ADDITIONS TO THE MYSIDACEA OF KERALA

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W. M. Tattersall (1922) gave a list of all the species of mysids recorded from the Indian region till then and added twenty six species bringing the total to fifty three. Since then, Nouvel (1954) recorded *Mesopodopsis zeylanica* from Ceylon. O. S. Tattersall (1957) described *Rhopalophthalmus chilkensis* and *R. kempi* based on the material previously assigned by W. M. Tattersall to *R. egregius*. In my previous paper (Pillai, 1957) two species, *Afromysis dentisinus* and *Acanthomysis pelagica* (Pillai) were described. Thus the total number, so far recorded from the Indian waters, is fifty seven. The following species described here are further additions.

Siriella quilonensis sp. nov.
Rhopalophthalmus tattersallae sp. nov.
Rhopalophthalmus indicus sp. nov.
Acanthomysis anomala sp. nov.
Lycomysis platycauda sp. nov.
Heteromysis macropsis sp. nov.

Order MYSIDACEA

Suborder MYSIDA

Family Mysidae

Subfamily *SIRIELLINAE*

Genus **Siriella** Dana

Siriella Hansen, 1910, p. 27.
Siriella W. M. Tattersall, 1922, p. 448.

This genus could be easily distinguished by the circlet of long setae at the distal end of the propodus of thoracic appendages three to eight. Specific identification, however, is difficult as the individuals even after reaching maturity continue to grow accompanied by changes in many of the important diagnostic characters.

The genus includes a very large number of species, majority of them shallow water forms. Nine species have so far been recorded from the Indian waters.

Siriella quilonensis sp. nov.

Pl. I, figs. A—G

Carapace produced into a triangular rostrum, apically blunt and reaching the base of the eye-stalks in male ; in the female slightly more produced, apically acute and overreaching the base of the eye-stalks.

Antennule stout, second segment very short. Antennal scale showing sexual dimorphism ; in the male comparatively short, reaching the middle of the third segment of the antennular peduncle and of almost uniform width throughout, antennal peduncle slightly shorter than the scale. In the female, the apex of the scale is produced, almost reaching the distal border of the antennular peduncle and regularly broadening distalwards, its apex reaching far beyond the outer spine ; antennal peduncle short, about two thirds the length of the scale and the antennal sympod with a large outer spine.

Thoracic appendages stout, merus as long as carpus and propodus combined, the latter not divided into subsegments. Carpus only very faintly demarcated, half as long as the propodus, distal border of propodus with a circlet of twenty to twenty five long setae. Dactylus with the distal border oblique and carrying a stout lower distal spine, unguis twice as long as dactylus and apically curved.

Pseudobranchiæ of first pleopod nearly straight, rami subequal, inner ramus curved and with three stout setae, outer ramus straight and with three proximal and one distal seta. Pseudobranchiæ of second pleopod spirally coiled, inner ramus stouter than outer, with three stout setae. Pleopods without modified setae.

Exopod of uropod slightly overreaching the endopod, proximal segment with four outer spines in male and three to four in female, distal segment twice as long as broad. Endopod clearly overreaching telson, its inner border with about ten equally spaced long spines alternating with groups of one to four small spines. Telson rather broad, reaching the distal border of the first segment of the exopod of the uropod, two and a half times as long as broad. Basal part very much bulged and the middle region convex, producing an indistinct waist just above, apex broadly rounded. Lateral border with fourteen spines, the two proximal spines separated from the third by a short spineless interval, distal spines few, showing a

tendency to fall into series, every third spine being small; distal border with three pairs of long subequal spines and three small median ones.

Length 10.0 mm.

Remarks

Superficially these specimens resemble *S. affinis* Hansen as described by W. M. Tattersall (1922), but they clearly show sexual dimorphism in the rostrum and the antennæ which W. M. Tattersall did not observe in his specimens. Probably his specimens were immature.

S. quilonensis sp. nov. shows sexual dimorphism in the rostrum and the antennal scale as in *S. affinis* Hansen, but the rostrum is more produced, reaching or even overreaching the base of the ocular peduncle while in *S. affinis* it does not reach the peduncle of the eye. The lateral border of the telson is straight in *S. affinis* but in *S. quilonensis* it is convex in the middle, with an indistinct waist just above and the spines on the lateral borders are fewer in *S. quilonensis* and show a tendency to fall into series of three. Moreover in the present species the spines on the inner border of the endopod of the uropod are of two types, long and short, the long spines alternating with groups of short ones. If this feature was present in *S. affinis* Hansen would have noticed it.

S. quilonensis sp. nov. could be distinguished from *S. vulgaris* Hansen, by its shorter rostrum, shorter apex of the antennal scale and its sexual dimorphism and particularly by the apically subtruncate or broadly rounded telson with fewer spines. It is clearly intermediate in character between *S. affinis* and *S. vulgaris*.

Subfamily *RHOPALOPHTHALMINAE*

Genus **Rhopalophthalmus** Illig

Rhopalophthalmus O. S. Tattersall, 1957, p. 82.

Till recently this genus contained only two species *R. flagellipes* Illig and *R. egregius* Hansen. The latter species was recorded from widely distant parts in the Indo-pacific and characters not observed by Hansen were added by several workers. O. S. Tattersall (1957) revised the genus and the material till then discribed as *R. egregius* was separated into six species, *R. egregius* Hansen (*sensu restricto*) and five new species. The material from the Chilka lake previously described as

R. egregius was redescribed as *R. chilkensis* and that from Portughese India as *R. kempi*.

The specimens previously collected from Trivandrum were described as *R. egregius* (Pillai, 1957). On reexamining it in the light of O. S. Tattersall's revision, it turned out to be a new species for which the name *R. tattersallae* is proposed. A collection taken from the estuarine waters at Kayamkulam contained a hitherto unrecorded species. The four species so far known from India may be distinguished thus :—

1. Carapace without dorso-median tubercles, antennal sympod with three subsimilar spines, lateral border of telson with sixteen spines..... *chilkensis.*

1. Carapace with dorso-median tubercles, antennal sympod with four or more dissimilar spines.....2.

2. Cheeks of carapace evenly concave, thoracic endopods three to seven with four carpopropodal segments, vestigial endopod of eighth thoracic limb longer than basal segment of exopod..... *kempi.*

2. Cheeks of carapace sinuous, thoracic appendages three to seven with four to seven carpo-propodal segments, vestigial endopod of eighth limb not longer than basal segment of exopod.....3.

3. Antennal sympod with five dissimilar spines arranged like a cone, rostrum very short..... *indicus.*

3. Antennal sympod with four spines, third spine with four or five strong barbs, rostrum produced..... *tattersallae.*

Rhopalophthalmus tattersallae sp. nov.

Pl. I, figs. H—R ; Pl. II, figs. A—B.

Carapace short, produced into a prominent apically rounded triangular rostrum covering the base of the antennular peduncle. Post-orbital spine prominent and continued backwards as a fairly prominent ridge, cheeks sinuous, dorso-median tubercles two, one posterior submarginal and the other immediately behind the cervical sulcus.

Antennal scale reaching the distal margin of the antennular peduncle, sympod with four strong spines, first two comparatively short and subequal, third slightly

longer than fourth and with four to five strong barbs. Antennular peduncle with two hook-like setæ on second segment and four similar setæ on third. Eyes stout, reaching the distal border of the second segment of antennular peduncle.

Thoracic appendages fairly stout, first with a triangular apically narrow basal prolongation carrying stout setæ. Endopod of legs three to seven slender, strongly setose, propodus subdivided into three segments making altogether four carpopropodal segments. Eighth thoracic endopod in male two-segmented, distal border of first segment with four long stout setæ and distal segment with two apical and one subapical seta; in the female endopod rather slender and two-jointed, with a single seta, apex of distal segment with a minute cusp, sometimes terminating in a seta.

First abdominal segment of male with the pleura produced into a semicircular lobe. Exopod of second pleopod in male thirteen to fourteen-segmented, with two apical and one subapical pectinate seta, endopod ten-segmented.

Telson similar to that of *R. chilkensis* O. S. Tattersall, broadest in the middle where the lateral spine row begins, lateral border with thirteen spines, progressively increasing in length distalwards, last spine a little less than half as long as the outer distal spine, distal border with four stout spines, inner pair slightly longer, all the four armed with fairly broad subsidiary teeth.

Length 13.3 mm.

Occurs sporadically in the inshore plankton at Trivandrum.

Remarks

This species closely resembles *R. orientalis* O. S. Tattersall and to some extent *R. kempi* O. S. Tattersall. From the latter it can be distinguished by the spinulation of the telson and the shape of the rostrum which is much more produced than in *R. kempi*. In *R. kempi* the spines on the antennal sympod are like those of *R. tattersallae* but the barbs are absent. The vestigial endopod of the eighth limb is totally different in the two species. It is, however, not easy to distinguish the present species from *R. orientalis*. The lateral spines on the telson and the subsidiary teeth arming the distal species are very much similar in the two species but in *R. orientalis* the subsidiary teeth are broader and obliquely truncate. Both species possess only four corpo-propodal segments on the thoracic endopods. Nevertheless, the following characters distinguish *R. tattersallae* from *R. orientalis*. The rostrum is much more produced and the cheeks of the carapace

are sinuous. The antennal sympod is armed with four dissimilar spines, third spine with four to five large barbs. Vestigial endopod of eighth thoracic limb is two-segmented in both sexes.*

Rhopalophthalmus indicus sp. nov.

Pl. II, figs. C—L

Fairly large sized species reaching a length of 17.0 mm. but comparatively slender. Carapace with dorso-median nodules, anteriorly forming a wide, obtuse, rather inconspicuous rostrum very much like that of *R. kempi* O. S. Tattersall. Cheeks evenly concave, more or less as in *R. kempi*, showing a very slight sinuosity. Antennule and antenna as in *R. kempi* but the antennal sympod with five spines arranged in the form of a cone, resembling *R. dakini* O. S. Tattersall in this character. The two dorsal spines and the long outer spine together form a regular series; the two ventral spines are very small.

Endopod of thoracic limbs one and two profusely setose, propodus with spine-like dactylus and several feebly barbed spines, more or less as in *R. chilkensis* and *R. dakini*. Endopod of legs three to seven with five to six carpopropodal segments. Vestigial endopod of eighth leg in male rather stout, as long as the basal segment of the exopod, two-segmented and the proximal segment with a semicircular distal row of seven large setae; in the female two-segmented and straight, basal segment with one seta.

Peduncle of second pleopod in male with a stout plumose seta, exopod eleven-segmented and endopod ten-segmented.

Telson rather stout, waist-like region less conspicuous than in *R. tattersallae*, lateral border with fourteen slender spines, outer distal spines longer and more pointed than the inner; subsidiary teeth small and sharp.

Length 15–17 mm.

A large number of specimens were collected from the Kayamkulam lake.

Remarks

In the structure of the telson, vestigial endopod of the eighth thoracic limb and in the nature of the other legs this species shows a close resemblance to

* I am grateful to Dr. O. S. Tattersall who kindly compared my specimens with the specimens of *R. orientalis* in her possession and found them different.

R. chilkensis which was also collected from brackish water. But in *R. indicus* sp. nov. the rostrum is slightly more produced and the spines on the antennal sympod are totally different. In the last character *R. indicus* remotely resembles *R. dakini* but in the latter species the spines are far more numerous and arranged like a perfect cone. In the shape of the rostrum and the cheeks of the carapace *R. indicus* resembles *R. kempi* but differs in the number and arrangement of the spines on the antennal sympod and the eighth thoracic limb.

Subfamily *GASTROSACCINÆ*

Genus **Gastrosaccus** Norman

Gastrosaccus Hansen, 1910, p. 55.
Gastrosaccus W. M. Tattersall, 1915, p. 151.
Gastrosaccus Id., 1922, p. 151.
Gastrosaccus O. S. Tattersall, 1957, p. 107.
Gastrosaccus Pillai, 1957, p. 4.

The more important characters of the species occurring in this locality and a key for their identification have been given in my publication cited above. Since then I have been able to examine a very large collection. In the following descriptions characters hitherto unnoticed are discussed.

Of the six species so far recorded from the Indian region I have not been able to examine specimens of *G. pacificus* and *G. bengalensis*.

1. Lateral border of telson with two types of spines, groups of small ones alternating with large ones . . . . . .*kempi*

1. Lateral border of telson with only one type of spines 2

2. Posterior border of carapace with filaments 3

2. Posterior border of carapace without filaments 4

3. Apex of antennal scale below level of outer spine, telson with fourteen lateral spines (some of the spines small) . . . . .*muticus*

3. Apex of antennal scale above level of outer spine, telson with eight to ten lateral spines (all the spines in a series) . . . .*simulans*

4. Posterior border of carapace with two large reflexed lappets, endopod of uropod with fourteen to fifteen spines, spines in the telsonic sinus long and bent inwards . . . . . .*dunckeri*

4. Posterior border of carapace without lappets, spines in the telsonic sinus short and straight 5

5. Telson with twelve lateral spines, penultimate spine much longer than ultimate . . . . . .*pacificus*

5. Telson with thirteen lateral spines, last two pairs subequal, much longer than the antepenultimate . . . . . .*bengalensis*

Gastrosaccus kempi W. M. Tattersall

Pl. II, figs. M—R ; Pl. III, figs. A—B

Gastrosaccus kempi W. M. Tattersall, 1922, p. 460, figs. 7 a-d.
Gastrosaccus kempi Pillai, 1957, p. 8, fig. III 8-9.

When this species was first described it was the only one possessing groups of small spines alternating with long ones on the telson. Since then, O. S. Tattersall (1952) recorded another species, *G. gordonæ*, showing the same peculiarity. This prompted a careful study of *G. kempi* which revealed certain characters hitherto not observed.

Carapace produced into a fairly prominent triangular rostrum reaching almost the middle of the peduncle of the eye, posterior border deeply emarginate, with a pair of triangular lobes directed inwards and slightly backwards; margin of carapace in front of the lobes arched and that behind with a deep notch, with overlapping rounded lobes, very much as in *G. gordonæ*.

Antennular peduncle rather stout, first segment almost as long as the other two combined, second segment with three spines and the third with one spine and a stout distal process; antennal peduncle longer than the scale, distal end of scale slightly overreaching the outer spine.

Eighth thoracic endopod with thirteen carpopropodal segments, each segment with an outer spine having a small trigger like spinule.

Pleopods one and two in male biramous, exopod nine-segmented and endopod seven to eight-segmented; some of the setae on the exopod with their basal part irregularly toothed on the inner side. Exopod of third pleopod four-segmented basal segment with four subdivisions; in one of the specimens dissected, the second segment with a faint indication of a division, distal segment with a small median seta and two long barbed spines, the longer of the two, three times as long as the

shorter. Pleopods four and five with endopod reduced to a single segment carrying a few sparsely plumose setæ and an oblique row of four to five strong pectinate setæ, exopod seven-segmented. Telson with eight lateral spines (only seven in one specimen) alternating with groups of three to five smaller ones, the latter confined to the distal half of the lateral border. Apical sinus with a maximum of seventeen spines. Exopod of uropod with thirteen to fifteen spines and endopod with twelve.

Length 8.1 mm.

Sparingly found in the plankton.

Remarks

According to O. S. Tattersall, the following characters distinguish *G. gordonæ* from *G. kempi*. 1. Telson is longer and narrower, with smaller spines. 2. Endopod of third male pleopod is seven-segmented against six-segmented in *G. kempi*. 3. Posterior border of carapace carries two median inwardly directed lobes. The comparative measurements of the telson and its spinulation and the number of segments of the pleopods usually show slight intraspecific variation and are not very dependable characters. O. S. Tattersall distinguishes *G. gordonæ* from *G. kempi* by the structure of the third male pleopod and the shape of the posterior border of the carapace. As may be seen from the above description W. M. Tattersall's description of *G. kempi* is incomplete. In *G. kempi* the endopod of the third pleopod of the male is seven-segmented and its basal lobe has more than one large plumose seta and the segments of the exopod do not become progressively shorter as illustrated by W. M. Tattersall. The fourth segment is longer than the third and subequal to the second, almost as in *G. gordonæ*. The presence of inwardly directed lobes on the posterior median part of the carapace in *G. kempi* narrows down the difference between the two species considerably. However, the shape of the lobes is slightly different in the two species. It appears that *G. gordonæ* is very close to *G. kempi* if not synonymous.

The presence of bluntly toothed setæ on the pleopods was first noticed in *G. kempi* and subsequently in *G. gordonæ*. In all the species contained in the present collection, a varying number of setæ on the proximal part of the exopod of the first two pleopods, especially of the second, are toothed to a varying extent. This feature is likely to be present in other species also, and is evidently not of any specific importance.

Gastrosaccus muticus W. M. Tattersall

Pl. III, figs. C – H

Gastrosaccus muticus W. M. Tattersall, 1915, p. 152, fig. 1.
Gastrosaccus muticus Pillai, 1957, p. 4, fig. II 1-5.

W. M. Tattersall (1915) gave a detailed description of the variation in the structure of the third pleopod of the male. The present collection contains a few apparently mature males in all of which the exopod of the third pleopod is like that of form B described by him. The ultimate segment has two rather long but simple spines and a stout flattened process with oblique parallel grooves. The apex carries two spines, both barbed, the longer of the two is very stout and twice as long as the other. In no specimen was the ultimate segment flat or with bifid spines as in form A.

Some of the setæ on pleopods one and two are toothed as in *G. kempi*. The posterior border of the carapace has invariably nine filaments in adults and a pair of notches with rounded overlapping edges. The lateral border of the telson has fifteen spines, some of which are smaller than the adjacent ones. Endopod of uropod with four subequal equidistant spines and the exopod has fifteen spines on the external border.

Gastrosaccus simulans W. M. Tattersall

Pl. III, figs. I – J

Gastrosaccus simulans W. M. Tattersall, 1915, p. 155, fig. 1c.
Gastrosaccus simulans Pillai, 1957, p. 6, fig. II 6-8.

In immature specimens and just hatched young, W. M. Tattersall observed a spine-like process on the dorsal side of the fifth abdominal segment. I examined a large number of specimens but failed to find this. The penultimate segment of the third pleopod of the male is apically bulged and distally drawn out into an apically acute, triangular process; last segment is curved like an elongated 'S' and carries two stout feebly serrated and grooved spines, the short apical spine is about a third of the long spine and barbed on both edges, the long spine is characteristically bent in the middle and armed on one side with long slender barbs.

Pleopods one and two have some of the setæ toothed.

Posterior border of the carapace has six filaments and a pair of notches exactly as in *G. muticus*; the outer border of the carapace shows a deep groove running inwards, more or less opposite the notch on the posterior border; rostral projection is very small.

Gastrosaccus dunckeri Zimmer

Pl. III, figs. K – N

Gastrosaccus dunckeri Zimmer, 1915, p. 165, figs. 13-18.
Gastrosaccus dunckeri W. M. Tattersall, 1922, p. 459.
Gastrosaccus dunckeri Pillai, 1957, p. 7, fig. III 1-7.

A combination of characters makes the identification of this species comparatively easy. As observed by W. M. Tattersall the posterior lobes of the carapace are larger than those of any other species. The distal spines arming the telsonic sinus are long and characteristically bent inwards making them touch or even cross at the median line.

As in *G. muticus* the telson has fifteen lateral spines and some of them at intervals are small, but in *G. dunckeri* there is a spineless area between the last two lateral spines and the shape of the telson also is different in the two species. The endopod of the uropod has eighteen spines as against four in *G. muticus*. The exopod of the third pleopod in the male is different in the two species.

Subfamily *MYSINÆ*

Tribe Mysini

Genus **Acanthomysis** Czerniavsky

Neomysis W. M. Tattersall, 1922, p. 483.
Neomysis Id., 1932, p. 317.
Acanthomysis Ii., 1936, p. 588.
Acanthomysis W. M. Tattersall, 1951, p. 203.
Acanthomysis Tattersall, W. M. & O. S., 1951, p. 409.

As proposed by W. M. Tattersall (1932), Ii (1936) transferred species of *Neomysis* with apically rounded antennal scale to *Acanthomysis* and placed fifteen species under the latter. Since then several species have been added.

Neomysis, *Acanthomysis*, *Proneomysis* and *Paracanthomysis* are very much similar and the only reliable distinguishing character is the number of segments in the exopod of the fourth pleopod of the male. *Neomysis* alone has an apically pointed antennal scale. In *Acanthomysis* the exopod of the fourth pleopod of the male is two-jointed, in *Proneomysis* three-jointed and in *Paracanthomysis* single-jointed.

The four species, including the new species, so far known from India may be distinguished thus:—

1. Lateral border of telson with two types of spines, groups of small spines alternating with long ones ....*indica*

1. Lateral border of telson with nearly uniform spines, ...2

2. Distal two thirds of lateral border of telson spiny, apical spines similar, abruptly longer than the last lateral spine .....*hodgarti*

2. Distal half of lateral border of telson spiny, apical spines dissimilar, only moderately longer than the last lateral spine 3

3. Second segment of expod of fourth pleopod of male about one fourth the length of first .....*anomala*

3. Second segment of exopod of fourth pleopod of male one eighth the length of first.....*pelagica*

Acanthomysis anomala sp. nov.

Pl. IV, figs. A–L

Body short but stout, very much like that of *A. pelagica* (Pillai). Cephalon short, leaving the last thoracic segment exposed, rostrum short and apically rounded. Cheeks of carapace sinuous, antero-lateral corners produced into a feeble spine, cervical sulcus dorsally prominent. Eyes stout, oblong, reaching beyond the distal border of second segment of antennular peduncle. Antennular peduncle short but stout, third segment equal to the first two combined. Inner flagellum very short, ten to fifteen-segmented, accessory lobe moderately setose. Antennal scale apically rounded, reaching beyond the distal extremity of the antennular peduncle, sympod with a spine at the base of the scale.

Mandible with molar strong and produced, palp very short, second segment much flattened, third with several long setae and short barbed ones. Maxillule and maxilla as in other species. Peræopods one and two as in *A. pelagica*, peræopods

three to eight with the endopod very short but stout, with three carpopropodal segments, all segments sparsely setose.

Fourth pleopod of male barely reaching the base of the telson. Endopod very short, unsegmented, with a row of setæ, pseudobranchial lobe prominent and with four setæ, exopod two-segmented, distal segment with a median constriction foreshadowing a division, distal border of both segments with a pair of small setæ. Apical spines subequal, very feebly barbed. At the base of the outer distal spine is a third small segment separated from the second by a distinct septum carrying a small seta.

Telson elongate triangular, slightly less than twice as long as broad, proximal part of lateral border with two spines, distal part with fifteen spines increasing in length distalwards, some of the spines at irregular intervals smaller. Distal border with two pairs of spines, outer pair very stout, more than twice as long as the inner. Exopod of uropod longer than endopod, endopod with two to three spines below the statocyst.

Length 6.0 mm.

Remarks

This species very closely resembles *A. pelagica* (Pillai) but is distinguishable by the much longer second segment of the exopod of the fourth pleopod of the male. In the shape of the eyes, palp of the mandible and the thoracic endopods there are recognisable differences. In *A. pelagica* there is a stout pectinate spine at the base of the dactylus of thoracic endopods three to eight, but these spines are absent in *A. anomala* sp. nov.

The fourth pleopod of the male is rather peculiar but since the collection contains only a single male this cannot be confirmed.

In *A. hodgarti* (W. M. Tattersall), *A. dybowski* (Deshawin) *A. pseudomacropsis* (W. M. Tattersall) and *A. pelagica* (Pillai) a minute third segment is present on the exopod of the fourth male pleopod. Commenting on the presence of such a segment in *A. hodgarti*, Ii (1936) observed that if the third segment is really present, the species will have to be taken out of that genus. The segment is clearly visible in the species described here and the septum separating the second and third segments carries a small seta. If Ii's suggestion is accepted, a number of species will have to be taken out of the genus *Acanthomysis*.

Genus **Mesopodopsis** Czerniavsky

Macropsis W. M. Tattersall, 1908, p. 233.

Mesopodopsis O. S. Tattersall, 1952, p. 182.

This genus could be easily distinguished by the extra flagellum of the antennule of the male and the peculiar shape of the telson. All the species known are brackish water forms and very much alike.

For a long time *Mesopodopsis* included only two species, *M. slabberi* (van Beneden) and *M. orientalis* (W. M. Tattersall). Recently O. S. Tattersall (1952) described *M. africana* from South Africa and Nouvel (1954) recorded *M. zeylanica* from Ceylon. The four species described so far could be distinguished thus ;–

1. Rostrum perfectly rounded, first segment of exopod of fourth pleopod of male shorter than endopod ... ...*orientalis*

1. Rostrum produced, first segment of exopod of fourth pleopod of male longer than endopod 2

2. Body very slender, eyes and antennules very long ... ...*slabberi*

2. Body not very slender, eyes and antennules only moderately long ...3

3. Third pleopod of male with subequal rami, lateral border of telson with three spines ... ...*africana*

3. Third pleopod of male with dissimilar rami, lateral border of telson with four spines ... ...*zeylanica*

Mesopodopsis zeylanica Nouvel

Pl. V, figs. A–M.

Mesopodopsis zeylanica Nouvel, 1954, p. 33, figs. 1–17.

Body slender, of uniform width ; carapace short, not covering the three posterior segments of the thorax, anteriorly produced into a rounded, broadly triangular rostrum. Antero-lateral corners of carapace forming two curved spines and postero-lateral regions somewhat angular.

First segment of antennular peduncle slightly longer than the rest of the peduncle, outer distal part with a strong spine-seta and three plumose setæ, second segment broader than first, with an outer seta, third segment very stout. The

hirsute lobe of the male antennule distally excavated, accessory flagellum slightly shorter than the lobe, with a long stiff seta and three curved spines, each spine with a semicircular filamentous prolongation as in *M. slabberi*. Antennal scale over-reaching the antennular peduncle. Eyes large, peduncle fairly stout, cornea broader than peduncle and reaching the middle of the third segment of antennular peduncle.

First and second thoracic limbs normal, three to eight comparatively stout, ischium and merus subequal, with several groups of setæ on the lower border, carpopropodal segments six, each with a bunch of setæ and a strong barbed spine, dactylus absent.

Third pleopod of male biramous, endopod large and unsegmented, with twelve stout setæ, pseudobranchial lobe small, with four small setæ, exopod short, half the length of endopod, two-segmented, segments subequal, distal segment ending in a minute cusp, peduncle with four to five stout pectinate setæ. Fourth pleopod of male very long, reaching far beyond the tip of the telson, peduncle stout and hairy in some specimens, endopod very small, half the length of the first segment of exopod, with three setæ and an illdefined pseudobranchial lobe; exopod three-segmented, second one and a half times as long as first, third very small, with two long distal spines, shorter spine with strong barbs, the other about three times as long as the shorter, more than three-fourths of its length with a spiral thickening, extreme distal part with minute hairs or spines.

Telson very much as in other species, one and a half times as long as its basal width, lateral borders with four spines, fourth spine longer than the others; terminal part of telson produced, one-third the total length, its margin with fifty to fiftyfive closely packed spines.

Uropods as in other species, but the endopod without a spine below the statocyst.

Very abundant in the backwaters of Kerala, literally swarming among the marginal vegetation.

Remarks

Nouvel's description of this species is exhaustive and clearly applies to the present specimens but the following minor differences have been noticed. The basal segment of the antennular peduncle has a stout outer distal spine in addition to two to three setæ. The protopodite of the third pleopod of the male has a row

of five stout plumose setæ, endopod has more setæ than shown by Nouvel and the illdeveloped pseudobranchial lobe carries four fine hairs. The endopod of the fourth pleopod has a distinct pseudobranchial lobe carrying four hairs ; Nouvel does not mention this. The postero-lateral angles of the carapace are somewhat produced.

M. orientalis is apparently the common species along the east coast of India while the common species in the present locality is *M. zeylanica.* I have not so far succeeded in collecting the former from here. It is likely that the specimens recorded as *M. orientalis* from Cochin and Goa (Nouvel, 1957) are *M. zeylanica.*

Genus **Lycomysis** Hansen

Lycomysis Hansen, 1910, p. 75.
Lycomysis Colosi, 1916, p. 193.
Lycomysis W. M. Tattersall, 1922, p. 492.

Hansen created this genus to include *L. spinicauda* and later Zimmer (1915) described a second species, *L. pusilla.* According to W. M. Tattersall (1922) these two species are synonymous.

Lycomysis platycauda sp. nov.
Pl. V, figs. N–R ; Pl. VI, figs. A–J.

Carapace produced into a prominent triangular rostrum, slightly overreaching the base of the eye-stalks. Peduncle of the eye as broad as the cornea, its surface spiny. First and third segments of antennule subequal, second short and triangular. Antennal scale elongate-lanceolate, two-segmented and reaching beyond the antennular peduncle, antennal peduncle about half the length of the scale.

Mandible with a short, pointed incisor process and two stout serrate spines ; molar stout, produced into a triangle. First segment of palp very short, with two to three spines, second segment very large, three to four times as long as third, its outer border with a row of long setæ, distal two-thirds of its inner border expanded like a broad thin crest, produced far beyond the distal border of the segment and cut into twelve teeth, the space between the teeth deep and concave. Third segment elliptical, with a row of stout setæ and a short distal row of barbed setæ and two long apical setæ.

Maxillule and maxilla as shown in the figure, outer lobe of maxillule with six short barbed spines and five large ones, outer border with a pronounced hump. Inner lobe of maxilla with a very stout seta.

First pair of legs flattened, with prominently pectinate setae on the upper border, very much like that of *Acanthomysis trophopristis* O. S. Tattersall, basal segment of exopod with two outer apical teeth. Second leg with long slender setae, dactylus with six barbed setae and a long slender unguis. Peraeopods three to eight with two to three large plumose setae on the basis, carpus and propodal segments with a barbed distal inner seta, propodal segments two, dactylus with a moderately long unguis.

Pleopods reduced to a simple unsegmented process with a row of setae, apex with a stout seta, inner lobe not much produced, with four stout setae.

Telson broad and flattened, linguiform or spatulate. Proximal part very broad, with two pairs of spines. Proximal third of the narrow portion unarmed, distal two-thirds with long spines alternating with groups of one to three short spines. Distal border rounded, with ten large highly flattened spines. Endopod of uropod reaching the tip of the telsonic spines, with a row of four spines below the statocyst. Exopod overreaching the endopod.

Length 5.1 mm.

A single slightly multilated ovigerous female from the plankton collected off Quilon.

Remarks

L. platycauda sp. nov. can be easily distinguished by the telson which is much broader than that of *L. spinicauda*. More over in *L. spinicauda* there is a dorsal row of long spines and a ventral row of short ones while in *L. platycauda* long and short spines alternate. In the latter species the apex of the telson carries ten highly flattened spines while in *L. spinicauda* there are four long spines with a short median pair. In the present species the eye-peduncle is spiny and the palp of the mandible also is different from that of *L. spinicauda.*

O. S. Tattersall (1957) has described a similar mandibular palp in *Acanthomysis trophopristis*. In many characters *Lycomysis* appears to resemble *Acanthomysis*, but could be easily distinguished by the biramous pleopods of the male and the three segmented exopod of the fourth pleopod.

Tribe Heteromysini

Genus **Heteromysis** S. I. Smith

Heteromysis W. M. Tattersall, 1922, p. 495.
Heteromysis Id., 1951, p. 235.
Heteromysis Tattersall W. M. & O. S., 1951, p. 416.

The massive carpopropodal segment of the third thoracic endopod and the elongate ovate antennal scale, covered all round with setae, easily distinguish this genus

Three species, *H. inermis* W. M. Tattersall, *H. zeylanica* W. M. Tattersall and *H. gymnura* W. M. Tattersall are known from Indian waters. The four species including the present differ thus :—

1. Peduncle of the eye with a process, proximal part of telson spiny ...*zeylanica*

1. Peduncle of the eye without a process, proximal part of telson without spines 2

2. Cleft of telson one-fourth the total length, with up to ten pairs of spines, antennal scale equal to the peduncle in length.....3

2. Cleft of telson one-third the total length, with up to twentyfive pairs of teeth, antennal scale longer than peduncle..... ....*gymnura*

3. Cleft of telson with ten pairs of spines, endopod of uropod with one spine, cornea not much narrower than peduncle .....*proxima*

3. Cleft of telson with five pairs of spines, cornea much narrower than peduncle.....*macropsis*

Heteromysis macropsis sp. nov.

Pl. VI, figs. K—S

Body short but comparatively broad and dorso-ventrally flattened. Carapace produced into a broadly triangular rostrum, post-orbital and antero-lateral spines absent, posterior border deeply concave.

Eyes large, peduncle longer than broad, reaching the base of the third segment of the antennular peduncle, cornea small, shifted to the antero-lateral part of the peduncle. First and third segments of the antennular peduncle subequal, former with an outer distal setose lobe, second segment triangular, third without a

lobe but having a bunch of long hairs. Antennal scale elongate-oblong, setose all around, reaching the middle of the third segment of the antennular peduncle, peduncle as long as the scale.

Endopod of third thoracic limb massive, ischium and merus with a row of small setae on the inferior border, inferior distal angle of carpus with seven stout spines on the lower border, propodus short, dactylus long and falcate, with two stout and characteristically curved barbed setae. Endopod of legs four to eight with five carpopropodal segments, dactylus stout and barbed on the lower margin, with three curved, stout and barbed setae.

Telson triangular, slightly longer than broad, distal half of lateral border with ten spines, distal border with two pairs of spines, outer pair one and a half times as long as the inner and much stouter, apical sinus about one fifth the total length, with five pairs of spines. Exopod of uropod longer than endopod, endopod with eight spines on the inner border, uropods slightly overreaching the telson and setose all round.

Length 4–5 mm.

Two immature specimens from the plankton collected off Quilon.

Remarks

Of the three species recorded by W. M. Tattersall (1922) *H. proxima* alone shows some resemblance to the new species. But in Tattersall's species the telsonic sinus has more spines and the third thoracic endopod is different. In the present species the eyes are different from those of all the three species and easily distinguish it.

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D
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E
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G
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F
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H
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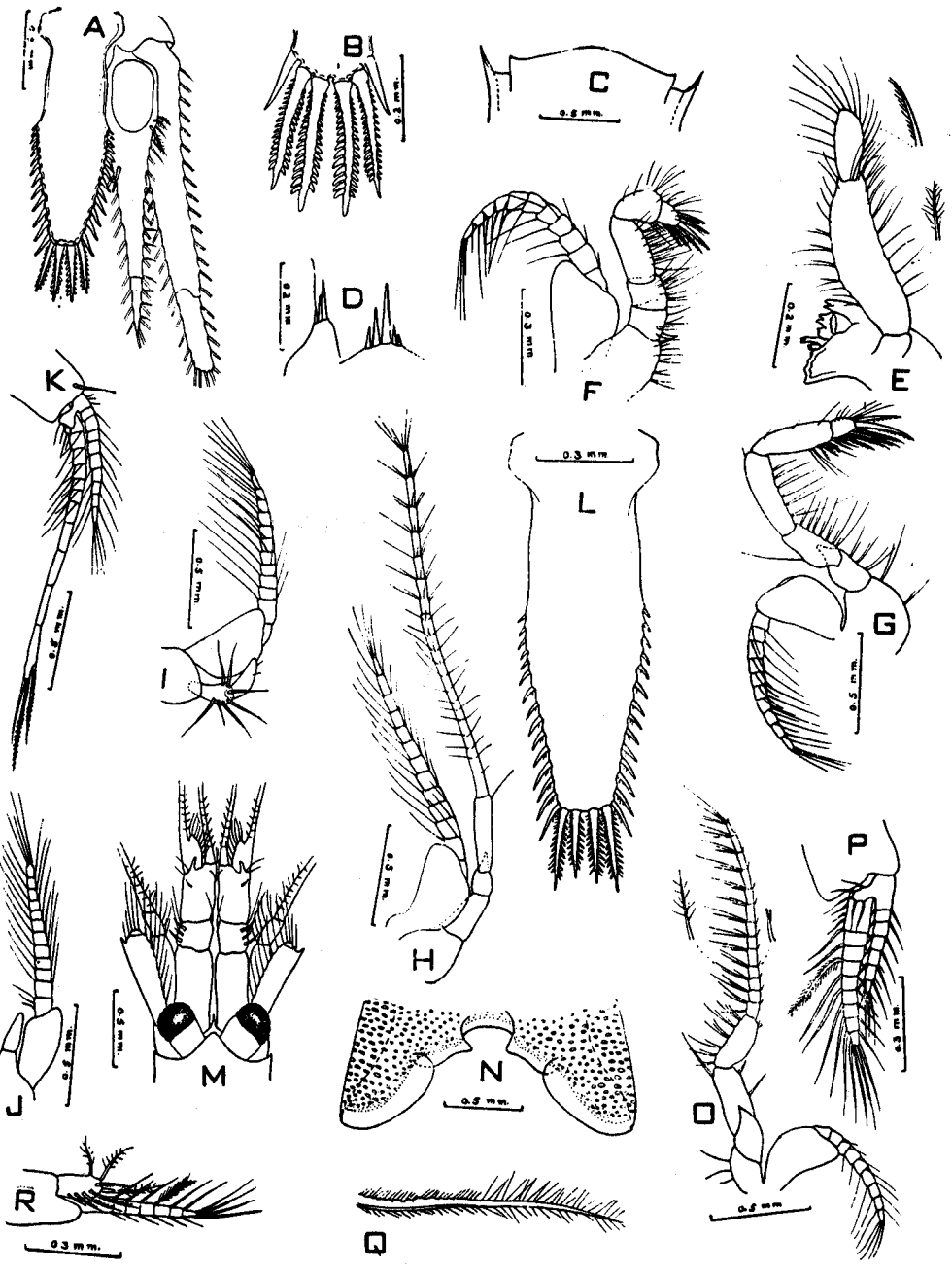
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PLATE III

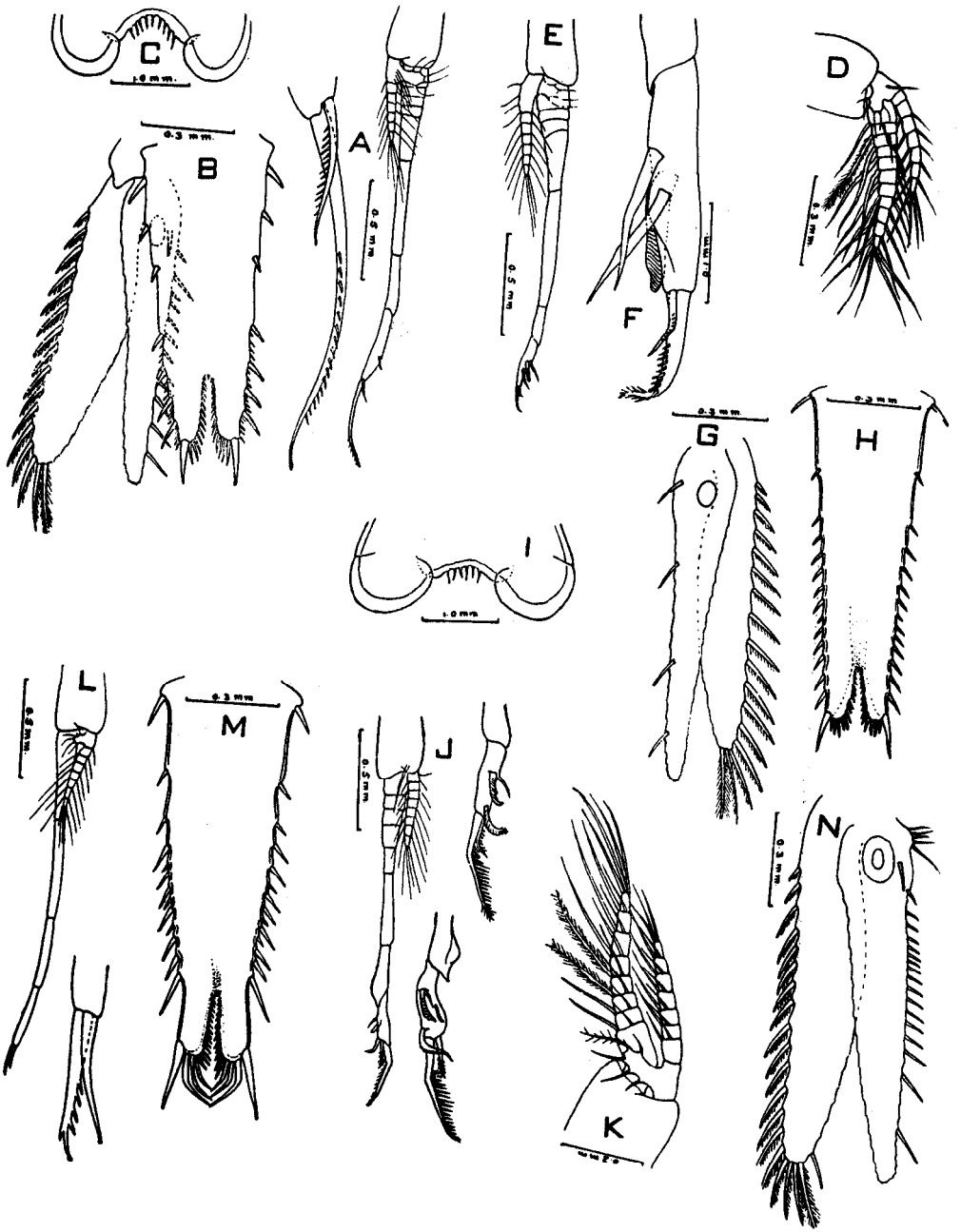
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PLATE IV

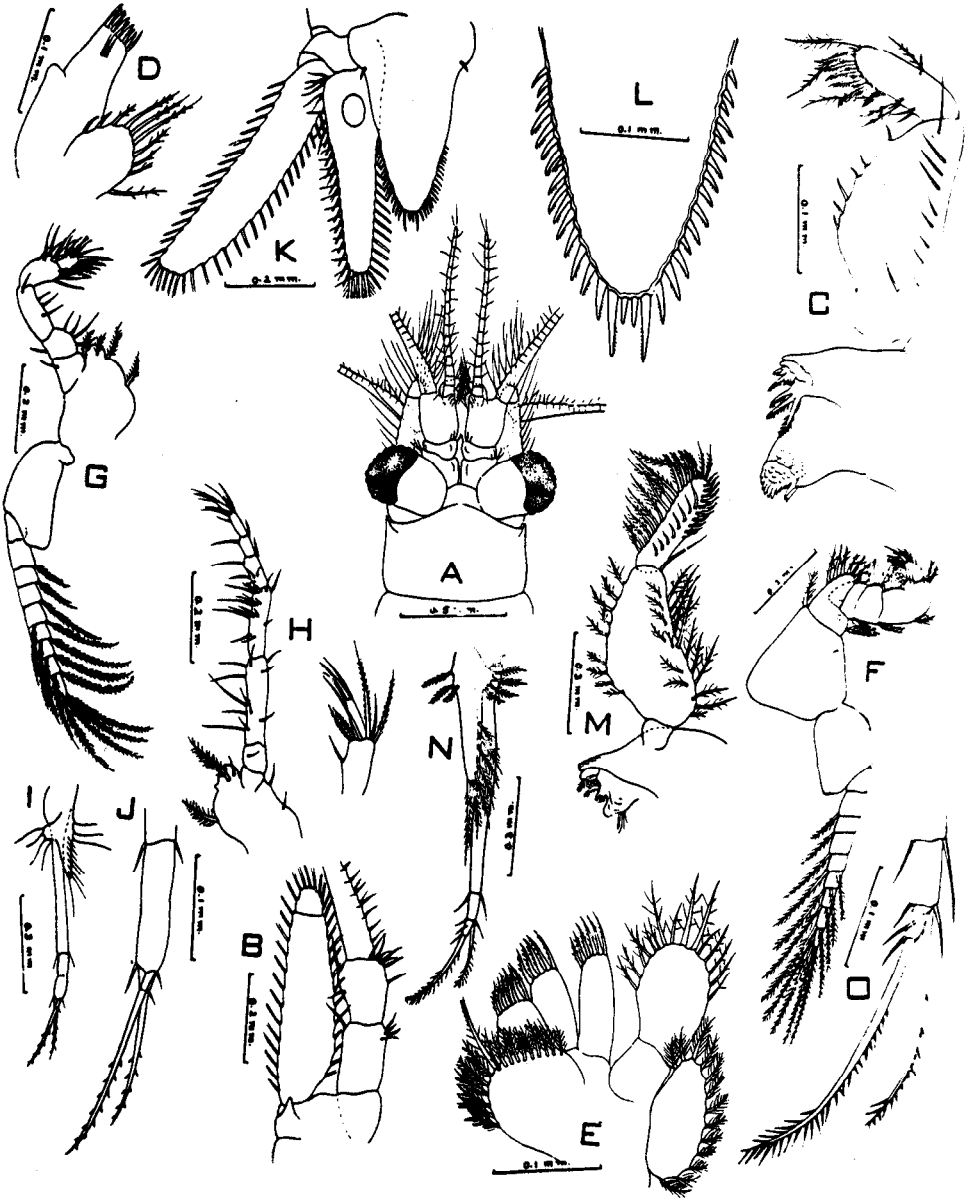

PLATE V

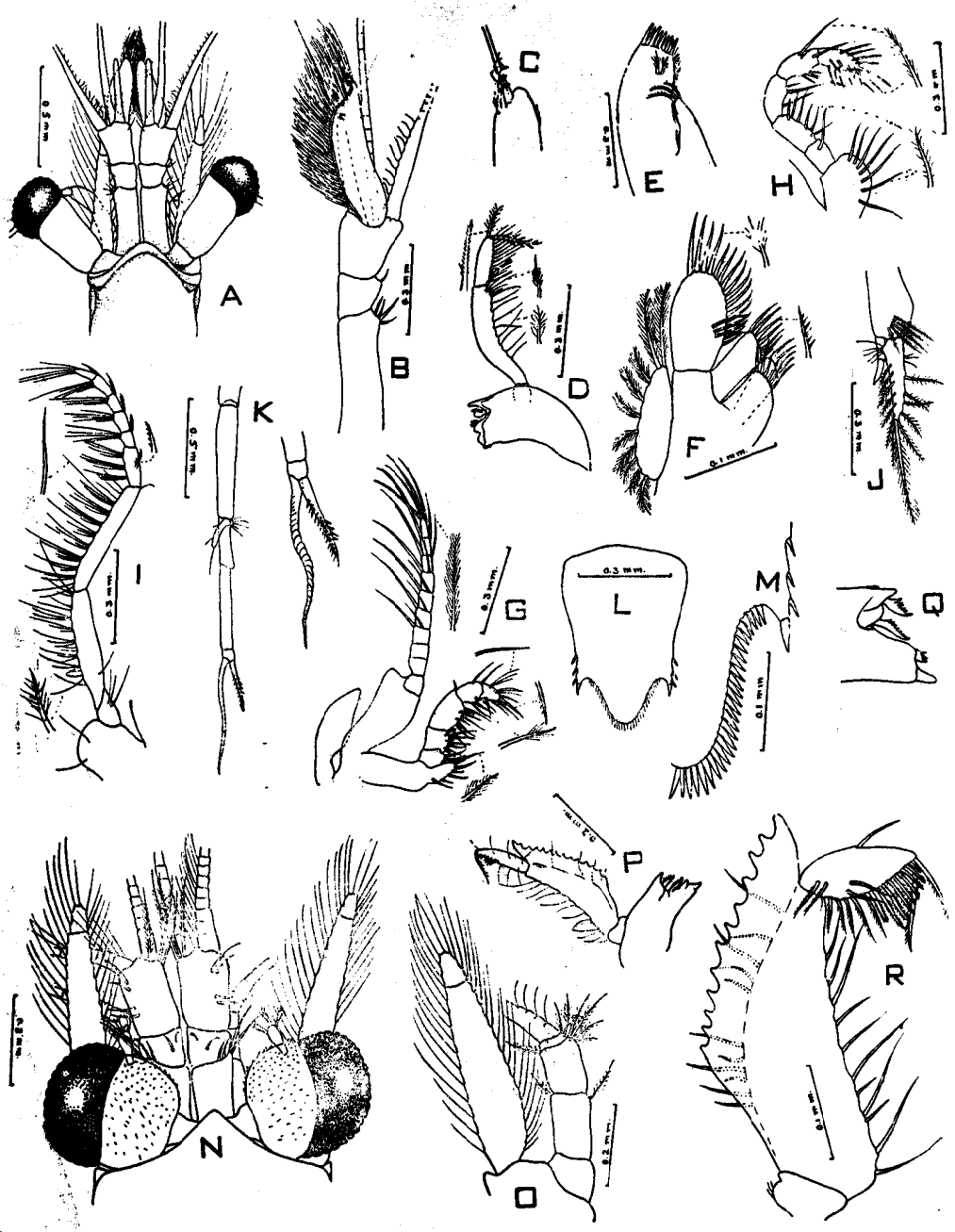

PLATE VI