

**A NEW SPECIES AND A NEW RECORD OF AMPHIPODA
(CRUSTACEA) FROM THE GULF OF MANNAR**

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THE present paper gives descriptions and figures of a new species and a new record of amphipods of the family Gammaridae, collected from the Gulf of Mannar. *Maera mannarensis* sp. nov. was previously doubtfully referred to a different genus (Sivaprakasam, 1968) due to paucity of material. With the collection of more material and re-examination of the old material, it was found to be a new species. *Elasmopus japonicus* Stephensen, previously known from Japan and South Africa, has now been recorded for the first time from India.

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Family GAMMARIDAE

Genus *Maera* Leach

Maera mannarensis sp. nov.

(Figs. 1-2)

Material and Types : 1 male collected from seaweeds at Cape Comorin, Gulf of Mannar ; 2 males from seaweeds at Appa island, near Kilakkarai, Gulf of Mannar. Length 8.0-9.0 mm. Male holotype collected from Appa island has been deposited in the National Zoological Collections, Zoological Survey of India, Calcutta (Reg. No. C 8/2).

Description of the male : Body smooth, with short setules on dorsal surface. Head nearly as long as first two segments. Lateral lobes nearly straight in front and rounded below. Eyes dark, oblong and twice as long as broad. Side plates as described below. Epimeral plates 1 and 2 with a pointed tooth at posterolateral corner and a larger one above on hind margin. Epimeral plate 3 with a pointed, upturned tooth at posterolateral corner followed on hind margin by a sinus and 3 other teeth.

Antenna 1 about $\frac{3}{5}$ as long as body. Peduncle as long as flagellum, 1st joint stout, shorter than 2nd and with a stout distal spine on lower margin. 3rd joint $\frac{1}{3}$ as long as 1st. Flagellum with 26-29 joints and accessory flagellum with 4-5 joints. Antenna 2 slender and more setose. Peduncle reaches end of 2nd peduncular joint of antenna 1. 4th joint longer than 5th and as long as flagellum which has 11 joints.

Mouth parts typical of the genus. Upper lip broader than long, widest near the base and somewhat rounded below and with short setules. Mandible with stout, triangular body. Primary cutting plate 2-dentate as also the accessory one.

Spine row with 6-8 serrate spines. Molar oval. Palp slender and rodlike. 1st joint short and widening distally. 2nd joint longer and stouter than 3rd, both with long setae on inner margin. Lower lip with rounded inner lobes and outer lobes dense with short setules. Maxilla 1 with plate rounded and with 3 stout setae apically. Outer plate with 7-8 toothed spines. Palp robust, 2nd joint longer than 1st and apically with 8 stout spine-setae. Maxilla 2 as usual. Maxilliped well-developed. Inner plate reaching middle of 2nd joint of palp, apically truncate with stout setae. Outer plate large, oval, nearly reaching end of 2nd joint of palp and inner and apical margins with curved spines, gradually increasing in length. Palp with 2nd joint nearly thrice as long as 1st. 3rd joint oval and 4th acute-tipped.

Gnathopod 1 slender and setose as figured. Side plate with front margin concave and ending in a pointed tooth. Lower margin with a few setae and a tooth near postero-inferior corner. 2nd joint stout and setose. 4th joint as long as 3rd, apically with some stout setae and a circlet of brushlike setae. 5th joint shorter than 6th and the broad hind margin densely setose. 6th joint elongate, narrower than 5th. Palm shorter than hind margin, oblique and with 4-5 spines and dense setae. Dactylus slender and as long as palm. Gnathopod 2 dimorphic. Left one large and robust. Side plate deeper than long, with a few setules on lower margin and a tooth near postero-inferior corner. 2nd joint stout and setose. 3rd and 4th joints subequal in length, the latter distally produced into an acute point. 5th joint very short, triangular and hind lobe narrow with brushlike setae. 6th joint very large, oblong-oval and semi-cylindrical. Along front margin on inner aspect are 10 sets of setae and along hind margin there are 7 sets of setae. Palm narrow and well-differentiated. Following hinge of dactylus is a flat-topped, bifid tooth with 2 long spines. This is followed by deep, rounded sinus with a spine, which runs down and ends in a large acute tooth, followed on hind margin by a smaller tooth which define the palm. Along the palm on inner aspect, runs a ridge with close-set setae and a long spine near the defining tooth. Dactylus very stout, strongly curved, its acute tip resting in the groove on inner aspect of 6th joint. Right gnathopod 2 is underdeveloped and somewhat like gnathopod 1. 6th joint oblong with both margins setose. Palm oblique, the prominence near the hinge of dactylus with 3 pairs of spines, followed by concave part which forms an angle with hind margin and with 2 pairs of spines, one near the middle and the other near the palmar angle.

Peraeopods 1 and 2 alike. Side plate quadrate, rounded below, with a tooth near postero-inferior corner. 2nd joint $1\frac{1}{2}$ as long as depth of side plate, very narrow proximally and broad distally and with a few long setae on both margins. 4th joint $\frac{1}{2}$ as long as 2nd, broad and spinous on front margin. 5th and 6th joints narrow and subequal in length. Dactylus stout, with a stout spine on inner margin. Peraeopods 3-5 stout and very spinous and almost identical except for increasing length. Peraeopod 3 with side plate bilobed. 2nd joint oblong, $\frac{3}{5}$ as long as broad, hind margin nearly straight or a little concave in the middle and with about 13 teeth. Peraeopod 4 with side plate not bilobed. 2nd joint as described above but larger. Peraeopod 5 with side plate small. 2nd joint large, oval, hind margin convex and toothed. Other joint broad and very spinous. Dactylus stout, the curved distal part forming a 'chela' with the strong spine on inner margin.

Uropods stout, and spinous. Uropods 1 and 2 of same extent and uropod 3 extending much beyond others. Uropod 1 with peduncle stout and longer than rami, with a stout spine near the base and a long spine distally. Inner ramus longer than outer. Uropod 2 with peduncle as long as outer ramus and inner margin with 2 long distal spines. Inner ramus longer than outer. Uropod 3 with

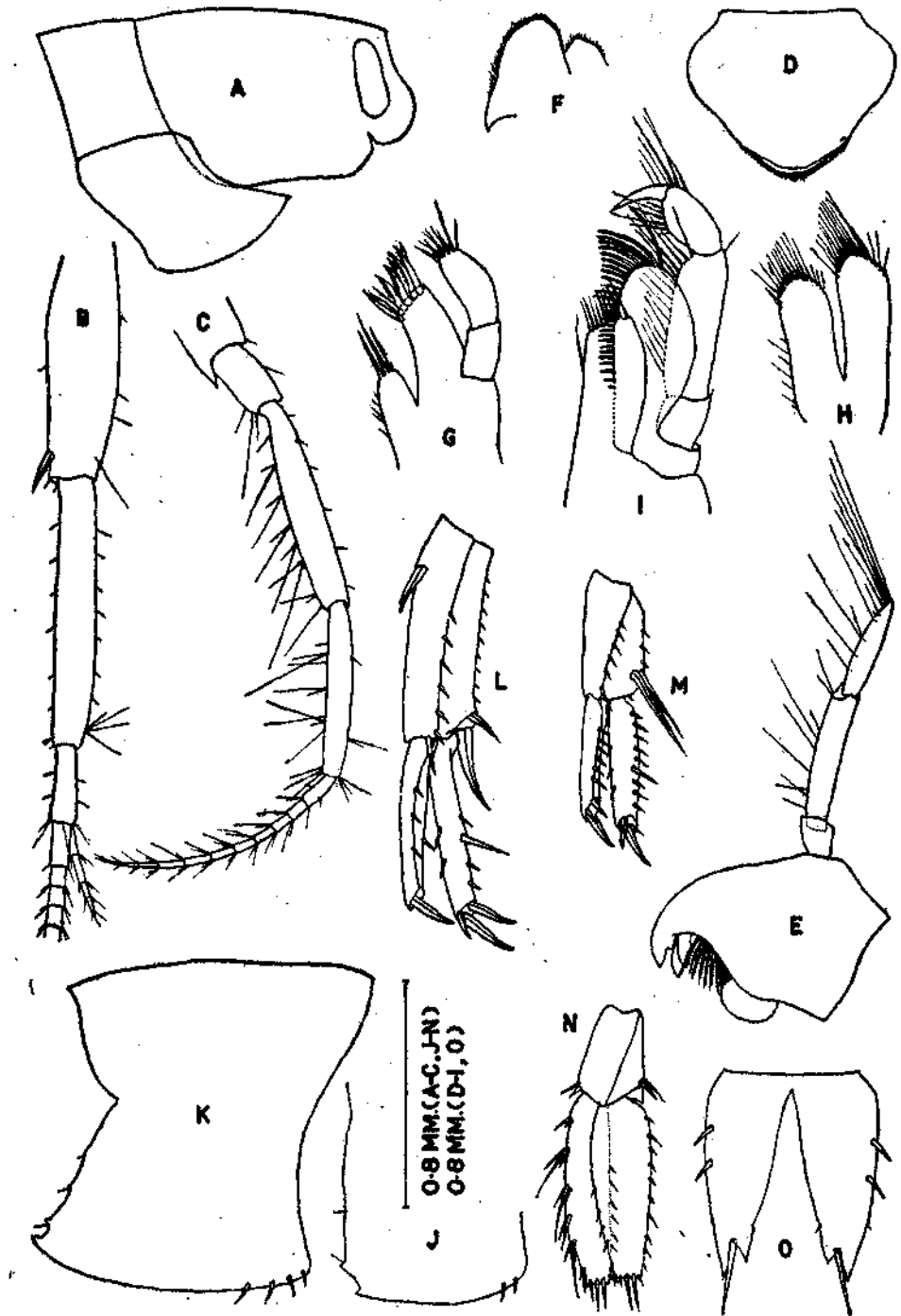


FIG. 1. *Maera mannarensis* sp. nov. Male: A. head; B, C. antennae 1 and 2; D. upper lip; E. mandible; F. lower lip; G. maxilla 1; H. maxilla 2; I. maxilliped; J, K. epimeral plates 2 and 3; L, M, N. uropods 1, 2 and 3; O. telson.

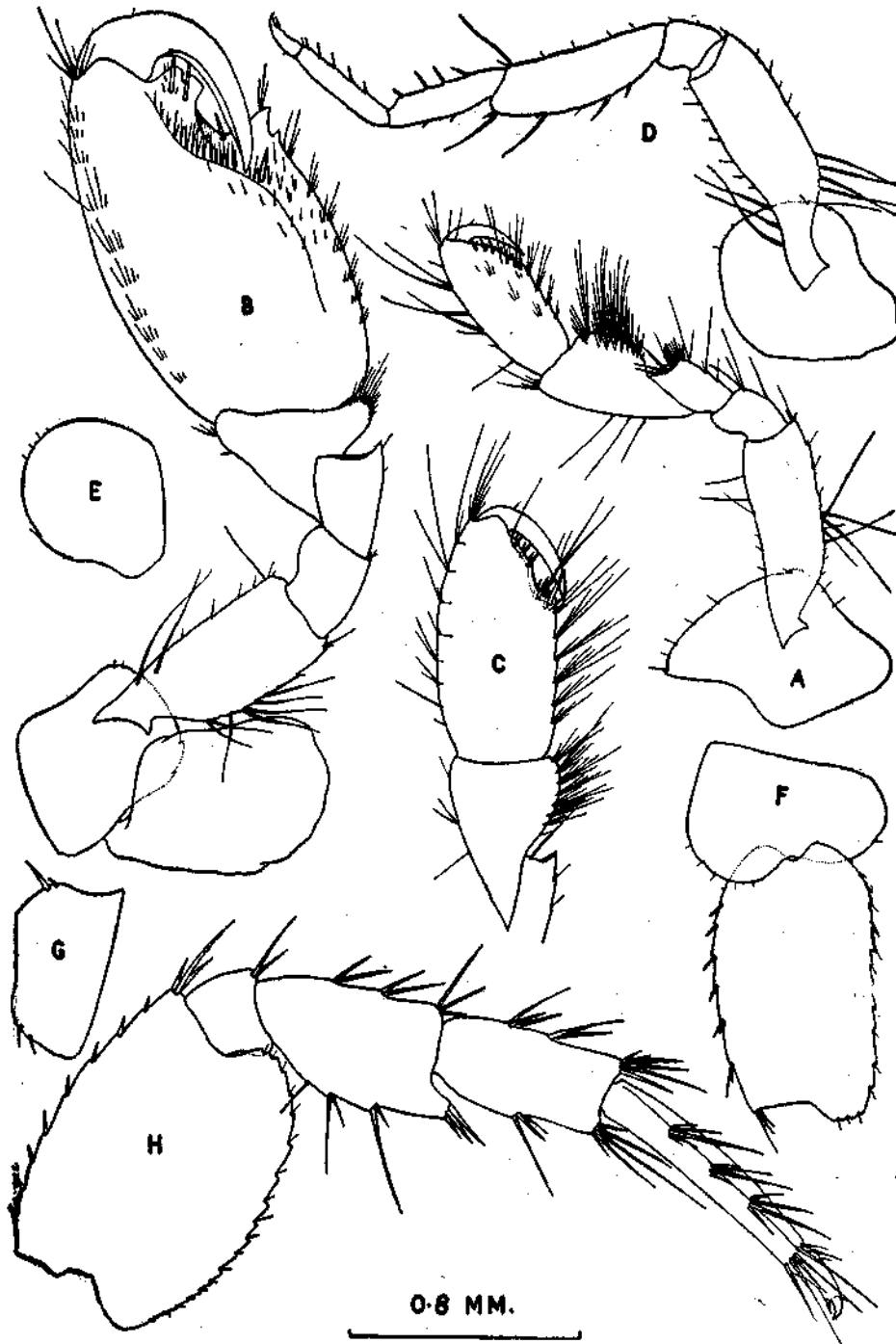


FIG. 2. *Maera mannarensis* sp. nov. Male: A. gnathopod 1; B. left gnathopod 2; C. right gnathopod 2; D. pereopod 1; E. pereopod 2, side plate; F. pereopod 3; G. pereopod 4, side plate; H. pereopod 5.

peduncle half as long as rami which are subequal. Outer ramus narrower than inner, both spinous on both margins.

Telson longer than broad, deeply incised. Lobes narrowing distally, deeply notched apically and with a long spine in the notch, with a setule near this inner and outer margins and 2 spines on outer margin near the middle.

Female : Not known.

Remarks : The new species can be distinguished from other known species of the genus *Maera* (32 valid species listed by Barnard, J. L., 1958) by the form of the eyes and lateral lobes, the structure of the gnathopods, the shape of the 2nd joint and dactylus of the pereopods, the epimeral plates, the relative lengths of the uropods and the telson.

The author (1968) was mistaken earlier in assigning the specimen from Cape Comorin to the genus *Ceradocoides*, though with some doubt. This was due to an apparently setose condition formed by dust particles on inner margin of inner plates of maxillae 1 and 2.

Genus *Elasmopus* Costa

Elasmopus japonicus Stephensen

(Figs. 3-5)

Elasmopus japonicus Stephensen, 1932, p. 490, figs. 1-2.
Barnard, K. H., 1940, p. 461.

Elasmopus spinimanus Barnard, K. H., 1925, p. 358 (*non* Walker).

Material : Nearly a hundred specimens collected at Cape Comorin from the zoantharians and seaweeds. Length upto 14.5 mm.

Description of the male : Body with short setules on dorsal surface. Head $1\frac{1}{2}$ times as long as 1st segment. Lateral lobes broadly rounded. Post-antennal lobe narrow and rounded. Eyes moderate-sized, dark and oval. 1st urosome segment with a smooth triangular process on its posterior half. Posterolateral corner of epimeral plates with a small, pointed, upturned tooth, and hind margin with 6-7 setules.

Antennae robust and with long stiff setae. Antenna 1 less than half the body length. Peduncle slightly shorter than flagellum, 1st joint as long as 2nd and with 3 spines on lower margin and 3rd joint about half as long as 2nd. Flagellum stout and compressed, with 25-30 joints and accessory flagellum with 4 joints. Antenna 2 slenderer, about half as long as antenna 1 and reaching 12th flagellar joint of the latter. 4th joint of peduncle slightly longer than 5th. Flagellum with 10-12 joints.

Mouth parts typical of the genus. Upper lip symmetrically rounded and widest near the base. Lower lip with short setules and 2 spiniform tubercles on outer lobe. Inner lobes smaller. Mandible with primary cutting plate tridentate and accessory 5-dentate. Spine row with 3 spines. Molar stout with a plumose seta. 2nd joint of palp shorter than 3rd, setose on inner margin. 3rd joint strongly falcate, with about 35 setae of which the distal 3 are long. Maxilla 1 with 2 stout and plumose

setae on apex of inner plate. Outer plate apically with 7 dentate spines. 2nd joint of palp setose on apical and inner margins. Maxilla 2 with inner plate half as broad as and a little shorter than outer and both densely setose. Maxilliped robust and well-developed as usual in the genus.

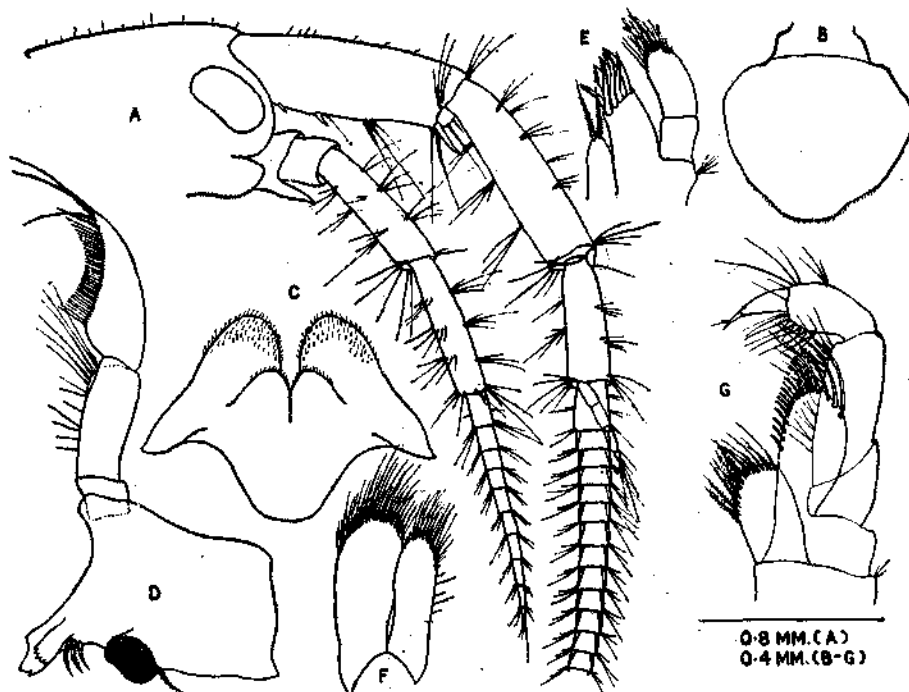


FIG. 3. *Elasmopus japonicus* Stephensen. Male: A. head; B. upper lip; C. lower lip; D. mandible; E. maxilla 1; F. maxilla 2; G. maxilliped.

Gnathopod 1 robust. Side plate conically rounded in front, with short setules on lower margin. 2nd joint stout, with long setae on hind margin. 4th joint with long setae distally on hind margin and below this a group of short, stiff setules. 5th joint longer than 6th, inner surface and hind margins with long setae. 6th joint elongate-oval in form, inner surface and hind margin with long setae. Palm oblique, slightly convex and defined by 2 spines. Dactylus slender and as long as palm. Gnathopod 2 very large. Side plate oblong, rounded below. 2nd joint stout, with a few long setae on hind margin. 5th joint short and cup-shaped, with brushlike setae on hind lobe. 6th joint large and elongate-oval in form. Front margin and inner surface along this margin setose. Hind margin continuous with palm; the whole margin and the inner surface along this margin with long, dense setae which are as long as the width of the joint and plumose on one side. The rounded process on palm near hinge of dactylus has 7 strong, curved spines, gradually increasing in length on its margin and 2 stout and 2 small spines below this inner surface. Dactylus stout and falcate, curved near the base and coarse on inner margin.

Pereopod 1 with side plate oblong. 2nd joint stout and curved and longer than the side plate. 4th joint widening distally and with a long spine distally on

front margin. 5th and 6th joints spinous on hind margin as figured. Dactylus stout and curved, with 2 spine-setae on inner margin. Peraeopod 2 identical with the former except in the side plate which is deeper and excavated slightly on hind margin. Peraeopods 3-5 robust, strongly spinous, increasing in size and differing mainly in joints 1 and 2. Peraeopod 3 with side plate large and bilobed and hind lobe with 3 strong spines. 2nd joint large and sub-oblong in form, front margin convex and spinous and hind margin with shallow serrations, each with a setule. 4th and 5th joints spinous on both margins. 6th joint spinous on front margin only. Peraeopod 4 with side plate smaller and bilobed and with 3 spines on hind lobe. 2nd joint oblong-oval in form and hind margin serrate. Peraeopod 5 with side plate small. 2nd joint very large, oval and hind margin serrate and angularly produced at proximal and distal ends.

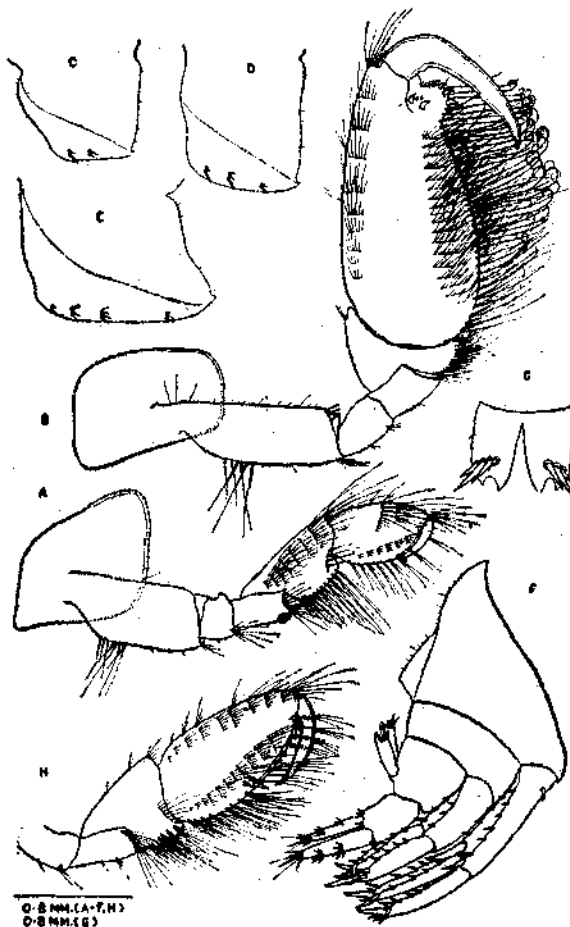


FIG. 4. *Elasmopus japonicus* Stephensen. Male: A. gnathopod 1; B. gnathopod 2; C, D, E. epimeral plates 1, 2 and 3; F. urus; G. telson. Female: H. gnathopod 2.

Uropods stout and very spinous. Uropod 1 with peduncle $5/4$ as long as rami which are subequal. Uropod 2 with peduncle as long as outer ramus which is

slightly shorter than inner. Uropod 3 extends slightly beyond others. Inner ramus as long as peduncle, with 2 fascicles of spines on inner and outer margins and apically flat with spines and setae. Outer ramus $\frac{4}{3}$ as long as inner, with 2 fascicles of spines in 2 notches on outer margin, 2 spines on distal half of inner margin, a pair of spines on lower surface near the base and apically flat with long spines and setae.

Telson broader than long, cleft to the base. Each division distally narrowing and notched deeply at the apex, with a spinule on outer margin near the middle and an oblique row of 3 spines above the notch on dorsal surface.

Description of the female : Similar to the male except in the gnathopod 2. Gnathopod 2 with joints 1-4 as in male. 5th joint not short, about $\frac{2}{3}$ as long as 6th. Front and hind margins setose. 6th joint elongate-oval in form. Front and hind margins and the inner surface along these margins setose. Palm very oblique, slightly convex and continuous with hind margin, with 7-8 pairs of spinules and 7 sets of setae on its margin and defined by a long and 2 small spines. Dactylus as long as palm and acute-tipped.

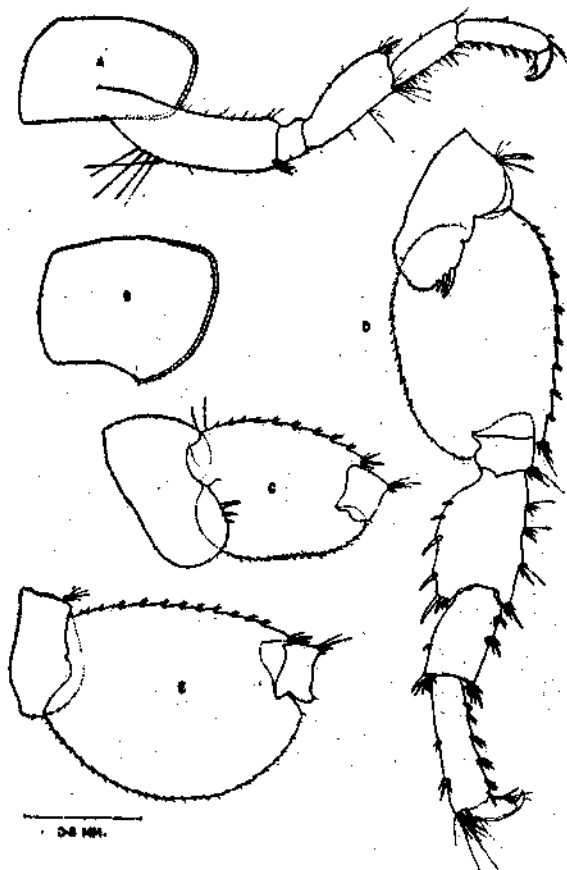


FIG. 5. *Elasmopus japonicus* Stephensen. Male :
A. peraeopod 1; B. peraeopod 2, side plate; C. peraeopod 3;
D. peraeopod 4; E. peraeopod 5.

Remarks : While agreeing well with Stephensen's (1932) description and figures the present material differs from it in some respects. The dorsal process on 1st urosome segment in female is not markedly different from that of the male. The form of the eyes is oblong rather than oval. Antenna 1 has 3 spines on 1st joint of peduncle and the flagellum is robust. Gnathopod 1 has a group of bristlelike setae on 4th joint, as in *Melita* spp. Side plates 5 and 6 have strong spines on lower margin. Uropod 1 has peduncle markedly longer than inner ramus.

Distribution : Japan and South Africa. This is the first record of this species from India.

SUMMARY

A new species of amphipod, *Maera mannarensis* and a new record, *Elasmopus japonicus* Stephensen are described and figured.

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