

First Record of Snapping Shrimp, *Automate dolichognatha* (Decapoda: Caridea: Alpheidae) in Korea

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ABSTRACT

The alpheid shrimps collected from Jeju-do turned out to belong to the genus *Automate* unreported from Korean waters. *Automate dolichognatha* is recorded for the first time in Korean waters. Korean Alpheidae fauna now consists of 19 species of seven genera.

Key words: Alpheidae, *Automate dolichognatha*, Korea

INTRODUCTION

Eighteen species belonging to six genera in the family Alpheidae have been reported in Korea (Kim and Kim, 1997; Miya, 1997; Kim, 1998; Yang, 1999, 2003; Cha et al., 2001; Yang and Anker, 2003; Koo and Kim, 2003a, b, 2004). The continuous taxonomic study on shrimps collected from Korean waters revealed that one alpheid species belongs to the genus *Automate* unreported from Korea. Korean Alpheidae fauna now consists of 19 species of seven genera. The specimens were collected by hand net in tidal pool by digging big wholes and by scuba diving at depth of 5-30 m. The abbreviation "cl" refers to carapace length from the tip of rostrum to the posterior dorsal margin. Drawings were made with the aid of a camera lucida.

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SYSTEMATIC ACCOUNTS

Family Alpheidae Rafinesque, 1815

Genus **Automate* De Man, 1888

*****Automate dolichognatha* De Man, 1888 (Fig. 1)**

Automate dolichognatha De Man, 1888: 529, pl. 22, fig. 5; Banner and Banner, 1973: 299, fig. 1; Chace, 1988: 64; Hayashi, 1995: 520, figs. 285, 286.

Automate Gardineri Coutière, 1902: 337.

Automate haightae Boone, 1931: 184, fig. 22.

Automate johnsoni Chace, 1955: 13, fig. 7.

Material examined. 1 specimen, Chagwido Is. (Jeju-do), 8 Jun. 2001, subtidal; 1 ovig. ♀, 6 specimens, Gosan (Jeju-do), 11 Jul. 2003, intertidal.

Description. Body laterally compressed. Both eyes and eye-stalks visible in dorsal view. Rostrum (Fig. 1A, B) roundly triangular, not reaching anteriorly to level of extreme anterior margin of carapace.

Antennules (Fig. 1B) slender. Second antennular segment longer than visible part of first segment and about three times as long as third segment. Stylocerite reaching far short of distal margin of first segment.

Scaphocerite reaching far short of distal margin of second antennular segment, with lateral margin almost straight. Distal spine exceeding inner blade.

Carpocerite overreaching distal end of antennular peduncle by about half length of third antennular segment. Basicerite with lateral tooth blunt.

Third maxilliped (Fig. 1A) overreaching distal end of carpocerite by part of penultimate and entire ultimate segment. Ultimate segment elongate, more than three times as long as penultimate, bearing about 13 pairs of spinules on superior margin. Exopod reaching far short of distal end of antepenultimate segment.

First pereopods dissimilar, carried extended. Major chela (Fig. 1C, D) quite robust, elongate in cross section, about two times as long as broad, concave on inferior margin, bearing short setae on either side of fingers and on inferior margin. Fingers slightly shorter than palm. Movable finger regularly arched along superior margin, with inferior margin, bearing two blunt teeth proximal half and tip acute. Immobile finger with tip bifid, bearing five tooth-like tubercles on superior surface proximally. Palm rather plump, without sculpture. Merus small, with inferior inner margin smooth.

Minor chela of first pereopod (Fig. 1E, F) with fingers shorter and narrower than palm, bearing short setae on both side of fingers and on inferior margin. Palm with inferior margin quite convex. Merus with inferior inner margin bearing five tiny bands consisting of very short setae.

Fingers of chela of second pereopod (Fig. 1G) almost as long as palm. First segment of carpus slightly longer than 1/2 length of second; second segment about 2.3 times as long as third; third segment slightly longer than fourth; fifth segment almost as long as third and far shorter than chela.

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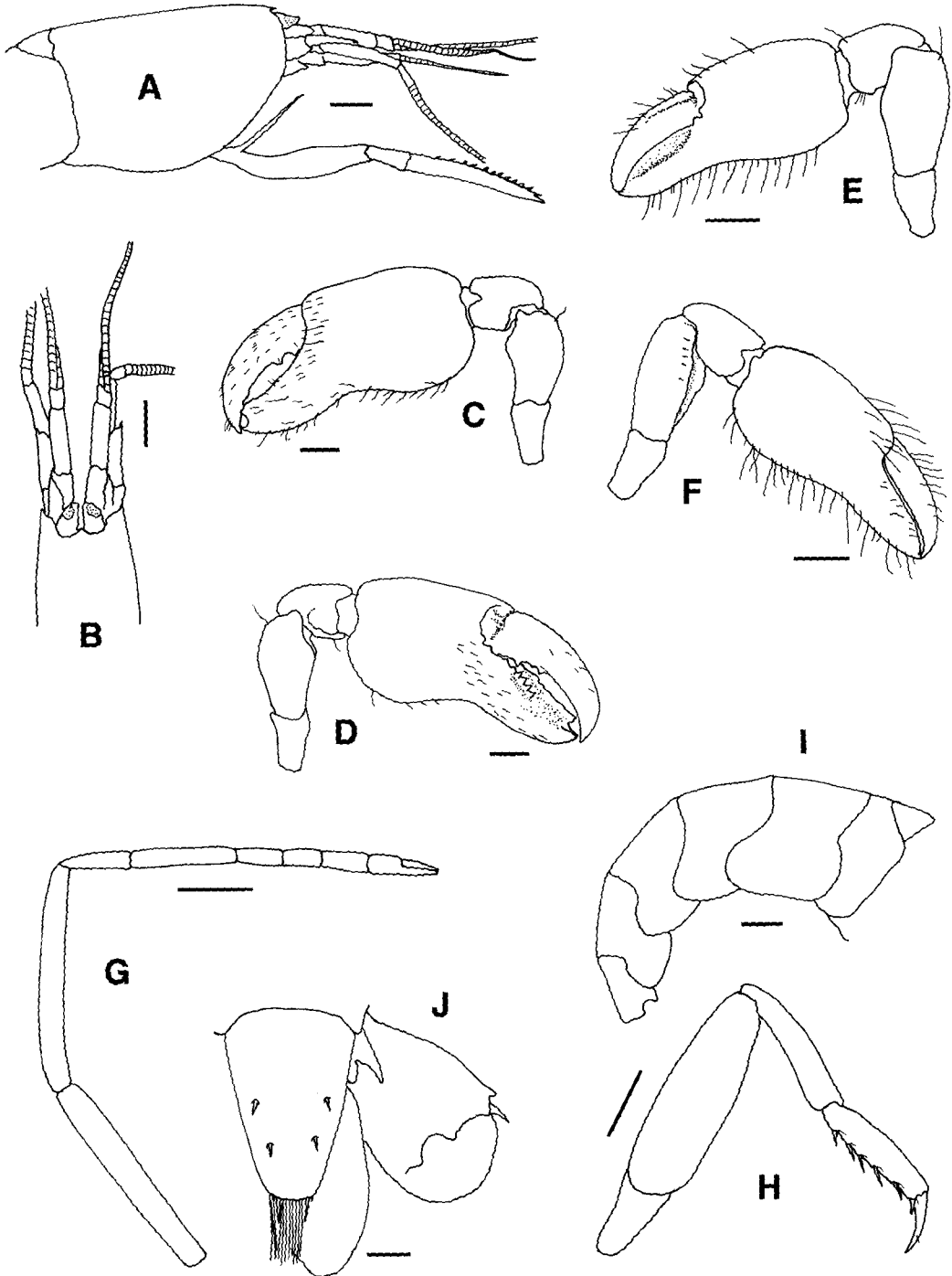


Fig. 1. *Automate dolichognatha*, ovigerous female, cl 0.58 mm. A, anterior region, lateral view; B, same, dorsal view; C, large (right) first pereopod, inner face; D, same, outer face; E, small (left) first pereopod, outer face; F, same, inner face; G, right second pereopod; H, right third pereopod; I, abdomen; J, telson and part of uropods. Scale bars = 1 mm (A-I); 0.5 mm (J).

Dactylus of third pereopod (Fig. 1H) conical, less than half length of propodus. Propodus slightly shorter than carpus, bearing about five movable spines and one additional small movable spine on inferior margin and a pair at distal end. Carpus bearing no movable spine on inferior margin. Merus broad, about 3.3 times as long as broad and 1.6 times as long as carpus. Ischium without movable spine.

Fourth pereopod almost same as third pereopod.

Fifth pereopod much narrower than third pereopod.

Pleura (Fig. 1I) of abdominal somites much overlapping on ventral regions. Sixth abdominal somite without articulated triangular flap.

Telson (Fig. 1J) about 1.6 times as long as broad at anterior end, armed with two pairs of rather small dorsal spines. Posterior margin bearing long setae, and armed with a pair of movable spines at each lateral end; inner spine very strong, more than five times as long as outer one.

Uropodal exopod with lateral margin ending in acute immovable tooth flanking strong movable spine; spine flanked internally by immovable tooth.

Distribution. Pantropical, except for eastern Atlantic; usually intertidal or shallow subtidal (Chace, 1988). Korea (Jeju-do).

Remarks. One of characteristics of the genus *Automate* is that there is no appendix masculina in male. Therefore, it is very difficult to determine the sex. In the present study, sexual dimorphism based on the external morphological characters was not found with the available specimens. Therefore, except one ovigerous female, we did not distinguish male and female specimen and only indicated number of individuals in the "Material examined" section.

Only eight species of the genus *Automate* are recognized in the world (Chace, 1988). This genus is recognized in the family Alpheidae by combination of the following characteristics: epipods present on at least the first two pairs of pereopods; no articulated plate at posterolateral angle of sixth abdominal somite; eyes, including peduncle, fully exposed in dorsal view.

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한국미기록 나안딱총새우 (십각목: 생이절: 딱총새우과)의 보고

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요 약

새우류의 분류학적 연구 결과 딱총새우류 1종이 한국에서는 지금까지 보고되지 않은 속에 속하는 종으로 밝혀졌다. 이 종을 나안딱총새우 (*Automate dolichognatha*)로 신청하고 재기재 한다. 한국산 딱총새우류는 7속, 19종으로 구성된다.