

A New Record of Thalassometridae (Crinoidea, Comantulida, Oligophreata) in Korea

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ABSTRACT

Taxonomic study for the comantulid crinoids collected from Korea Strait was conducted. A oligophreatan species, *Parametra orion* (A. H. Clark, 1907) belonging to the family Thalassometridae, was identified and turned out to be new to the Korean fauna. The family Thalassometridae is newly reported in Korea.

Key words: taxonomy, Thalassometridae, Crinoidea, Korea.

INTRODUCTION

In Korean waters, 14 species of comantulid crinoids have been reported (Clark, 1909; Shin, 2001; 2002; Won and Rho, 2001; Shin and Won, 2002, Won and Shin, 2003) and they are composed of the 5 families in 2 suborders: Comasteridae, Zygometridae, Colobometridae, and Calometridae belong to the suborder Oligophreata having very small and shallow cavity in centrodorsal, and on the other hand, Antedonidae belongs to the suborder Macrophreata whose central cavity in centrodorsal containing chambered structures is large.

This work is a systematic study of Korean crinoids, based on the crinoid specimens collected from Korea Strait (Mipo, Gampo) from 1986 to 2004. The materials were preserved in 70% methyl alcohol and deposited in the Department of Life Science, Sahmyook University. The specimens were identified on the basis of morphological characteristics. The present species, *Parametra orion* (A. H. Clark, 1907), belonging to family Thalassometridae of suborder

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Oligophreata in order Comantulida, was revealed to be new to the Korean fauna.

The classification of Korean crinoids has not been extensively studied. Since the elucidation of Korean crinoid fauna is imminent and important, a crinoid species was redescribed despite the fact that only one species was identified. The brief diagnoses of suborder Oligophreata, family Thalassometridae and genus *Parametra* and the key of oligophreatan families in Korea were prepared. The family Thalassometridae is newly reported in Korea and 15 crinoid species of six families have been reported to be distributed in Korea.

SYSTEMATIC ACCOUNTS

Phylum Echinodermata Klein, 1734

Class Crinoidea Muller, 1821

Order Comantulida A. H. Clark, 1908

Suborder Oligophreata A. H. Clark, 1911

Cavity in centrodorsal very small and shallow. Rosette sunk below dorsal surface of radial pentagon. Radial and interradial extensions form spoutlike processes. Brachial (Br) syzygies more or less widely and irregularly spaced.

Family ^{1*}Thalassometridae A. H. Clark, 1908

Ten or more arms. Cirri long, usually composed of more than 25 segments with dorsal spines. IBr and IIBr series alike, all 2. All pinnules triangular in cross section. P₁ larger than the rest.

Genus ^{2*}*Parametra* A. H. Clark, 1908

Brachials beyond basal more or less compressed laterally and carinate or subcarinate. Division series all 2. Arm bases strongly rounded dorsally and ossicles plain with everted edges. 10-20 arms and cirri with 18-27 (usually 20-25) segments.

^{3*}*Parametra orion* (A. H. Clark, 1907) (Fig. 1)

Antedon orion A. H. Clark, 1907, p.143.

Parametra orion: A. H. Clark, 1918, p. 160; 1950, p. 72, pl. 5, figs. 19, 20, pl. 8, fig. 27, pl. 10, fig. 30; Utinomi and Kogo, 1968, p. 51; Liao and Clark, 1995, p. 57, fig. 32; Kogo 1998, p. 105, fig. 84.

Material Examined. Mipo, 1 individual, 27 Dec. 1986 (J. I. Song); Gampo, 1 individual, 12 Jan. 2004 (S. Shin), 40 m depth.

Diagnosis. Arms 20 in number, more than 50 mm long; IBr and IIBr series 2, respectively; Cirri 21 in number, 11.0 mm long, strongly and evenly curved with 24-25 segments. P₁ particularly longer than the rest.

Description. Centrodorsal discoidal, 3.5 mm in diameter, 1.2 mm high. Polar area broad, coarse, 2.8 mm across. Cirrus sockets mostly arranged in columns with 1 socket per column.

^{1*}바다갯고사리과(신칭), ^{2*}푸른발갯고사리속(신칭), ^{3*}푸른발갯고사리(신칭)

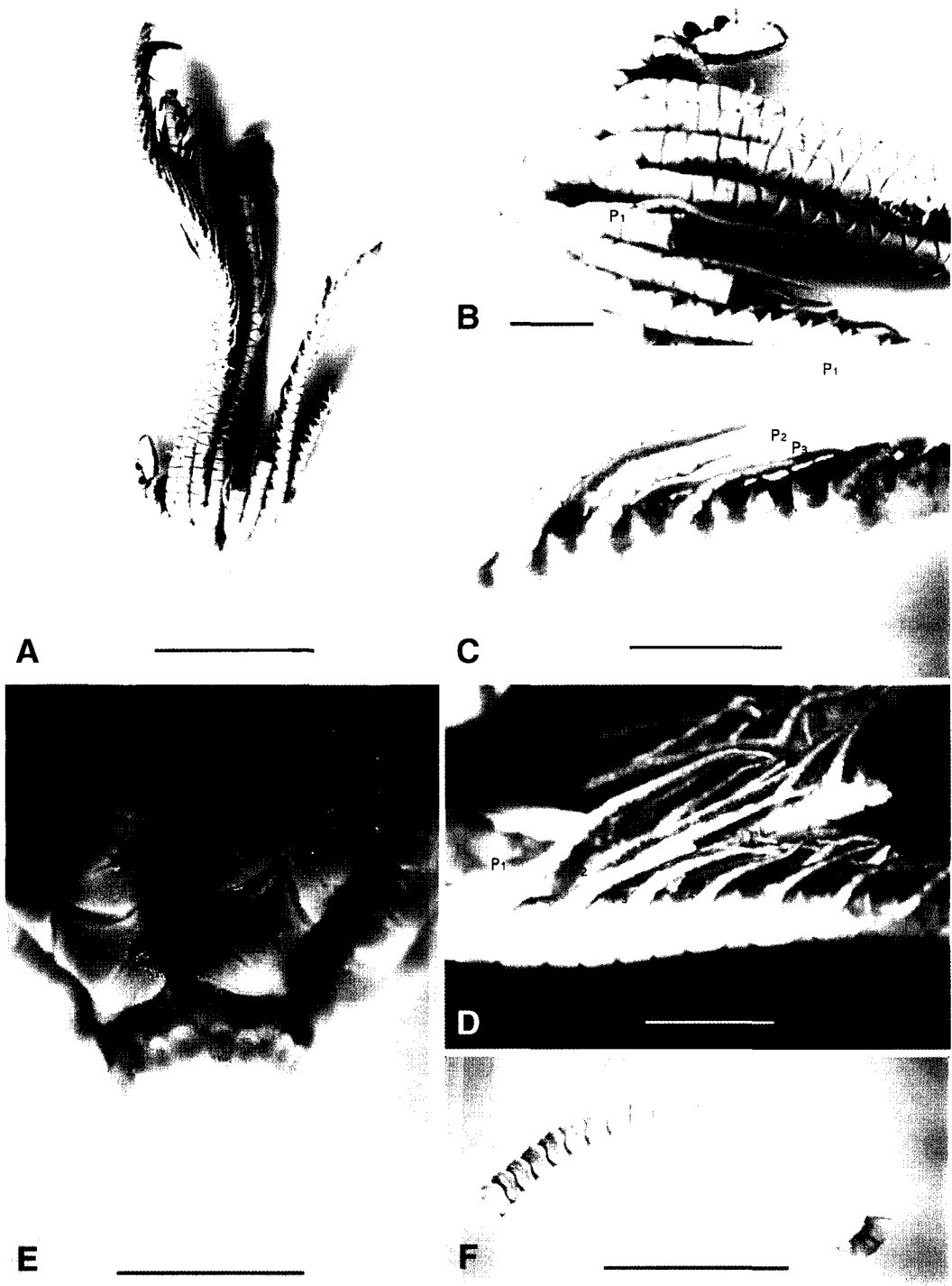


Fig. 1. *Parametra orion* (A. H. Clark, 1907). A, external feature; B, E, centrodorsal, arm bases and pinnules; C, D, proximal pinnules showing first pinnule (P_1), second pinnule (P_2), third pinnule (P_3) and fourth pinnule (P_4); F, cirrus. Scale bars = 1 cm (A), 3 mm (B-F).

Cirri rather small, XXI, 24-25, 11.0 mm long. Length of proximal six segments shorter than width; eighth, transitional and forming dorsal spine; eighth and ninth segments longest but nearly same as long as width; succeeding segments gradually reducing in length; outer cirrus segments with dorsal spines, terminal claw not blunt.

Division series in lateral contact. Radials band-like; IBr series 2, IBr 1 oblong, short, about 4 times as broad as long, and IBr 2 low pentagonal, twice as broad as long; IIBr series 2, resembling IBr, but longer than that of IBr. Ossicles of division series smooth and broad, with blunt synarthrial tubercles, with irregular ventrolateral expansions.

Arms stout proximally, attenuated and slender distally, 20 in number, 50 mm long (broken), 2.0 mm wide at first syzygy. Brachials rounded dorsally in proximal arm with everted distal margin, and triangular in cross section in distal arm. Syzygial pairs variously occurring at 3+4, 7+8, 17+18, 22+23, 26+27, 31+32... or 3+4, 16+17..., 3+4, 20+21..., 3+4, 19+20, 33+34, 40+41..., and at intervals of 5-10 muscular articulations in outer arm.

Proximal pinnules short and stiff, triangular in cross section. Distal pinnules long and fragile. Pinnule segments with sharp ridges, beset with prominent spines at distal edges, and triangular in cross section. P_1 longer than P_2 - P_5 , 18-20 segments, 8.0-10.0 mm long; P_2 16, 7.1 mm; P_3 12, 4.2 mm; P_4 11-13, 4.2 mm; P_5 11-13; P_m 11, 5.0 mm; P_d 17, up to 8.0 mm. $P_1 > P_2 > P_3 \doteq P_4 \doteq P_5 < P_m < P_d$

Distribution. Korea (Korea Strait); Japan (Sagami Bay)-Hongkong.

Remarks. The family Thalassometridae characterized by having P_1 which is longer and stouter than P_2 widely distributed from southern Japan to Indopacific and Atlantic Oceans but firstly reported from Korea. The color of live specimens couldn't be examined, but other morphological characteristics were apparent enough to identify them. The Korean specimens are almost coincided with descriptions and illustrations of the Kogo's manuscript (1998). However, Kogo's specimen is 18 cirri with 20-23 segments and 1.8 mm length. Our specimens are 21 cirri with 24-25 segments and 11.0 mm length. Our specimen's length and the length of longest segment of cirrus are a little bit shorter than those of Kogo's. Furthermore, in our specimens syzygial pairs appeared in various positions for every arm even in the same specimen. But P_1 characteristic of this species is very long compared to other pinnule.

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바다갯고사리과 (바다나리강, 바다나리목, 협중강아목)의 1 한국미기록종

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요 약

대한해협에서 채집한 바다나리류를 동정·분류한 결과 바다갯고사리과 (Thalassometridae)에 속하는 1종의 한국미기록종, 푸른발갯고사리 *Parametra orion* (A. H. Clark, 1907)로 밝혀져 재기재하고 보고한다. 바다갯고사리과는 한국에서 처음으로 보고된다.