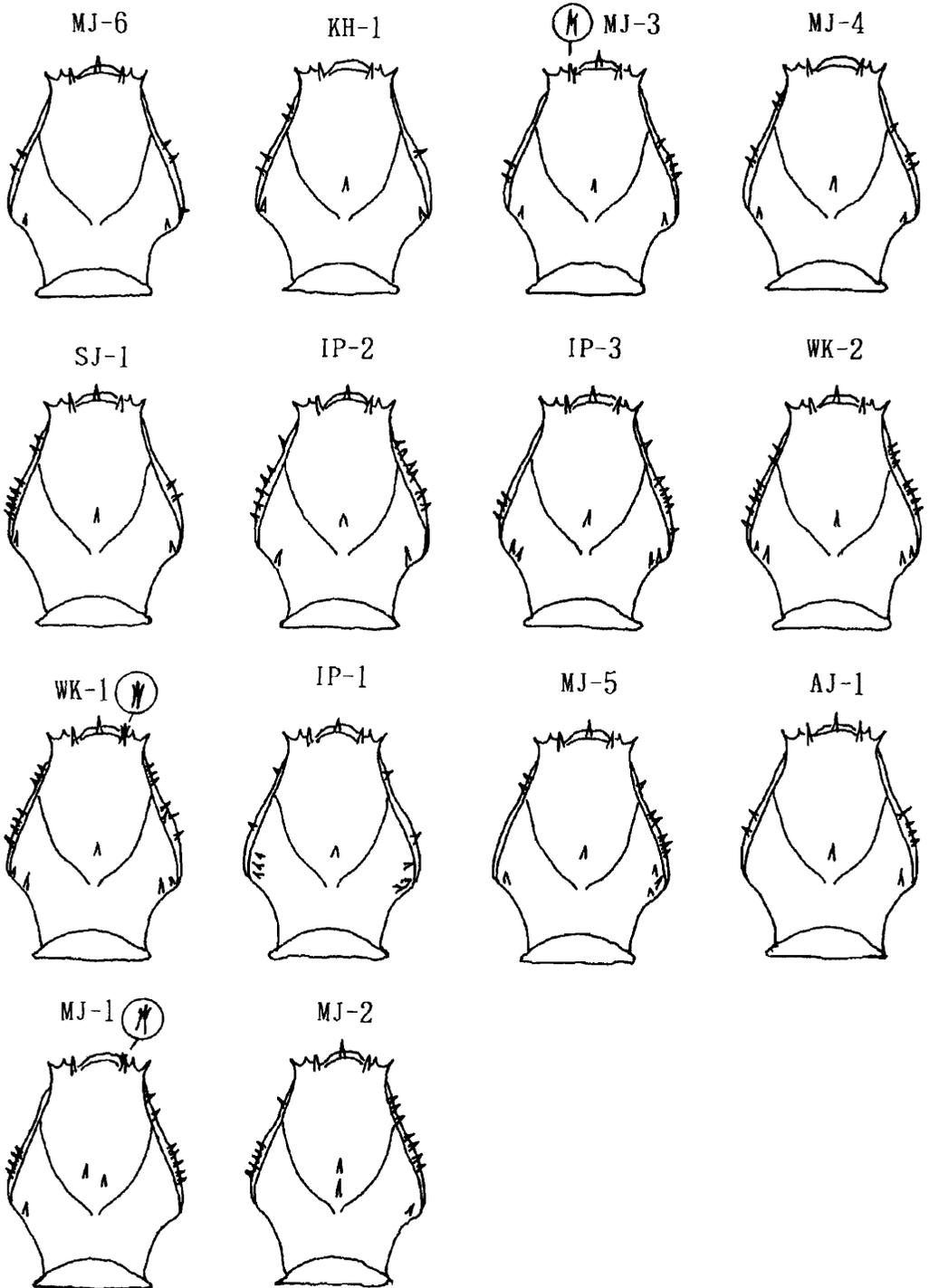


Fig. 2. Comparison of the arrangement of spines on carapace and pterygostomial flap of all specimens.

MJ : Miyake-jima, KH : Kochi (Hime-jima), SJ : Sakura-jima, IP : Izu Ocean Park, WK : Wakayama (Ooshima), AJ : Aka-jima

cases with two spines in the center. Though there is only an exceptional case, one pair of spines without a spine in the center occurred.

On the surface of the pterygostomial flap, spine arrangement is variable in numbers with its distribution. Exceptional spine occurred. A pair of spines behind the insertion of the eye which have two or three forked spines.

Remarks

All specimens of *Chirostylus* collected along the Pacific coast of Japan. The specific characters to differentiate two species noted by MIYAKE and BABA (1968) are fairly variable. The rostrum is entirely absent in the specimens of both species of MIYAKE and BABA (1968). However, TIRMIZI and KHAN (1976) noted a distinct rostrum in all of their 10 specimens of *C. dolichopus* collected in East Africa at a depth of 88-140m. Our specimens include both types; rostrum present or absent, then it seems the rostrum of *Chirostylus* is not true rostral spine as was indicated by BABA (1988).

We have already described the first zoea of *C. dolichopus* which has the peculiar type of carapace spine arrangements (OGAWA and MATSUZAKI, 1992). It can be easily deduced that a part of zoeal carapace spine arrangement remains in adults but with considerable variation. Thus, these characters as a specific key for the base to distinguish *C. ortmanni* from *C. dolichopus* no longer exist.

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和文要旨

Chirostylus ortmanni オルトマンワラエビの学名は *C. dolichopus* ムギワラエビのジュニアシノニム
小川 数也・松崎加奈恵

1964年に北九州沖ノ島90m深から採集された雌1個体のワラエビ科の標本は、MIYAKE and BABA (1968)により、新種 *Chirostylus ortmanni* オルトマンワラエビとして記載された。この種は日本産の別種 *C.*

dolichopus ムギワラエビとは、鰓域周辺の棘数と配列、第一触角基節縁辺の棘数、心上棘の有無、鰓域上棘の有無、翼状板上の棘数、胸板上の棘数が異なると指摘されている。しかし、今回、日本各地(三宅島、伊豆、串本、高知、桜島、阿嘉島)から採集された標本を検討した結果、両種を判別するこれらの形質の差異は、いずれも個体変異に含まれる程度の差異であることが

明らかとなった。従って、*C. ortmanni* の学名は、*C. dolichopus* のジュニアシノニムとされるべきものと結論された。

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