

# New Record of Two Species of *Jassa* from Korea (Crustacea: Amphipoda: Ischyroceridae)

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## ABSTRACT

During the long-term surveys of marine environment some ischyrocerid amphipods were collected, which indicated the various types of habitats. Among them the two species, *Jassa marmorata* Holmes, 1903 and *J. morinoi* Conlan, 1990, are here reported from Korea for the first time with short redescrptions. *J. marmorata* occurs in the cirripedian community, while *J. morinoi* between marine algal colonies at low tide on the rocky shore.

**Key words:** *Jassa marmorata*, *J. morinoi*, Korea

## INTRODUCTION

Most species of cosmopolitan genus *Jassa* are normally concerned as an important fouling organisms. The animals basically construct tubes amongst algae or hydroid growths, or on solid surfaces in areas of strong water currents such as pilings, buys, rafts or the hulls of ship (Lincoln, 1979). Additionally, morphological characters of *Jassa* are much various, e.g. antenna, second ganthopod and uropods.

During the recent marine environmental surveys some ischyrocerid amphipods were collected from the various types of habitats. Among them the two species, *Jassa marmorata* Holmes, 1903 and *J. morinoi* Conlan, 1990, are identified for the first time from Korea. *J. marmorata* was found in the crustacean community, while *J. morinoi* between marine algal colonies at low tide on the rocky shore.

Until now, *J. falcata* (Montagu, 1808) and *J. slatteryi* Conlan, 1990 have been reported. The specimens of *J. falcata* were collected from the cement experimental plates installed in the waters of Deukryang Bay in 1981 and from the Southern coast of Cheju Island in 1987, while *J. slatteryi* Conlan, 1990 from the screw of the ship anchored in Samcheonpo in 2004 (Hong, 1983; Kim and Kim, 1987; Lim and Park, 2006). Therefore, according to the formal record there are 4 species of the genus *Jassa*, which occur in Korean marine fauna.

## MATERIALS AND METHODS

Samples were collected in the marine algae community in

the Geojedo Island, Saemangeum, Gwangyang Bay and Samcheonpo. Specimens were fixed in 4% formaldehyde-seawater solution and preserved with 70% ethanol. The left parts of their appendages were dissected in glycerol on a cavity slide glass under a stereomicroscope Leica MZ 16 and drawn using a drawing tube under the Olympus BX 51 microscope.

## SYSTEMATIC ACCOUNTS

### *Jassa morinoi* Conlan, 1990

*Jassa morinoi* Conlan, 1990, pp. 2053-2055, figs. 2-6, 17.

*Material examined.* 3 males in marine algae in shallow water, Geojedo Island of the southern coast of Korea, 10 Mar. 2005.

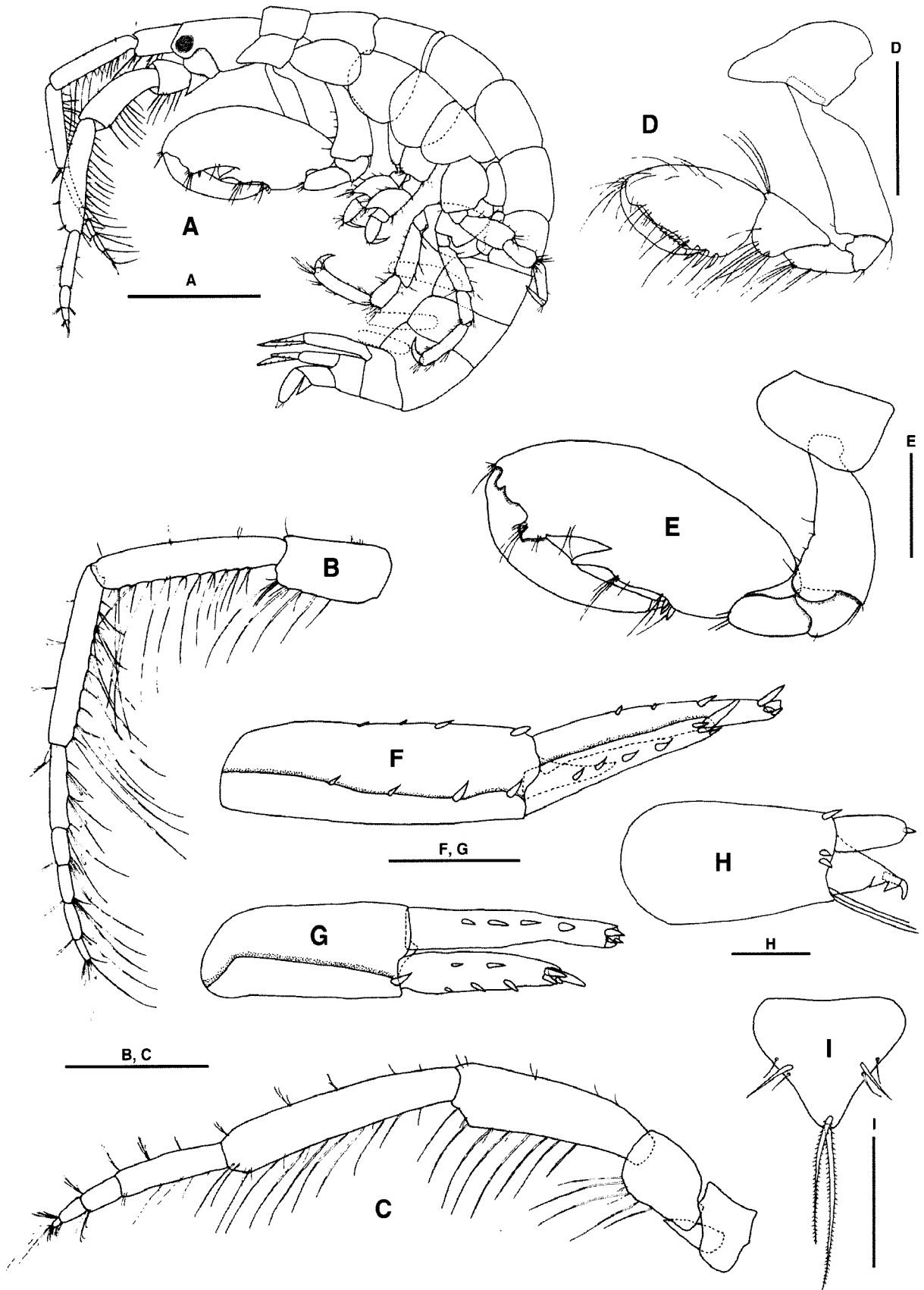
*Redescription of male.* Body (Fig. 1A) about 6 mm (from rostrum to posterior end of urosomite 3). Antenna 1 (Fig. 1B) with 3 peduncular and 5 flagellar articles; peduncular articles with long and short simple setae along the ventral margin; accessory flagellum with 2 articles (last article minute). Antenna 2 (Fig. 1C) with 5 peduncular and 4 flagellar articles; 1<sup>st</sup> and 2<sup>nd</sup> peduncular articles short, without setae; flagellar articles gradually reduced in length. Last flagellar article with 3 spines and some fine simple setae; all flagellar and peduncular articles with fine simple setae sparsely distributed on dorsal margin.

Gnathopod 1 (Fig. 1D), basis narrow, broadening distally; merus with some simple setae on ventral margin; carpus narrow, broadening distally with 1 short and 3 long setae dorsodisatly and some simple setae on ventral margin; propodus with 3 long spines proximally on ventral margin and some fine simple setae on dorsal margin; dactylus with ser-

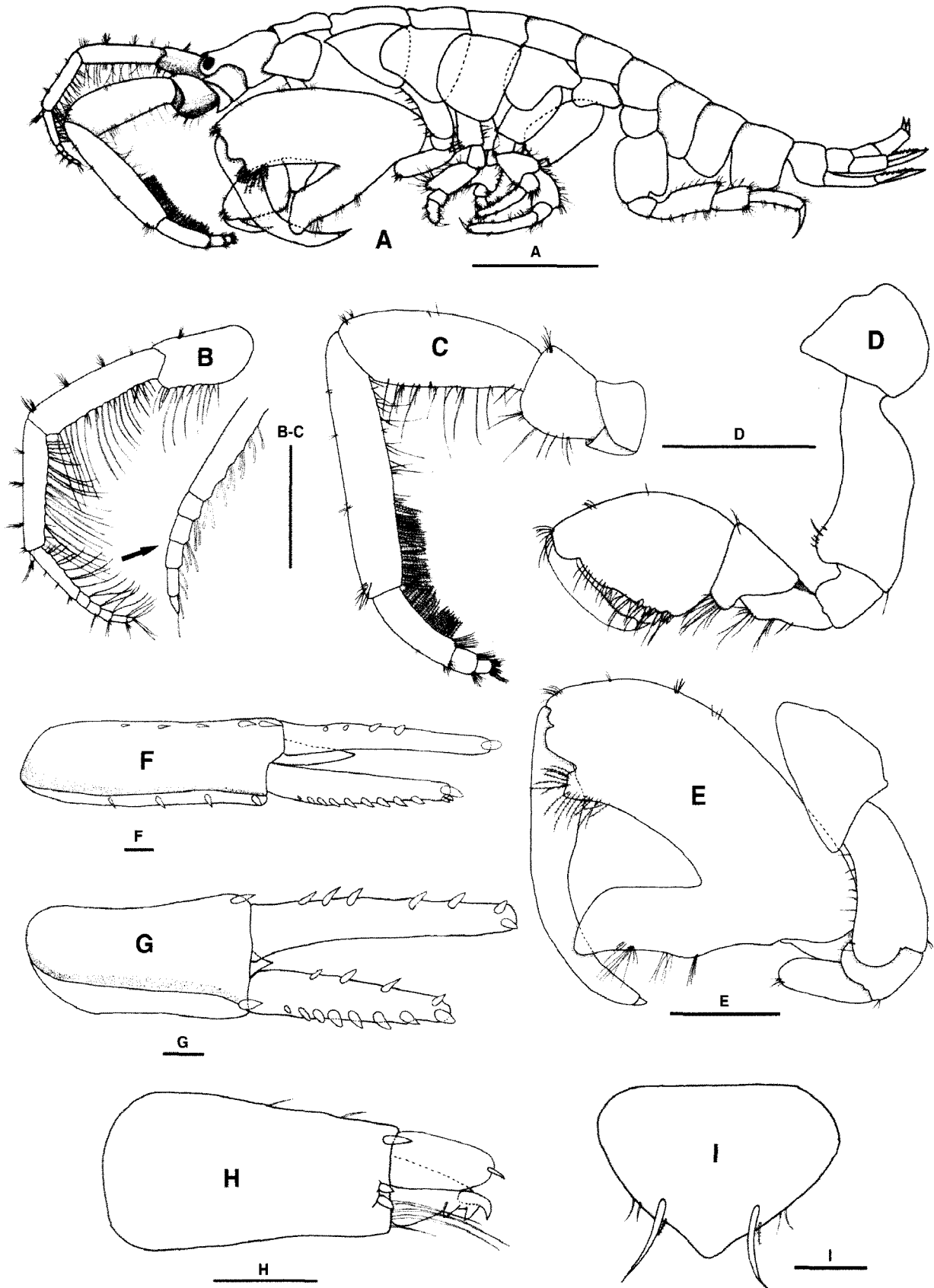
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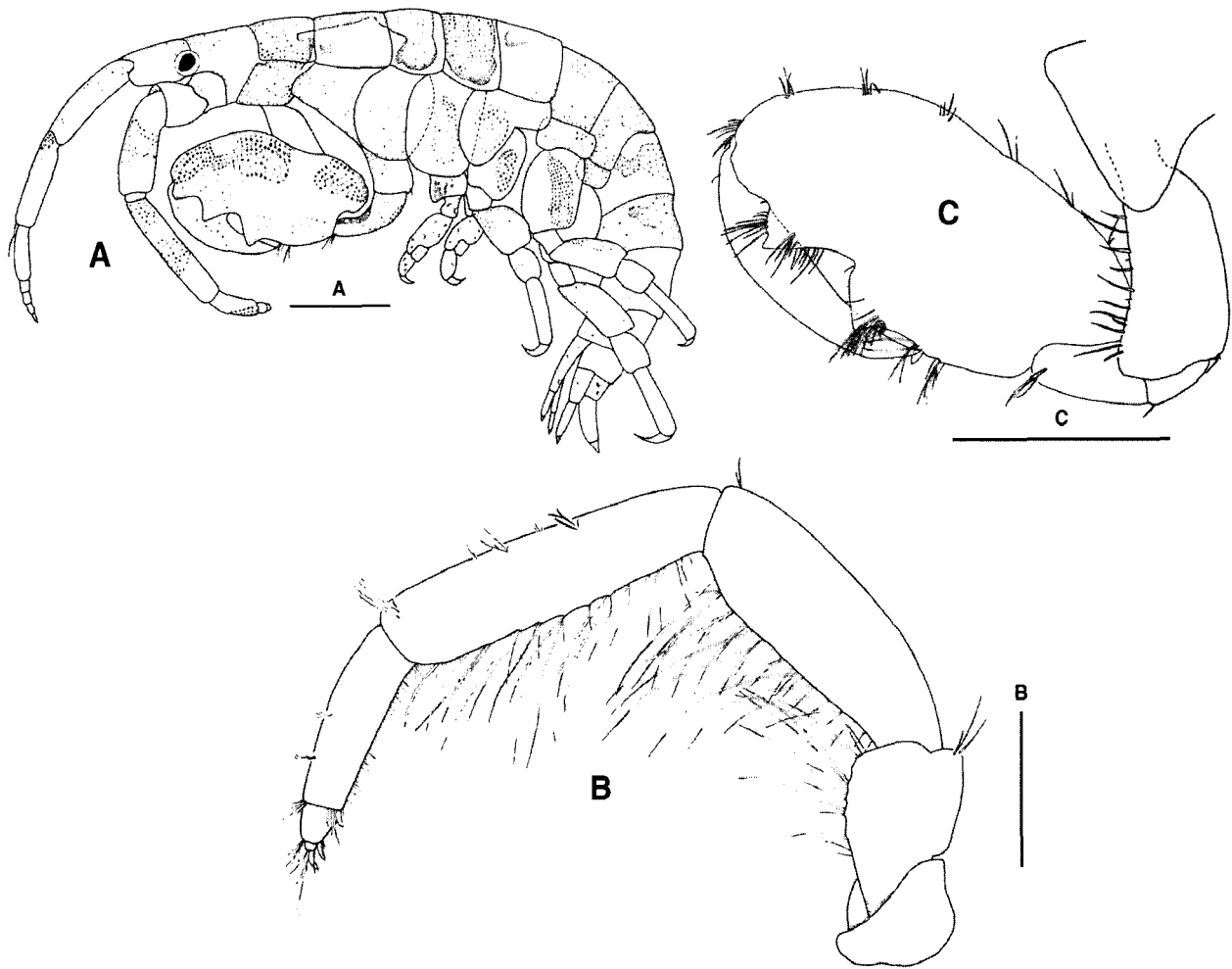
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**Fig. 1.** *Jassa morinoi* Conlan, 1990, male. A, habitus; B, antenna 1; C, antenna 2; D, gnathopod 1; E, gnathopod 2; F, uropod 1; G, uropod 2; H, uropod 3; I, telson. Scale bars=1 mm (A-C), 0.4 mm (D, E), 0.2 mm (F, G), 0.1 mm (H, I).



**Fig. 2.** *Jassa marmorata* Holmes, 1903, male. A, habitus; B, antenna 1; C, antenna 2; D, gnathopod 1; E, gnathopod 2; F, uropod 1; G, uropod 2; H, uropod 3; I, telson. Scale bars=2 mm (A), 1 mm (B-E), 0.1 mm (F-I).



**Fig. 3.** *Jassa marmorata* Holmes, 1903, female. A, habitus; B, antenna 2; C, gnathopod 2. Scale bars=1 mm (A, C), 0.5 mm (B).

rate inner margin.

Gnathopod 2 (Fig. 1E), basis with 5 simple setae on anterior margin and 1 long and 1 short simple seta at posterodistal angle; propodus with 3 spines at the point contacting with the claw and with simple setae at hinge tooth area; 'thumb-like' process of propodus, acute, with simple setae sparsely on ventral margin.

Uropod 1 (Fig. 1F), peduncle with a triangular process distally on posteroventral margin (about 38% of inner ramus length); inner ramus about 1.2 times longer than outer one; inner and outer rami with 3 and 4 mid-dorsal spines, respectively, terminating in a fringe cusp ventral to apical spine group.

Uropod 2 (Fig. 1G), peduncle with process distally on posteroventral margin (about 10% of inner ramus length); inner ramus about 1.3 times longer than outer one; inner ramus with 4 spines on mid-dorsal margin and 3 spines in a terminated fringe; outer ramus with 5 spines on mid-dorsal margin and 4 spines in a terminated fringe.

Uropod 3 (Fig. 1H), peduncle with 3 spines on posteroventral margin; inner ramus with a single apical spine; outer ramus triangular with 2 sequential serrations in area of cusps and a curved spine at the apex.

Telson (Fig. 1I), triangular, with 2 long setae at the tip, 1 strong seta and 2 simple setae at both lateral cusps.

*Female.* Not found.

*Habitat.* Found amongst marine algae community.

*Remarks.* *Jassa morinoi* can be distinguished from other species by the following: male antenna 2 (Fig. 1H) with simple setae and without plumose seta on ventral margin; male 'thumb-like' process of gnathopod 2 (Fig. 1D) with simple setae on ventral margin; telson (Fig. 1I) with long two plumose setae at the tip.

***Jassa marmorata* Holmes, 1903**

*Jassa marmorata* Holmes, 1903, p. 289; 1904, pp. 511-513; Shoemaker, 1930, p. 346; Lincoln, 1979, p. 552, fig. 265; Arrestiet et al., 1986, p. 117, fig. 15.

*Jassa falcata*: Chevreux and Fage, 1925, pp. 2-3; Sexton and Reid, 1951, pp. 29-91 ("broad form" only), plates 5, 10-17, 20-26; Bousfield, 1973, pp. 190-191, plate 58.2.

**Material examined.** 103 females and 17 males from the surface of buoy in Saemangeum of the western coast of Korea (35°50.0125' 126°32.9736'), 17 May 2006; 1 male from Gwangyang Bay of the southern coast of Korea, 17 Nov. 2004; 3 females from the screw of the Hanjin ship anchored in Samcheonpo of the southern coast of Korea, 10 Jun. 2004.

**Redescription of male.** Body (Fig. 2A) about 12 mm. Antenna 1 (Fig. 2B) with 3 peduncular and 6 flagellar articles; accessory flagellum with 2 articles (last article minute).

Antenna 2 (Fig. 2C) with 5 peduncular and 4 flagellar articles; 1<sup>st</sup> and 2<sup>nd</sup> peduncular articles short, without setae; 3<sup>rd</sup> peduncular article wider and shorter than 4<sup>th</sup> one with some simple setae on ventral margin and 5 fine setae distally on dorsal margin; 4<sup>th</sup> peduncular article shorter and thicker than 5<sup>th</sup> one with some simple setae; 5<sup>th</sup> peduncular article with simple setae proximally and plumose setae distally on ventral margin; 1<sup>st</sup> flagellar article 3.6 times longer than 2<sup>nd</sup> one with plumose setae and fine simple setae distally on ventral margin; 2<sup>nd</sup> to 4<sup>th</sup> flagellar article with 1 spine and fine simple setae; all flagellar and peduncular articles with fine simple setae sparsely on dorsal margin.

Gnathopod 1 (Fig. 2D), basis narrow, broadening distally, with 4 short and 1 long setae at anterodistal angle and 1 long seta at posterodistal one; merus with some simple setae on ventral margin; carpus narrow, broadening distally with 3 simple setae distally on dorsal margin, some simple setae on ventral margin; propodus with 6 proximal spines and some fine simple setae on ventral margin; dactylus with serrate inner margin.

Gnathopod 2 (Fig. 2E), basis with 9 simple setae on anterior margin and 2 short simple seta distally on posterior margin; propodus without spine and plumose setae densely on hinge tooth area; 'thumb-like' process of propodus, square, with some simple setae sparsely on ventral margin; dactylus slightly blunt.

Uropod 1 (Fig. 2F), peduncle with a process distally on posteroventral margin (about 41% of inner ramus length); inner ramus about 1.1 times longer than outer one, with 4 spines along the posterior margin and a single apical spine; outer ramus with 9 spines along the anterior margin and apical spine group.

Uropod 2 (Fig. 2G), peduncle with a triangular process distally on posteroventral margin (about 8.5% of inner ramus length); inner ramus about 1.3 times longer than outer one, with 5 spines along the dorsal margin and 2 spines

in a terminated fringe; outer ramus with 3 and 7 spines on both side of dorsal margin and with 2 spines in a terminative area.

Uropod 3 (Fig. 2H), peduncle with 3 spines on posteroventral margin; inner ramus with a single apical spine; outer ramus triangular with 2 sequential serrations in area of cusps and a curved spine at the apex.

Telson (Fig. 2I), triangular, with 3 thin setae and 1 strong seta at both lateral cusp.

**Female.** Body (Fig. 3A) about 8.3 mm. Antenna 2 (Fig. 3B) without plumose seta on posterior margin; 5<sup>th</sup> peduncular and 1<sup>st</sup> flagellar article with fine setae somewhat shorter than male. Propodus of gnathopod 2 (Fig. 3C) has 1-2 small spines at the point contacting with dactylus; propodus rough on ventral margin and without 'thumb-like' process.

**Habitat.** Found amongst algae, buoys and other fixed and floating objects (Lincoln, 1979).

**Remarks.** *Jassa marmorata* is distinguished from the most similar species *Jassa slatteryi* by the following aspects: propodus of gnathopod 2 (Fig. 2E) with long and rectangular 'thumb-like' process and with sparse simple setae on ventral margin.

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