

Atlantistylis japonica, A New Diastylid Cumacean Crustacean from Japan

Sigeo Gamô

10–26–303, Kohinata 2 chome, Bunkyo-ku, Tokyo, 112–0006 Japan

Abstract A new diastylid cumacean, *Atlantistylis japonica* from bathyal depth in Suruga Bay is described and illustrated. The genus *Atlantistylis* Reyss, 1975 was established by the type species, *A. chauvini* taken from bathyal and abyssal depths in the tropical Atlantic. In the present paper, the second species of the genus *A. japonica* is newly added from the northwestern Pacific.

Key words: Cumacean crustacean, Diastylidae, *Atlantistylis japonica*, a new species, Japanese waters

The specimen of a new species, *Atlantistylis japonica* described herein, was collected during the cruise of R/V *Tansei Maru* (KT 73–15) of the Ocean Research Institute, the University of Tokyo at St. D (KT 73–15), west off Matsuzaki in Suruga Bay on 29 October, 1973. The type specimen is reserved in the National Science Museum, Tokyo (NSMT).

Family Diastylidae

The family Diastylidae consists of about 20 genera and more than 200 species. Adult male of the family are usually provided with 2 pairs of pleopods, except for the following 2 genera, *Atlantistylis* without pleopods (Reyss, 1975; Day, 1980; Gerken *et al.*, 2000) and *Ehtonodiastylis* with only 1 pair of pleopods (Gerken *et al.*, 2000).

Atlantistylis japonica sp. nov.

(Figs. 1–2)

Type specimen. Holotype, adult male (NSMT-Cr 14241), heavily damaged, hind part of pleon almost missing, except for first 2 pleonites. Length of cephalothorax (including pseudorostrum) 4.3 mm. St. D (KT 73–15), west off Matsuzaki, Suruga Bay (34°45.97'N, 138°42.32'E–34°46.45'N, 138°42.40'E) 314–320 m depth; 29 October, 1973. Gear: 2 m beam-trawl.

Description of holotype. Carapace (Fig. 1A–B) almost ellipsoidal in shape as seen from above, about 3/4 as long as cephalothorax (including pseudorostrum), ca. 3 times as long as greatest width across middle part, and slightly less than 3 times as

long as depth; it bears scattered short spines, and with 1 pair of spines on frontal lobe; eyeless eyelobe small, without spines. Pseudorostral lobes much projected in front of eyelobe for a distance nearly $1/2$ as long as rest of carapace, much narrowed distally, moderately arched, and fringed with sharp spines; its dorsal surface with a few rows of small spines. Antennal notch widely concave; its ventral margin lined with 7 large spines and edged with sharp spinules. Anterolateral corner largely rounded. Lower or ventral margin of carapace slightly arched posteriorly and finely spinulated. Pereon (Fig. 1A–B) slightly shorter than rest of carapace, gradually narrowed and shallowed backward. Pereonite 1 visible; each of pereonites 1–5 has 1 pair of strong dorsal spines and some plumose setae and spinules on epimeron. Pleon (Fig. 1A–C) damaged, completely missing, except for first 2 pleonites; combined length of first subequal 2 pleonites $3/4$ as long as pereon; each pleonite with 2 pairs of dorsal strong spines and several spines on lateral and hind margin; sternite of pleonite 1 has a large median spine directed forward, a row of several spines along lateral and 2 pairs of small spines and plumose setae near hind margin; in pleonite 2 sternite provided with 2 pairs of spines on each side and 1 pair of stout spines and plumose setae near hind margin.

Antennule (Fig. 1A, D) with peduncle short and robust, club-shaped, and 3-segmented; 1st segment ca. $1\frac{1}{2}$ as long as distal 2 segments combined, with 3 stout spines and a plumose seta near distal end; 2nd segment ca. $1/3$ of 1st, with 3 spines near distal end, middle one longest; 3rd segment ca. $1\frac{1}{2}$ as long as 2nd, and composed of 2 parts, basal part semiglobular with a short basal spine and distal one expanded into a round swelling, both entirely covered by a large tuft of innumerable fine simple sensory setae. Main lash slender, nearly as long as 1st peduncular segment, 4-segmented; 1st segment longest, ca. $1\frac{1}{2}$ as long as 2nd, and $1\frac{3}{4}$ as long as 3rd which slightly longer than 4th; 3rd segment with a bare seta on distal end, and 4th with 2 long aesthases and a bare seta. Accessory lash slender, shorter than main lash and 3-segmented; 2nd segment longest, ca. $1\frac{1}{4}$ as long as 1st and $1\frac{3}{4}$ as long as 3rd bearing 2 long setae at apex. Antennal flagellum (Fig. 1A, E) reaches end of pereon. Mandible (Fig. 1F) boat shaped, with 11 setae on right incisor process. Maxillule (Fig. 1G) with palp bearing 2 filaments (one of which missing). Maxilla and maxilliped 1 as shown in Fig. 1H–I. Maxilliped 2 (Fig. 2A) with basis ca. $1\frac{1}{6}$ as long as distal segments together, much wider distally, nearly $1/3$ as wide as its length, with a short spine and 2 plumose setae distally and abruptly narrowed at about $1/4$ basal part, ca. $1/2$ as wide as its greatest width. Maxilliped 3 (Fig. 2B) with basis cylindrical, slightly curved and broader distally, $1\frac{3}{4}$ as long as distal segments together, and has a row of plumose setae with spines on inner margin and a longitudinal row of spinules on ventral surface; outer angle of basis slightly produced distally, with 5 long plumose setae; ischium ca. $1/2$ as wide as distal margin of basis, $3/4$ as long as merus; carpus ca. $1\frac{1}{4}$ as long as merus, with 4 spinules and 2 plumose setae on inner margin; propodus slightly shorter than dactylus. Pereopod 1 (Fig. 2C) with

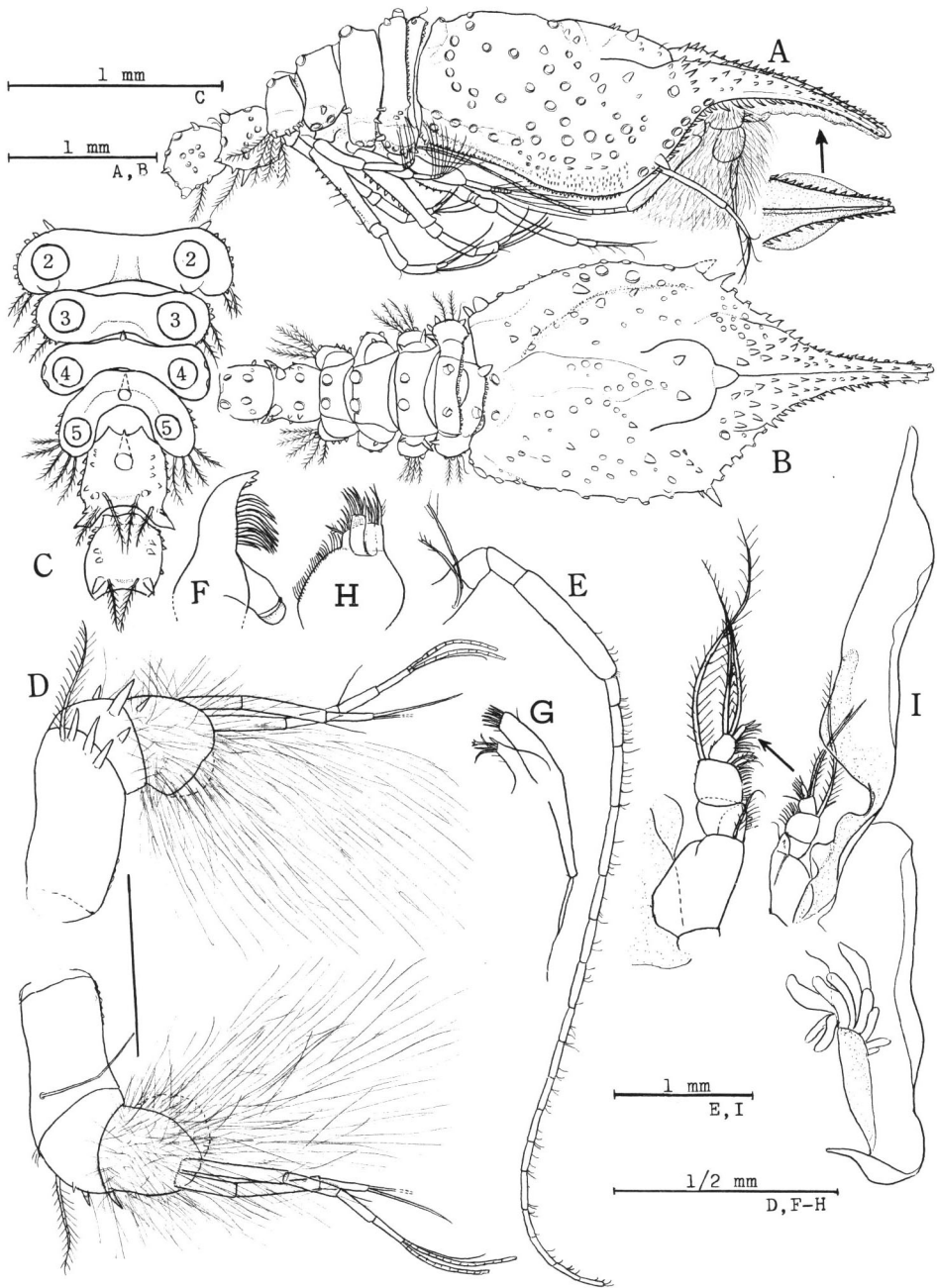


Fig. 1. *Atlantistylis japonica* sp. nov., holotype adult male, length of cephalothorax (including psedorostum), 4.3 mm. A. Anterior part of body, lateral view; B. the same, dorsal; C. last 4 pereonites and first 2 pleonites, ventral (2–5, sockets of pereopods 2–5); D. antennule; E. antenna; F. right mandible; G. maxillule; H. maxilla; I. maxilliped 1.

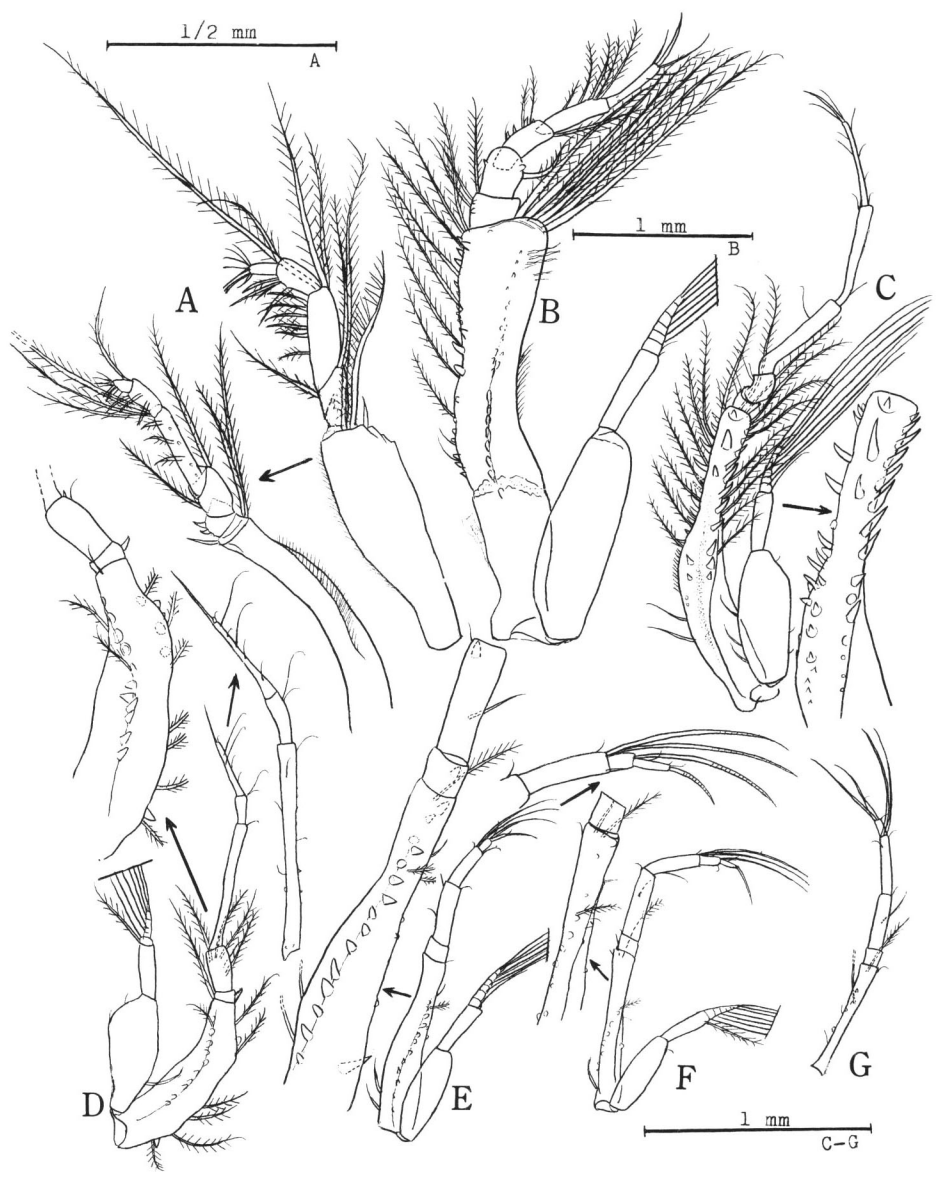


Fig. 2. *Atlantistylus japonica* sp. nov., holotype adult male. A. Maxilliped 2; B. maxilliped 3; C. pereopod 1; D. pereopod 2; E. pereopod 3; F. pereopod 4; G. pereopod 5.

basis moderately curved, a little longer than distal segments together, bearing sharp spines with plumose setae on inner and outer margin and some robust spines ventally; ischium 1/2 as long as merus which 1/3 as long as carpus or propodus; dactylus a

little shorter than propodus. Pereopod 2 (Fig. 2D) a little longer than $2/3$ of pereopod 1, with basis $2/3$ as long as distal segments together, much curved, rather thick basally, bearing 6 plumose setae on inner margin and a longitudinal row of spines ventrally; merus $1/3$ as long as carpus, with some plumose setae distally; carpus ca. $1\frac{1}{2}$ as long as propodus and dactylus combined, with sparse short setae; dactylus ca. twice as long as propodus. Pereopod 3 (Fig. 2E) slightly shorter than $3/4$ of pereopod 2, with basis nearly $1\frac{1}{4}$ as long as rest of limb and a little wider basally, with a longitudinal row of spines ventrally. Pereopod 4 (Fig. 2F) as long as pereopod 3, with basis cylindrical, a little longer than $3/4$ as long as rest of limb. Pereopod 5 (Fig. 2G) much shorter than pereopod 4, with basis nearly $2/3$ as long as rest of limb. Maxilliped 3 and pereopods 1–4 with exopods in normal form. Pleopods completely absent from first 2 pleonites (Fig. 1C) and even a trace of their rudiments is not detected by a careful examination under a stereoscopic microscope.

Etymology. The specific name is referred to the type locality, the Japanese waters.

Remarks. Since *Atlantistylis* Reiss, 1975 was established by the type species, *A. chauvini* based on 18 specimens, including both sexes, from bathyal and abyssal depths in the tropical Atlantic, between Dakar and Recife, the genus has been monotypic. The new species, *A. japonica* is described herein, based only a single adult male holotype without pleopods and can be added from bathyal depth in the north-western Pacific, the Japanese waters. It is closely allied to *A. chauvini*, from which it is easily distinguished in the following points: 1) the former has more spinose carapace, pereon, and 2 pleonites, 2) much projected and moderately arched pseudorostrum and 3) thickly club-shaped antennular peduncle with round distal segment bearing a large tuft of long fine sensory hairs.

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