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In a small collection from an edge of the continental shelf of the East China Sea, the eleven interesting species were found. Two of them were proved to be new to science. One, *Stylodactylus major*, was already described by the present authors (HAYASHI & MIYAKE, 1968). The other, *Pasiphaea sinensis* sp. nov. is described herewith, which is characterized by a large size, a carinated carapace and abdomen, and a deeply forked telson.

The authors express their deep gratitude to Mr. Hideo YAMASHITA of the Seikai Regional Fisheries Laboratory for sorting out these specimens and donating them to the Zoological Laboratory, Faculty of Agriculture, Kyushu University. The authors are also indebted to Mr. R. W. INGLE of the British Museum, for his kind information of the type of *Pasiphaea acutifrons* (BATE) and to Dr. J. C. YALDWYN of the Dominion Museum, for his valuable advice.

Pasiphaea sinensis sp. nov.

(Fig. 1)

Type. East China Sea, 29°27.2′N, 128°16.2′E–29°33.3′N, 128°23.5′E, depth 1065–1075m, December 6, 1967, time 11 : 15–13 : 37, Kaiyo-Maru, leg. H. YAMASHITA —1 ♂ (holotype), 1 ♀ (paratype); 29°49.3′N, 128°23.7′E–29°48.5′N, 128°27.0′E, depth 780–1000m,

1) Contributions from the Zoological Laboratory, Faculty of Agriculture, Kyushu University, No. 434.

December 13, 1967, time 08 : 45–09 : 45, Kaiyo-Maru, leg. H. YAMASHITA —1 ♂ (paratype). The type specimens are deposited at the Zoological Laboratory, Faculty of Agriculture, Kyushu University.

Description of holotype. Body large and compressed, measuring 130 mm in length. Carapace entirely carinate on middorsal line. Lateral surface of carapace with an obtuse suprabranchial carina. Anterior margin produced dorsally into a blunt, convex lobe. Orbital angle bluntly produced as far anteriorly as level of dorsal lobe. Branchiostegal spine produced outward. A small, rounded process present between orbital angle and branchiostegal spine. Branchiostegal sinus deep. Rostrum is a post-frontal elevation of sharp dorsal carina of carapace. Anterior margin of rostrum distinctly convex, overreaching rostral apex.

First abdominal somite not dorsally carinate. Second to fifth somites sharply carinate dorsally. Pleura of first five somites not pointed posteriorly. Sixth somite carinate dorsally in anterior two-thirds and its posterior third not carinate and somewhat flattened. Pleura of sixth somite bluntly bilobed posteriorly. Lateral plate triangular at top. Lateral surface of sixth somite with a shallow, curved longitudinal groove. No posterior spines on any somites. Telson as long as sixth somite and grooved dorsally. Distal margin of telson deeply forked with about ten spinules on inner margin of sinus.

Eyes well-developed, cornea rounded and broader than eyestalk. Antennular peduncle rather stout, reaching middle of antennal scale. First segment as long as distal two segments combined. Stylocerite relatively large and apically pointed upward, reaching end of first segment of antennular peduncle. Second segment slightly shorter than third. Outer flagellum about twice as long as carapace and enlarged in about basal 18 joints. Inner flagellum shorter and more slender than outer flagellum. Antennal scale 3.7 times as long as broad. Outer margin convex, ending in a strong distal tooth. Basicerite with a well-developed tooth on outer distal end. Carpocerite not extending to middle of scale.

Third maxilliped reaching end of antennal scale. Ultimate segment twice as long as penultimate and slightly longer than antepenultimate. Exopod well-developed, reaching middle of penultimate.

First pereiopod reaching with entire fingers and two-thirds length of palm beyond antennal scale. Fingers pectinate on cutting edge and its tips curved and crossed one another. Palm 1.3 times as long as fingers and bearing a row of about 10 movable spines on inner and outer ventral margins. Carpus about 2.5 times as long as palm. Distoventral corner of carpus with a broad triangular tooth. Merus 1.3 times as long as palm. Six (right) or seven (left) fixed spines present on anterior three-fifths of ventral margin. Some movable slender spinules also present among and behind them. Ischium about 2.5 times as long as merus and having some slender spines on ventral

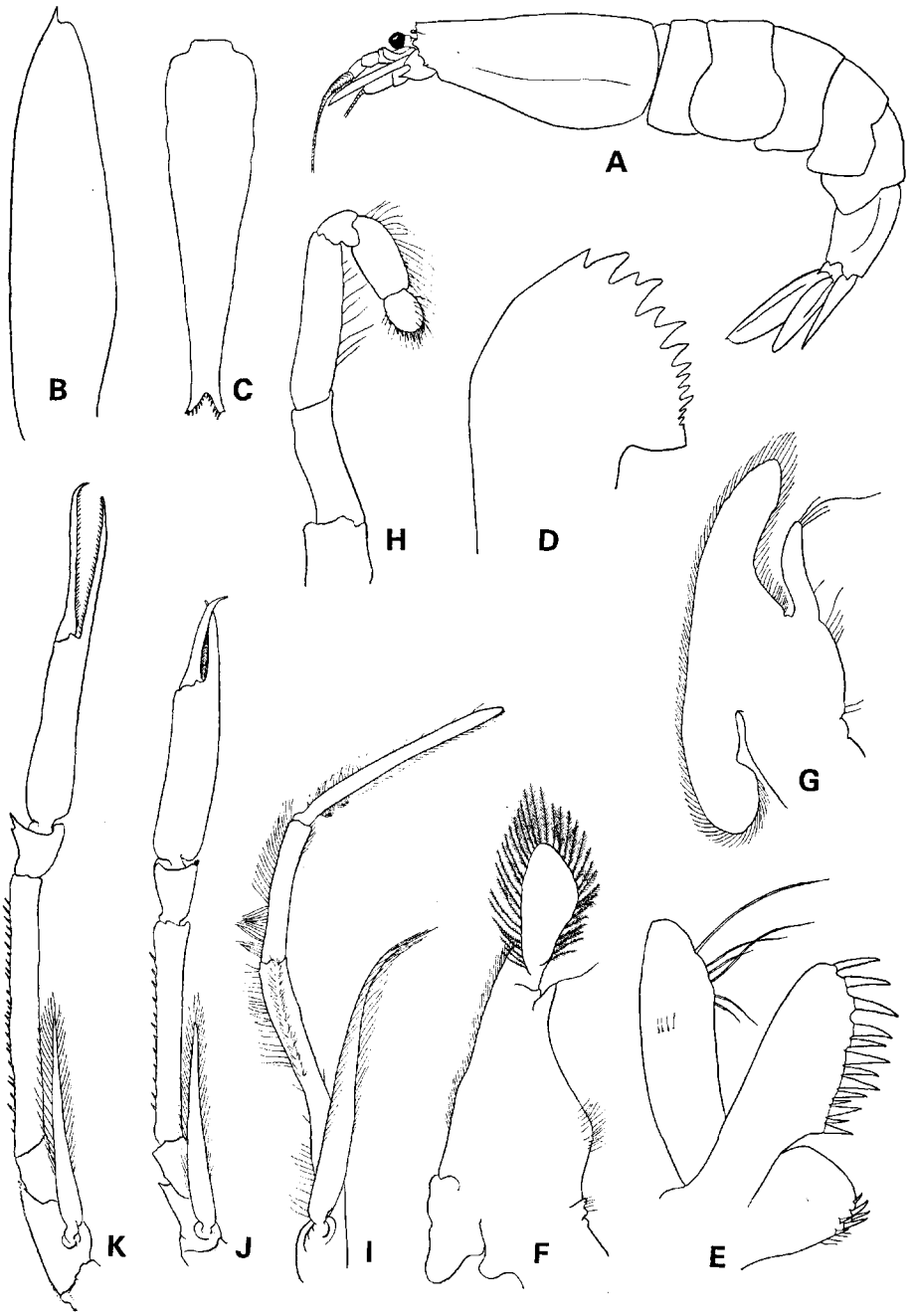

Fig. 1. *Pasiphaea sinensis* sp. nov. A, paratype in lateral view, appendages removed, ×0.5; B, antennal scale in paratype, × 2.8; C, telson in holotype, × 2.8; D, mandible in paratype, × 4.6; E, maxillule in paratype, × 5.3; F, maxille in paratype, × 2.8; G, first maxilliped in paratype, × 2.9; H, second maxilliped in paratype, × 3.0; I, third maxilliped in paratype, × 1.6; J, first pereiopod in paratype, × 1.6; K, second pereiopod in paratype, × 1.6.

margin. Basis with a stout, broad triangular process on ventral margin. Second pereiopod reaching with fingers and half of palm beyond antennal scale. Fingers elongate and slender, being 1.5 times as long as those of first pereiopod. Cutting edge pectinate, with tips being crossed one another as in first pereiopod. Palm 1.2 times as long as fingers and having a row of about 13 spinules on inner ventral margin. Carpus a little less than one-third length of palm. Distoventral corner ending in a stout spine. Merus about 1.5 times as long as palm. Entire ventral margin with 19 (right) or 21 (left) fixed spines. Ischium a little less than one-third length of merus. Basis bearing a strong distoventral tooth. Third pereiopod slender and unarmed. Dactylus and distal part of propodus missing on both sides. Carpus slender and short. Merus long and cylindrical. Ischium 2/9 times as long as merus. Fourth pereiopod reaching slightly beyond ischiomeral articulation of second pereiopod. Dactylus bearing long stiff hairs along anteroventral margin. Propodus less than 3 times as long as dactylus. Carpus slightly longer than dactylus. Ventral margins of entire propodus and anterior third of carpus with short thickly-implanted hairs. Merus somewhat longer than propodus and carpus combined. Ischium 1.4 times as long as carpus. Fifth pereiopod reaching middle of second pereiopod. Dactylus broad and rounded distally. Propodus one-third length of dactylus. Carpus 2.5 times as long as propodus and slightly longer than ischium. Merus 2.6 times as long as carpus. All pereiopods provided with well-developed exopods.

First pleopod with ovate endopod. A short appendix interna with some retinaculae at top. Endopod of second pleopod bearing a slender appendix interna and a short appendix masculina. Following three pleopods bearing slender appendix interna. Uropod elongate, longer than telson. Exopod longer than endopod. Outer margin of exopod almost straight and produced into a simple tooth, reaching beyond posterior margin of exopod. Diaeresis distinctly marked.

Description of paratypes. The male paratype is much larger than the holotype, more than 175 mm in body length, the apex of the telson being damaged. Carapace and abdomen are more distinctly carinate in the paratype than in the holotype.

Distinct carina peresent on posterior two-fifths of first abdominal somite, which is not sharply carinate in the holotype. Ventral margin of merus with 8 (right) or 22 (left) spines in first pereiopod and 22 (right) or 27 (left) spines in second pereiopod.

Mandible composed of incisor process only. Proximal endite of maxillule small and rounded, distal endite strongly toothed and endopod armed with several simple setae. Maxilla bearing simple well-developed endopod and large scaphognathite, but no distinct endities. Exopod of first maxilliped large and lamellar, endopod very small, with a simple setae terminally and epipod large. Second maxilliped simple without epipod or exopod, distal segment attached terminally to penultimate segment.

The female paratype coincides well with the holotype and shows about equal size.

Meral spines of first and second pereiopods 13 (right) or 12 (left) and 29 (right) or 27 (left), respectively. Telson deeply incised, but right half of incision damaged. Left half of incision bearing eight spines and presumably one more spine present here.

Remarks. The present new species belongs to the group having the carinated carapace and abdomen, and the deeply forked telson. Four species has been actually known in this group. Examining the Chilean decapod crustaceans, HOLTHUIS (1952) points out *P. forceps* A. MILNE EDWARDS is synonymous with *P. acutifrons* BATE. SIVERTSEN & HOLTHUIS (1956) revise four much confused species from North Atlantic and come to the conclusion that *P. princeps* SMITH, *P. principalis* SUND and *P. tarda* KRÖYER are synonymous for one species, which is distinct from *P. multidentata* ESMARK.

BATE's (1888) type material of *P. acutifrons*, however, consists of two specimens collected from far remote localities, one from Patagonia, the other from southern Japan. HOLTHUIS (1952) selects the former as the lectotype of *P. acutifrons*, with some doubts as to the homogeneity of this type material. Through the kind information of Mr. R. W. INGLE of the British Museum, England, we know the Japanese specimen of *P. acutifrons* has been missing from the collection of the British Museum (Natural History). It is impossible, therefore, to actually establish whether BATE's material is homogeneous or not. Apart from the homogeneity of BATE's type material, if the Japanese specimen is exactly identical with BATE's description, the new species is easily distinguished from it by the same characters as the new species separated from the other members of this group including the Patagonian *P. acutifrons* as mentioned below.

The new species may be distinguished from these species by the following characters. *P. sinensis* is much larger than all the species but *P. tarda*, which is as large as or larger than the new species. In the species except for *P. tarda*, the rostrum is a slender, procurved post-frontal spine, which is more or less ascendant from the dorsal carina of the carapace, while in the new species it is a post frontal elevation of carina of the carapace. According to SIVERTSEN & HOLTHUIS (1956), the rostrum of *P. tarda* is strongly variable in shape. In general it is the elongation of dorsal carina of the carapace, not distinctly ascendant from the level of the carina. The juvenile specimens (less than about 20 mm in carapace length) have the short and high rostrum, its apex not extending beyond the tip of the frontal lobe, but in the larger specimens the rostrum is long and extends beyond the tip of the frontal lobe, though in the large specimens with Ellobiopsid parasites the rostrum is deformed and similar to that of the juvenile. The rostrum of the new species is somewhat similar to those of the deformed rostrum of *P. tarda*.

The spines on each merus of the first and second pereiopods are 2 to 6 and 7 to 11, respectively, in *P. acutifrons* reported by HOLTHUIS, 1952, 0 to 3 and 8 to 19 in *P. pacifica* by RATHBUN, 1902 and STEBBING, 1914, 0 to 8 and 1 to 18 in *P. tarda* by SMITH,

1884 and KEMP, 1910, and 2 to 30 and 7 to 47 in *P. multidentata* by KEMP, 1910 and FIGUEIRA, 1957. In the new species there are 6 to 22 spines on the merus of the first pereiopod and 19 to 27 on that of the second pereiopod. In this respect *P. sinensis* is allied to *P. multidentata*, but it differs from the latter by the spination of basis of the second pereiopod, in addition to the differences of the body size and the shape of the rostrum. In *P. multidentata* there are 8 or 9 spines reported by KEMP, 1910 or one or two irregular rows of spines by FIGUEIRA, 1957 on the basis of the second pereiopod, while there is a single distoventral spine in the new species.

The other caridean shrimps collected during the survey are as follows.

1) 30°53.2′N, 127°26.0′E–30°44.0′ N, 127°29.0′E, depth 122–124 m, Dec. 5, 1967, time 13.50–15.50: *Acanthephyra eximea* SMITH (3♂♂), *Stylodactylus major* HAYASHI et MIYAKE (3♀♀), *Heterocarpus dorsalis* BATE (1♂), *Pandalopsis coccinata* URITA (2♂♂, 1 ovig. ♀, 2♀♀).

2) 29°27.2′N, 128°16.2′E–29°33°3′N, 128°23.5′E, depth 1065–1075 m, Dec. 6, 1967, time 11.15–13.37: *Acanthephyra eximea* SMITH (3♂♂, 1♀), *Plesionika martia* (A. MILNE EDWARDS) (1♂, 1♀), *Glyphocrangon smithii* WOOD MASON et ALCOCK (1♂, 1 ovig. ♀), *Glyphocrangon gilesii* WOOD MASON et ALCOCK (1 ovig. ♀).

3) 30°03.3′N, 127°48.0′E–29°56.5′N, 127°47.0′E, depth 362–396 m, Dec. 13, 1967, time 15.20–17.15: *Heterocarpus sibogae* DE MAN (2♀♀), *Plesionika ensis* (A. MILNE EDWARDS) (2♂♂), *Plesionika martia* (A. MILNE EDWARDS) (1♂).

4) 31°05.8′N, 128°0.29′E–31°00.0′N, 127°56.6′E, depth 158–188 m, Dec. 14, 1967, time 08.20–10.20: *Parapandalus spinipes* (BATE) (1 ovig. ♀).

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