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GASTROPTYCHUS CAVIMURUS SP. NOV., A NEW CHIROSTYLID (CRUSTACEA, DECAPODA, ANOMURA) FROM OFF THE WESTERN COAST OF SOUTH AMERICA

by

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With three text-figures

During the second cruise of the Japanese Research Vessel "Kaiyo Maru" to the western coast of South America in 1968-69, Dr. Osame Tabeta of the Shimonoseki University of Fisheries, then on the staff of the Kyushu University, collected a number of galatheids off the northern Peruvian coast. All of those specimens have been placed at my disposal. Among them were a pair of chirostylids, careful examination of which showed that they belonged to an undescribed species of the genus *Gastroptychus*. In the meantime I also had a chance to examine unidentified galatheids in the collection of the Rijksmuseum van Natuurlijke Historie, Leiden, and found two chirostylids taken from off Ecuador, which proved to be identical with the Peruvian species. The opportunity is here taken to describe the new species as *Gastroptychus cavimurus*. The holotype and two paratypes are deposited in the collection of the Rijksmuseum van Natuurlijke Historie, Leiden (RMNH), and one paratype is to be sent to the Smithsonian Institution, Washington, D.C.

I am grateful to Dr. L. B. Holthuis for allowing me to study the Ecuadorian specimens. Dr. Osame Tabeta kindly made the Peruvian galatheids available to me for study. I thank Dr. Fenner A. Chace, Jr. of the Smithsonian Institution for reviewing the manuscript.

***Gastroptychus cavimurus* sp. nov.** (figs. 1-3)

Material. — Holotype: ovigerous female, RMNH, reg. no. Crust. D. 31282; 3°43'S 81°07'W; 388 m; 16 December 1968; coll. by O. Tabeta. Paratypes: 1 male, collected with holotype; 2 ovigerous females, RMNH, reg. no. Crust. D. 31383. Gulf of Guayaquil, Ecuador; 450-500 m; trawled; 2 May 1967; coll. by G. Ricauter; Sta. 504, Inst. Nac. Pesca, Ecuador.

Description of holotype. — Carapace (fig. 1a, b) narrow anteriorly, broad posteriorly, less than twice as long as greatest breadth, including rostrum. Dorsal surface densely covered with small but sharp spines. Pair of spines at rostral base distinctly larger. Anterior and posterior regions separated by distinct median transverse concavity; posterior region more inflated dorsally. No other distinct regions. Cervical groove indistinct. Lateral margins subparallel on anterior half, considerably convex on posterior half.

Rostrum (fig. 1a, b) well developed, spiniform, directed obliquely upward. Outer orbital angle rounded.

Pterygostomian flap (fig. 1a, b) visible from above, covered with spinules, with deep concavity near pleural suture at posterior limit of anterior third.

Abdomen (fig. 1a, b) also spinous, with two slightly elevated transverse ridges on second, third, and fourth segments. Pleura of second to fifth segments acutely triangular. Telson deeply constricted at midlength.

Eyes well developed, cornea moderately dilated.

Basal segment of antennule simple, devoid of spines distally. Antennal peduncle (fig. 2a) consisting of five segments; ultimate segment about three times as long as penultimate, with distoventral spine; antennal scale completely absent; first segment with outer marginal spine of small size.

Third maxilliped (fig. 2b) with large ventral spine on basis; inner toothed ridge of ischium well developed, with minute denticles on proximal two-thirds, more or less pronounced teeth on distal third; merus and carpus each with distal outer marginal spine.

Anterior margin of sternum of third thoracic somite (fig. 2c) produced forward, with paired spines, each laterally placed. Following sternal segment not distinctly separated from preceding, with two lateral marginal spines on each side, lateralmost stout and much larger; surface with two longitudinal rows of four spines each, anteriormost spine smallest, anterior second also small and located slightly outside of longitudinal line, others moderate-sized.

Chelipeds slender, subcylindrical, spinous, 4.8 times as long as carapace including rostrum. Seven longitudinal rows of spines on arm through palm; palm about 13 times as long as broad, shorter than wrist, one and half times as long as fingers. Fingers (fig. 2d) slightly gaping in proximal half, tips spined, directed inward; cutting edges with rather distinct tubercles, thickly furnished with short fine setae on gaping portion; outer margin of movable finger with four spines proximally and two accompanying spinules slightly dorsal to them.

Walking legs (fig. 2e) similar, slender, spinous, furnished with short setae distally. Merus with six longitudinal rows of spines, about twice as long as carpus. Carpus shorter than propodus, both segments with six rows of

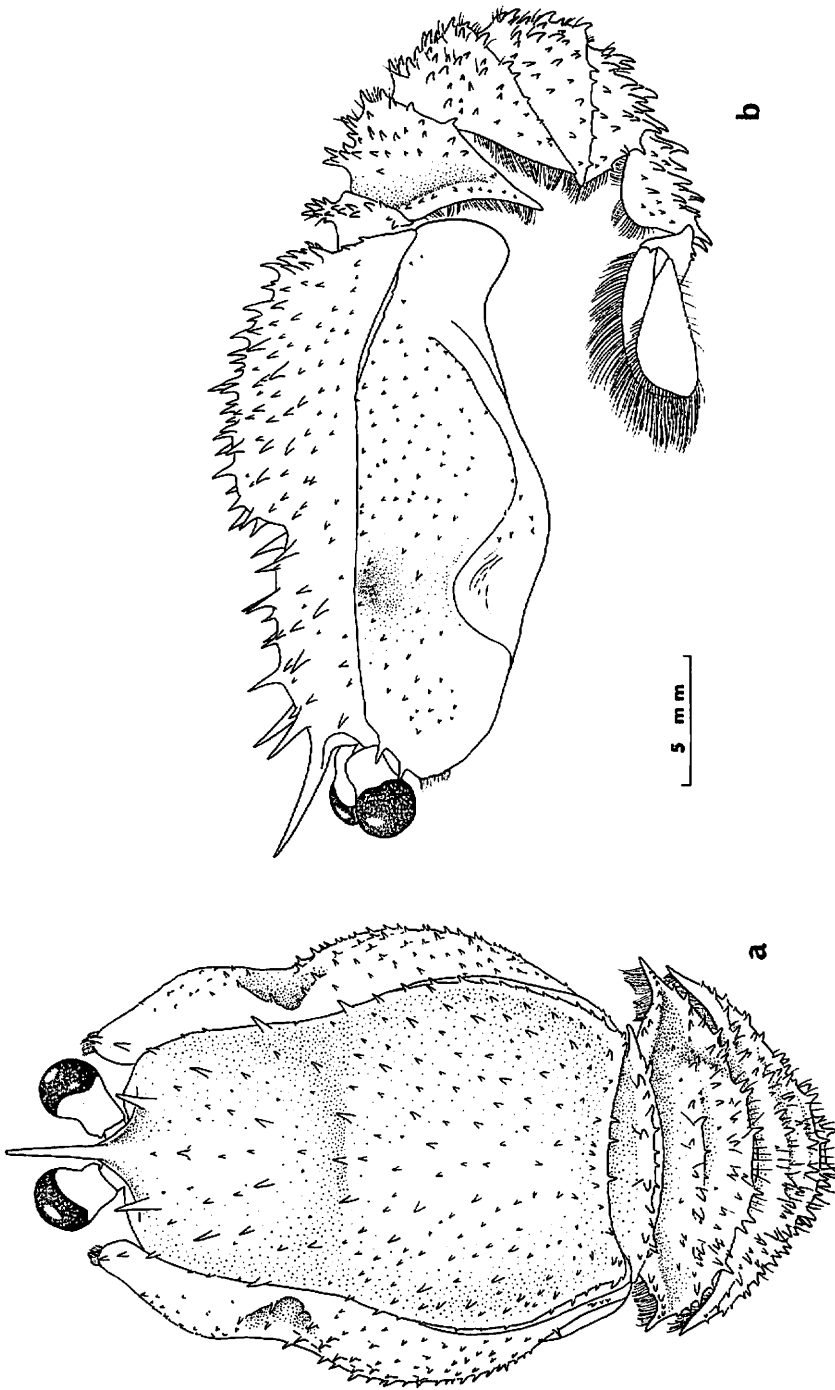


Fig. 1. *Gastroptychus cavimurus* sp. nov., holotype, ovigerous female. a, carapace and abdomen, dorsal view; b, the same, lateral view.

spines: two dorsal, two ventral, two lateral; inner marginal row of propodus consisting of 26 slender movable spines. Dactylus slightly less than one-third of propodus length, curving inward distally; ten inner marginal spinelets decreasing in size toward base of segment.

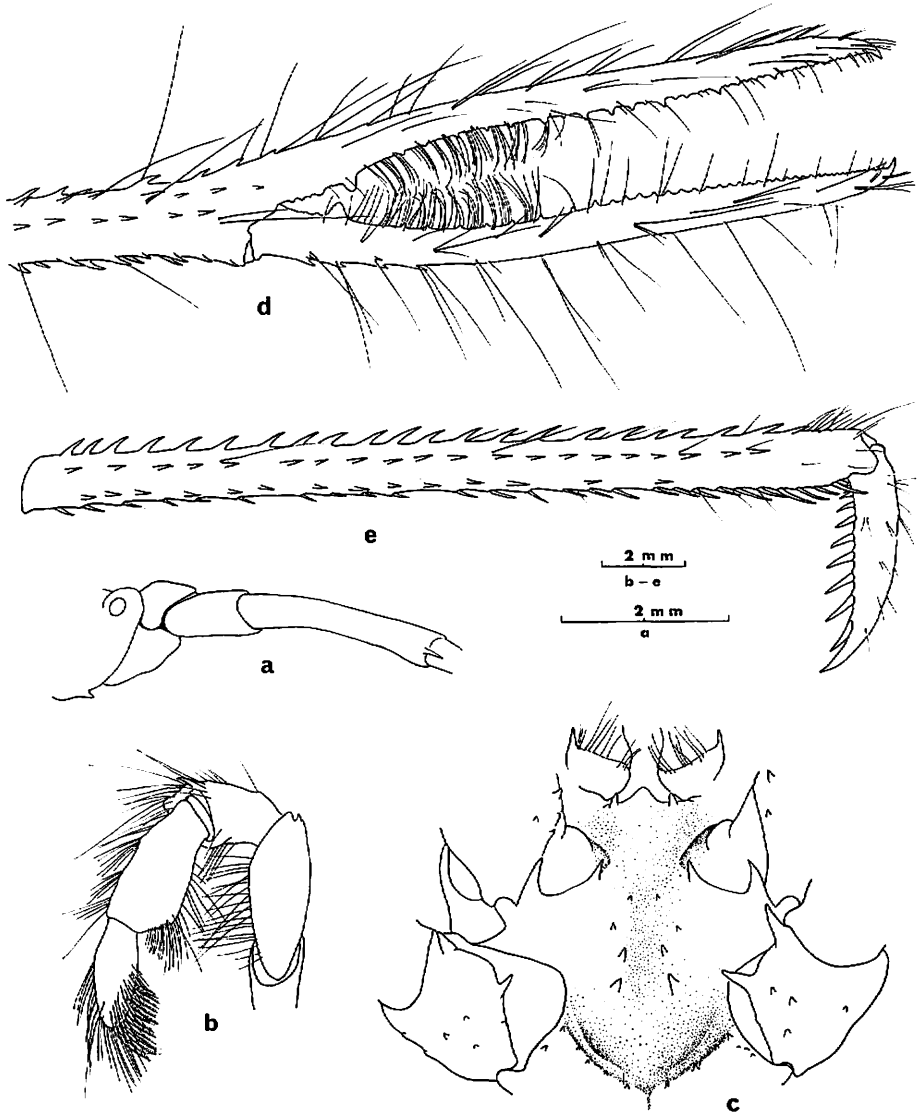


Fig. 2. *Gastroptychus cavimurus* sp. nov., holotype, ovigerous female. a, left antennal peduncle; b, endopod of left third maxilliped; c, anterior part of sternal segments; d, fingers of left chela; e, distal two segments of right first walking leg.

Pleopods in male paratype. — Two pairs of pleopods present. Endopod of first pleopod (fig. 3b, c) thin, elongate, deeply concave dorsally, with distal flap curved back over concave surface. Endopod of second pleopod (fig. 3d, e) setose, distally widened, slightly folded distoposteriorly, with prominent setose projection on distoventral portion.

Variation. — One of the ovigerous female paratypes has the third maxilliped with a more or less pronounced tubercular tooth on the proximal portion of the outer margin of the merus; this is indistinct, however, in the holotype as well as in other two paratypes. The sternal segment of the third thoracic somite is variably spinose: two paratypes, the male and one of the ovigerous females, have two longitudinal rows of three spines each (fig. 3a), that distinctly diverge posteriorly; the holotype is as described, but the other ovigerous female paratype bears an additional small spine behind and inside of the usual posteriormost large spine. The pterygostomian flap has two pronounced spines on the anterior portion in the Peruvian specimens including the holotype, while in the Ecuadorian specimens there are another two to four spinules behind the usual two.

Measurements of holotype (mm). — Length of carapace including rostrum, 22.5; breadth of carapace, 13.0.

Length of cheliped, 107.0 (left), 110.1 (right); of coxa and basi-ischium, 8.7 (left), 8.8 (right); of merus, 36.5 (left), 37.2 (right); of carpus, 24.5 (left), 25.6 (right); of propodus, 22.3 (left), 23.0 (right); of dactylus, 15.0 (left), 15.5 (right).

Length of the segments of the right walking legs, first, second, and third, respectively: merus, 33.1, 29.8, 28.4; carpus, 17.8, 15.8, 16.0; propodus, 19.7, 19.8, 21.2; dactylus, 5.9, 5.5, 5.1.

Measurements of paratypes. — Male from off Peru 23.1 mm, ovigerous females from off Ecuador 22.7+ and 30.4 mm in carapace length. Ovum 1.7 mm in diameter.

Remarks. — So far only three species of the genus *Gastroptychus* have been reported from the eastern Pacific: *G. milneedwardsi* (Henderson) from southern Chile; *G. defensus* (Benedict) from off the Galapagos Islands; and *G. perarmatus* (Haig) from off California. Of these the closest relative to the new species is *G. milneedwardsi* which is characterized by a spinous abdomen. The present species however is distinguished by having the propodus of the third maxilliped unarmed, the carapace with more numerous spines, and the spination of the abdominal segments not arranged in distinct transverse rows.

As regards the generic name, Miyake & Baba (1968) proposed the validity of *Gastroptychus* Caullery as distinct from the true *Chirostylus* Ortmann

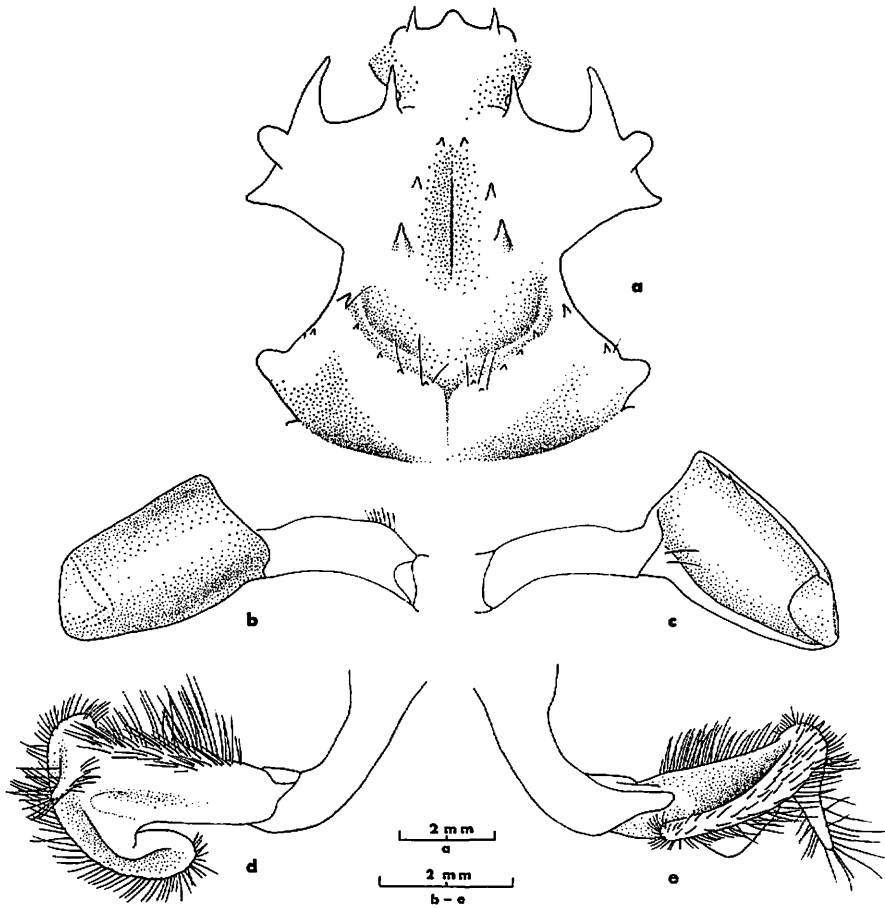


Fig. 3. *Gastroptychus cavimurus* sp. nov., paratype, male. a, anterior part of sternal segments; b, left first pleopod, ventral view; c, the same, dorsal view; d, left second pleopod, ventral view; e, the same, dorsal view.

because of the presence of both the rostrum and the antennal scale. Subsequently Pike & Wear (1969) and Baba (1974) followed this opinion for the New Zealand species. In the present species, however, the antennal scale is completely absent, the probability of its absence being suggested by Haig (Baba, 1974). Because of the presence of the rostrum, which seems to be a trenchant character, *Gastroptychus* is used here for the time being.

Etymology. — From *cavus* (L., = hollow, concave) + *murus* (L., = wall), in reference to deep concavity on pterygostomian flap.

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