

A NEW SPECIES OF *MUNIDA* FROM THE INDIAN OCEAN WITH A
REDESCRIPTION OF A SYNTYPE OF *MUNIDA SPINULIFERA*
MIERS, 1884 (DECAPODA, GALATHEIDEA)

BY

NASIMA M. TIRMIZI and WAQUAR JAVED

Invertebrate Reference Museum, Department of Zoology, University of Karachi, Pakistan

Three specimens, one male and two juvenile females, taken by the "Anton Bruun" in the Indian Ocean, appeared to be closely related to *Munida spinulifera* Miers, 1884. A syntype of *M. spinulifera* was very kindly loaned to us by the authorities of the British Museum (Natural History), London. A comparison of the two forms shows, that the present specimens are quite different from Miers' species. They are therefore described here as a new species, *Munida babai*. The types will be deposited in the Smithsonian Institution, Washington, D.C.

The following abbreviations are used: c.l. + r, for carapace length, including rostrum (which is measured from the tip of the rostrum to the posterior margin of the carapace); r.l., for rostral length (measured from the tip to the base of the rostrum); ch.l., for length of the entire cheliped.

***Munida babai* new species**

"Anton Bruun" Sta. 390L, Cruise 7, off Natal, S. Africa, 29°35'S 31°38'E, depth 150 m; 9 September 1964. 1 ♂ holotype (c.l. + r, 6 mm; ch.l., 16 mm).

"Anton Bruun" Sta. 390P, Cruise 7, 29°34'S 31°39'E, depth 118 m; 9 September 1964. 2 ♀♀ paratypes (c.l. + r, 2.5 and 3 mm).

Description. — The rostrum of the male is rather long being nearly half as long as the carapace (c.l. + r = 6 mm, r.l. = 2 mm). The rostrum is styli-form, arcuate and with a strong ridge, bearing a row of scale-like setose granules. The supra-orbital spines are rather characteristic, each has an arched base and a slender pointed tip. They are situated at a higher level than the rostrum, and, like the rostrum, they are setose. The transverse row of the gastric spines consists of twelve slender subequal spines. An acuminate scale lies between the first (median) pair of gastric spines and in line with the longitudinal row of scales on the rostrum; behind it, a granulated scale can be seen interrupting the first stria of the carapace. The only other spines on the carapace are a pair, situated at either side behind the cervical groove, where it bifurcates (fig. 1 A). The anterolateral spines are acutely pointed and well developed, followed by seven spines.

The anterior margin of each of the second to fourth abdominal somites is armed. The anterior margin of the second somite has six spines, whereas the two following somites each bear a pair of submedian spines on that margin. Each somite bears on its dorsal surface a distinct median, one anterior and two posterior

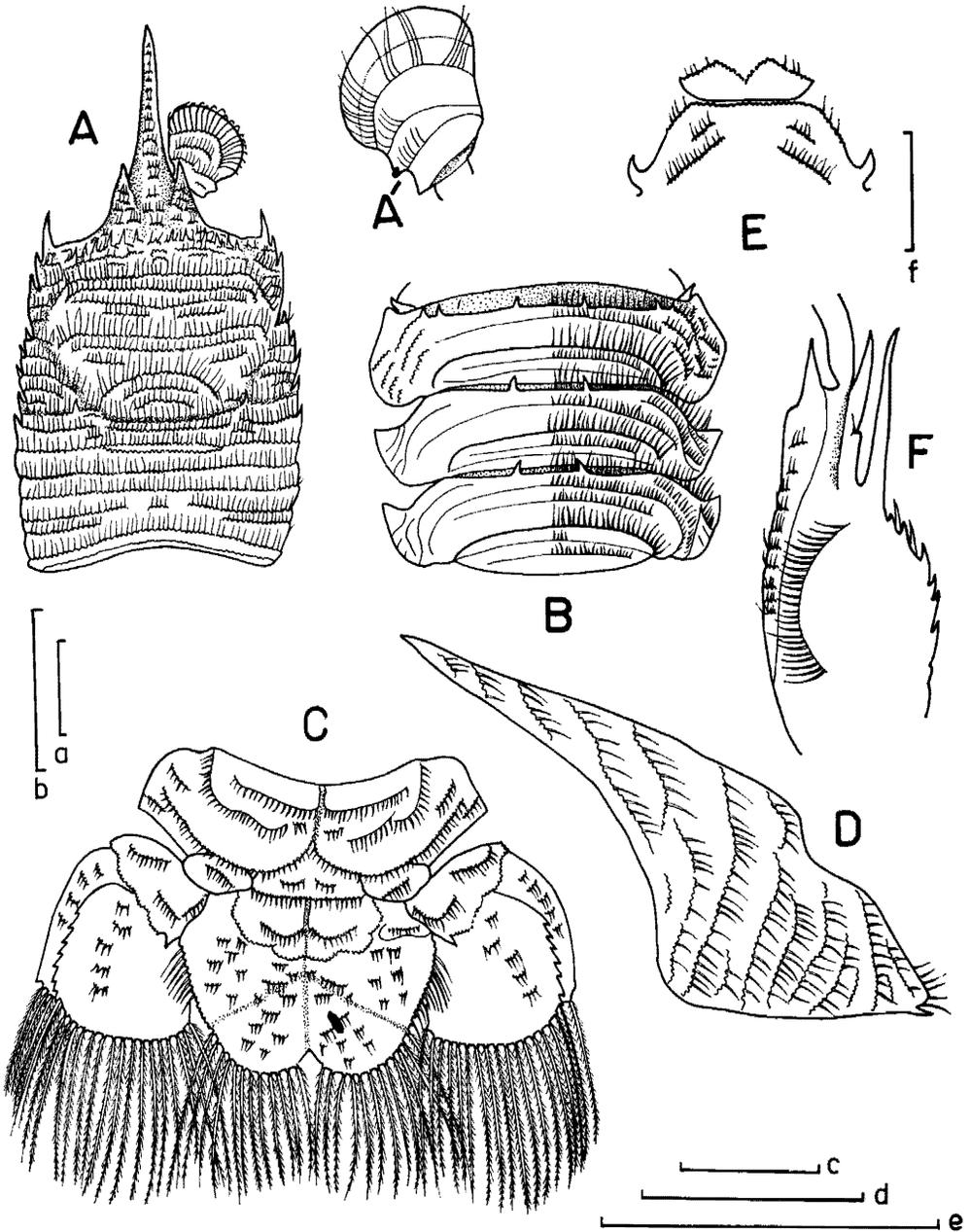


Fig. 1. *Munida babai* n. sp., holotype. A, carapace and right eye in dorsal view; A', right eye in ventral view; B, second to fourth abdominal somites in dorsal view; C, last abdominal somite, telson and uropods in dorsal view; D, right pterygostomial flap; E, anterior part of sternal segments; F, basal segment of right antennule in dorsal view. Fig. A at scale a; A' at scale b; B at scale f; C, E at scale c; D at scale d; F at scale e. Scale, 1 mm.

transverse grooves as illustrated in fig. 1 B. The last abdominal somite, the telson and the uropods are covered by striae and scales (fig. 1 C).

The pterygostomian flap becomes abruptly narrow posteriorly. The notch on the dorsal margin is fairly deep and wide, anteriorly the tip is rounded, setose and with a distinct spine (fig. 1 D).

The third thoracic sternite is nearly as wide as the anterior margin of the following sternite. Anteriorly it is subdivided by a deep V-shaped notch. On either side of this notch the anterior crenulated margin is produced forwards so that each half of the sternite becomes more or less triangular (fig. 1 E).

The basal segment of the antennule bears a short stout disto-median spine, and two long and somewhat slender disto-lateral spines. The outer border proximal to the outer spine is spinose throughout its length. A row of sub-marginal spines is present in the proximal part of the lateral border; some of these spines can be seen from the dorsal side also. On the ventral surface of the disto-lateral spine there is another small spine, which is concealed in dorsal view and thus not shown in fig. 1 F.

The median spine of the basal antennal segment is very long and directed anteriorly; it extends just beyond the distal margin of the following segment. Both the disto-median and disto-lateral spines of the antepenultimate segment are strongly developed, the disto-median being longer and reaching almost as far as the distal margin of the ultimate segment (fig. 2 A).

The armature of the third maxilliped is strong (fig. 2 B). The disto-lateral and disto-median angles of the ischium are produced into spines, the entire median margin and part of the lateral are strongly serrated. A small spine can be seen lateral to the disto-median spine on the ischium of the right maxilliped only. The outer margin of the merus is strongly serrated, distally it is produced into a small spine. On the inner margin are four spines of which the proximal one is the longest, in front of it are two rather short spines; the disto-median spine is strong, rather stout but shorter than the proximal one.

The cheliped (measuring 16 mm) is more than twice as long as the carapace (including rostrum). It is pubescent and thorny as shown in fig. 2 C. The fingers are nearly as long as the palm (palm = 3.5 mm; finger = 3 mm).

A detached peraeopod is illustrated in fig. 2 D. The inner and outer margins of the merus, outer margin of the carpus and inner margin of the propodus are spinose. There are ten small movable spines on the inner margin of the propodus. A few setae can be seen on the dactylus which is otherwise smooth. The dactylus is less than half as long as the propodus (dactylus = 1 mm; propodus = 2.5 mm).

Epipods are wanting on all the peraeopods.

The first pleopod is somewhat club-shaped and reflected in natural position (fig. 2 E). As far as can be seen the marginal setae are small and present only near the tip. The second pleopod is long, narrow and setose; the setae on the inner margin are very long (fig. 2 F).

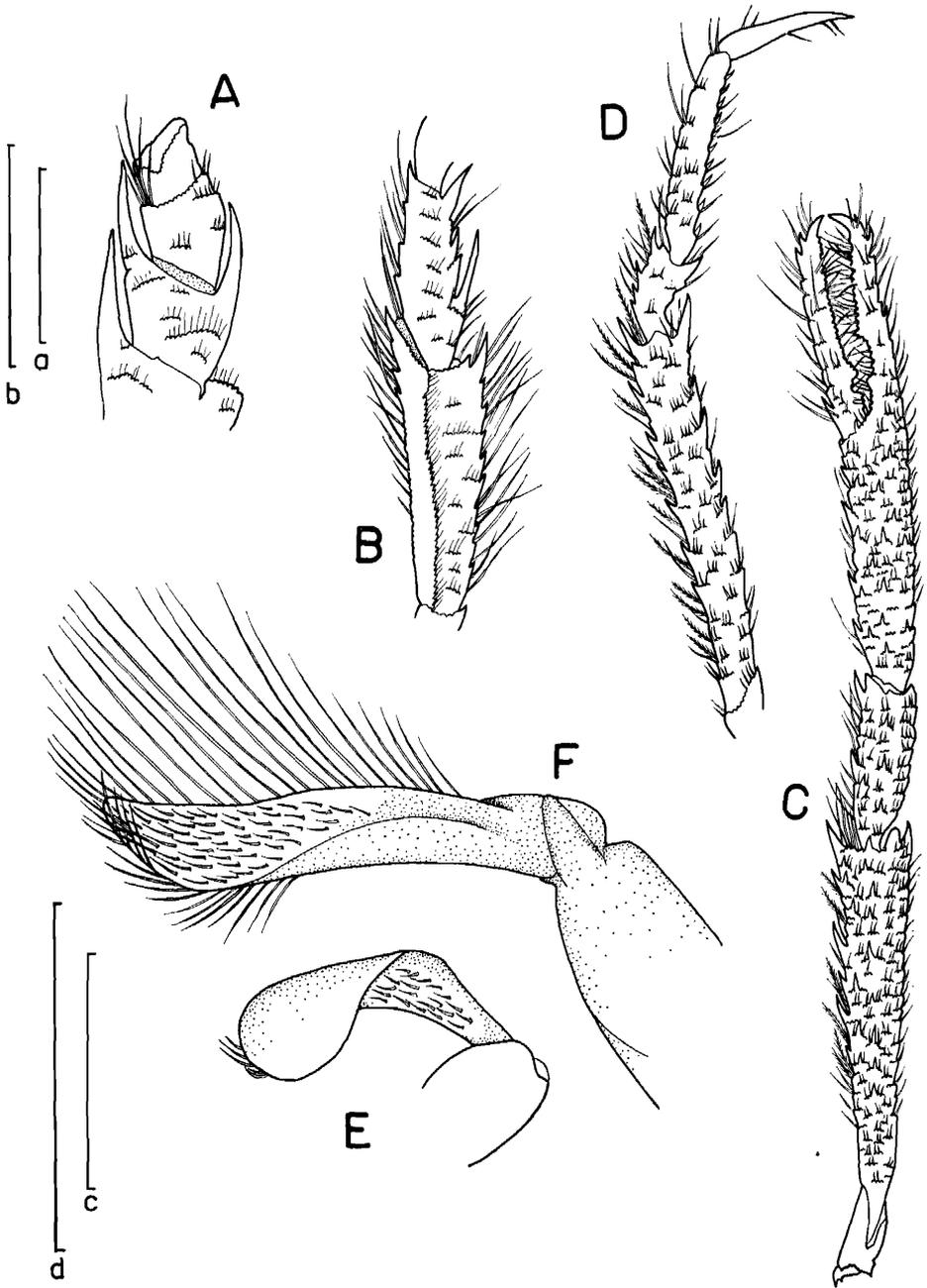


Fig. 2. *Munida babai* n. sp., holotype. A, left antennal peduncle in ventral view; B, ischium and merus of right third maxilliped in ventral view; C, right cheliped; D, detached pereopod; E, distal part of right first pleopod; F, distal part of right second pleopod. Fig. A at scale d, 1 mm; B at scale c, 1 mm; C, D at scale a, 2 mm; E, F at scale b, 0.5 mm.

The two females referred to this species are small and rather fragmentary, the chelipeds and all the walking legs are wanting. The carapace of the larger female is illustrated in fig. 3 A. The rostrum has a broad base tapering gradually to a sharply pointed tip. The supra-orbital spines are separated by a greater distance than in the male. The strong antero-lateral spines are followed by seven spines. The transverse gastric row consists of five pairs of spines; the spines of the second pair are compound. The median row consists of granulated scales, one of which is tipped with a spinule. Only a few setae can still be seen on the striae of the carapace. Further, the spine behind the bifurcation of the cervical groove is present on the left side only in the larger female; in the younger female these spines are wanting.

The spinosity of the second to fourth abdominal somites is the same as in the holotype. In the small female, however, a pair of sub-median spines can be seen on the second and third somites only, the fourth somite is unarmed. The striae on the abdominal somites are illustrated in fig. 3 B. The last abdominal somite, telson and uropods are lightly sculptured and sparsely setose (fig. 3 C).

The pterygostomian flap differs from that of the holotype in being less hairy (fig. 3 D).

The third thoracic sternite is partially divided by a deep notch, the anterior margin of each half is convex (fig. 3 E) and not angular as in the male.

The basal segment of the antennule differs from that of the holotype only in having fewer spines on the outer margin. The spine on the ventral side of the disto-lateral spine (not visible in fig. 3 F) can be clearly seen in both females. The spines on the antennal peduncle (fig. 3 G) have not acquired the full size of those of the adult.

The inner margin of the ischium of the third maxilliped is armed with four strong spines. The inner margin of the merus shows only two spines; the outer margin has a small distal spine (fig. 3 H).

Remarks. — *Munida babai* differs from all known species of the genus and can easily be identified by the shape of the supra-orbital spines, the setation of the eyes, the armature of the antennules and the third maxillipeds. The differences between *Munida babai* and *M. spinulifera* Miers are given in the accompanying table I. The species is named for Dr. Keiji Baba of Kumamoto University, Faculty of Education, Japan.

***Munida spinulifera* Miers, 1884**

The syntype of *Munida spinulifera* Miers collected in the Arafura Sea (H.M.S. 'Alert') was very kindly loaned to us by the authorities of the British Museum (Natural History). Since the existing description and illustrations of the type are inadequate, it seems necessary to redescribe the available specimen, which is an ovigerous female measuring 7 mm in carapace length, including rostrum (r.l. = 2 mm). The rostrum is slender with a feeble carina having minute acuminate tubercles; the supra-orbital spines (0.6 mm long) are sharply

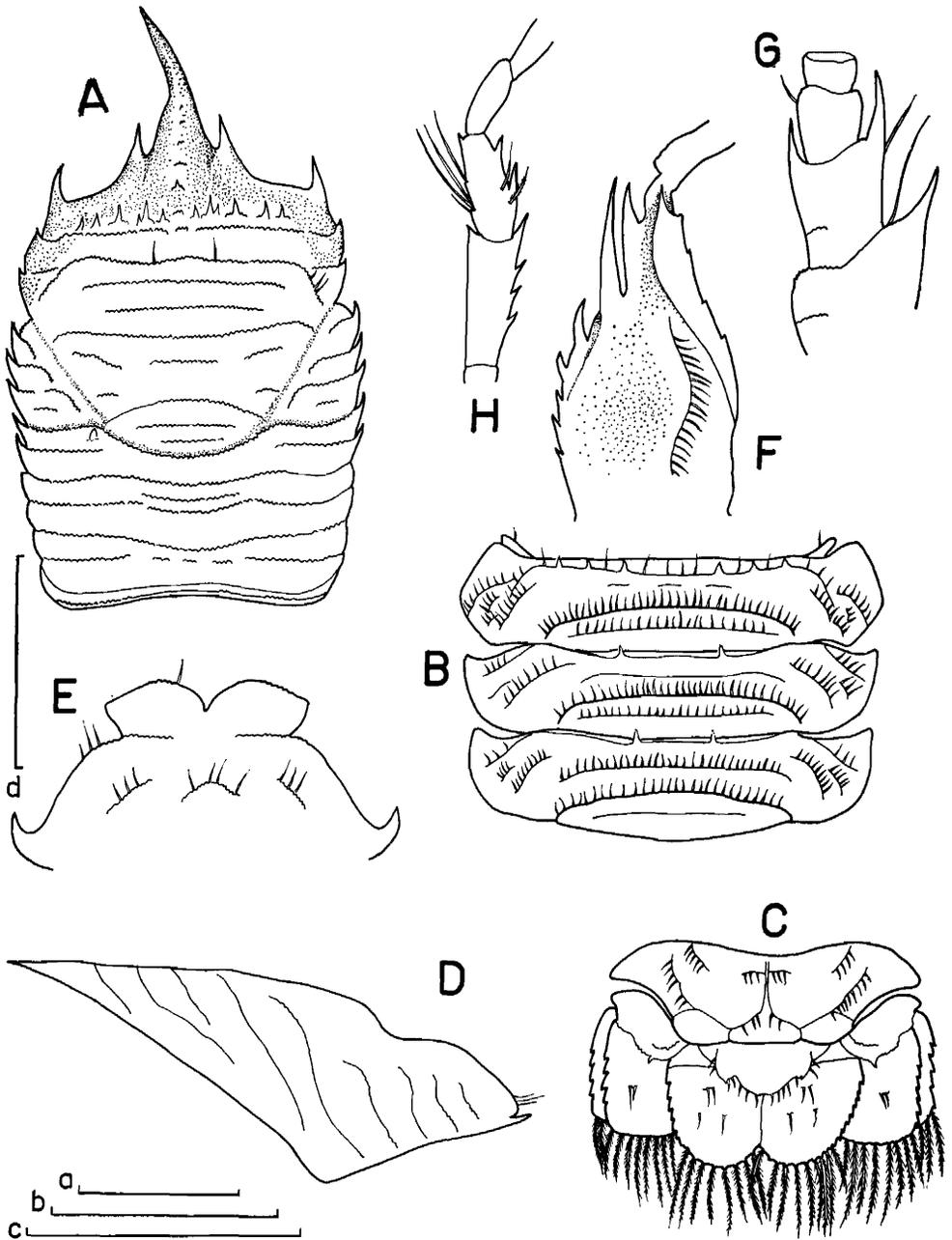


Fig. 3. *Munida babai* n. sp., female paratype, measuring 3 mm in carapace length including rostrum. A, carapace in dorsal view; B, second to fourth abdominal somites in dorsal view; C, last abdominal somite, telson and uropods in dorsal view; D, right pterygostomian flap; D, anterior part of sternal segments; F, basal segment of left antennule in dorsal view; G, right antennal peduncle in ventral view; H, ischium, merus and carpus of right third maxilliped in ventral view. Fig. A, C at scale a; H, B at scale b; D at scale c; E, F, G at scale d. Scales a-c, 1 mm; d, 0.5 mm.

TABLE I

Differences between *Munida spinulifera* Miers and *M. babai* n. sp.

	<i>Munida spinulifera</i> Miers	<i>Munida babai</i> n. sp.
Rostrum	with spinules	with setose scales
Supra orbital spines	smooth	covered with setose granulated scales
Median gastric row	two spines	one acuminate scale
Abdomen	anterior margin of 2nd and 3rd somites armed, 2nd abdominal pleuron acutely pointed laterally	anterior margin of 2nd to 4th somites armed, pleuron more or less rounded
Eye	with short 'lashes' and one setose stria dorsally; smooth ventrally	with long 'lashes' and setose striae on both sides
Basal segment of antennule	outer margin posterior to proximal spine almost smooth	distinctly spinose, spines present on the ventral side also
Antenna	spines short	spines long
Merus of third maxilliped	with two spines on inner margin; disto-lateral angle unarmed	with four spines on the inner margin and one on the disto-lateral angle
Inner margin of ischium	smooth	strongly serrated
Pterygostomian flap	round tip with a small tooth, short and long setae	round with a distinct and well developed spine; with short setae only

pointed and proximally fused with the base of the rostrum, they are smooth, being without spines or setae. The transverse gastric row consists of six pairs of spines of which the second is the largest. The longitudinal median gastric row consists of two spines. A spine is present in the right hepatic region. On the left side, a minute spine is present lateral to the first continuous stria. The spines behind each bifurcation of the cervical groove are well developed (fig. 4 A). The right antero-lateral spine is followed by seven and the left by five spines.

The anterior margin of the second abdominal somite is armed with four pairs of spines, that of the third somite with two pairs only. The grooves and setose striae of the second to fourth abdominal somites are as illustrated in fig. 4 B. The last abdominal somite, the telson and the uropods are with sparsely setose striae and scales (fig. 4 C).

The pterygostomian flap is narrow and elongated, with an acutely rounded anterior margin. The striae are furnished with long and short setae (fig. 4 D).

The third thoracic sternite is a trifle shorter than the anterior margin of the following sternite. Anteriorly it has a median notch, on each side of which the anterior margin is crenulated and convex; laterally the sternite is acutely pointed (fig. 4 E).

The basal segment of the antennule is rather narrow and elongated with one small and sharp distomedian spine, the spines on the lateral margin are as illustrated in fig. 4 F. The disto-median spine of the basal segment of the antennal peduncle is short and stout. The disto-median angle of the following

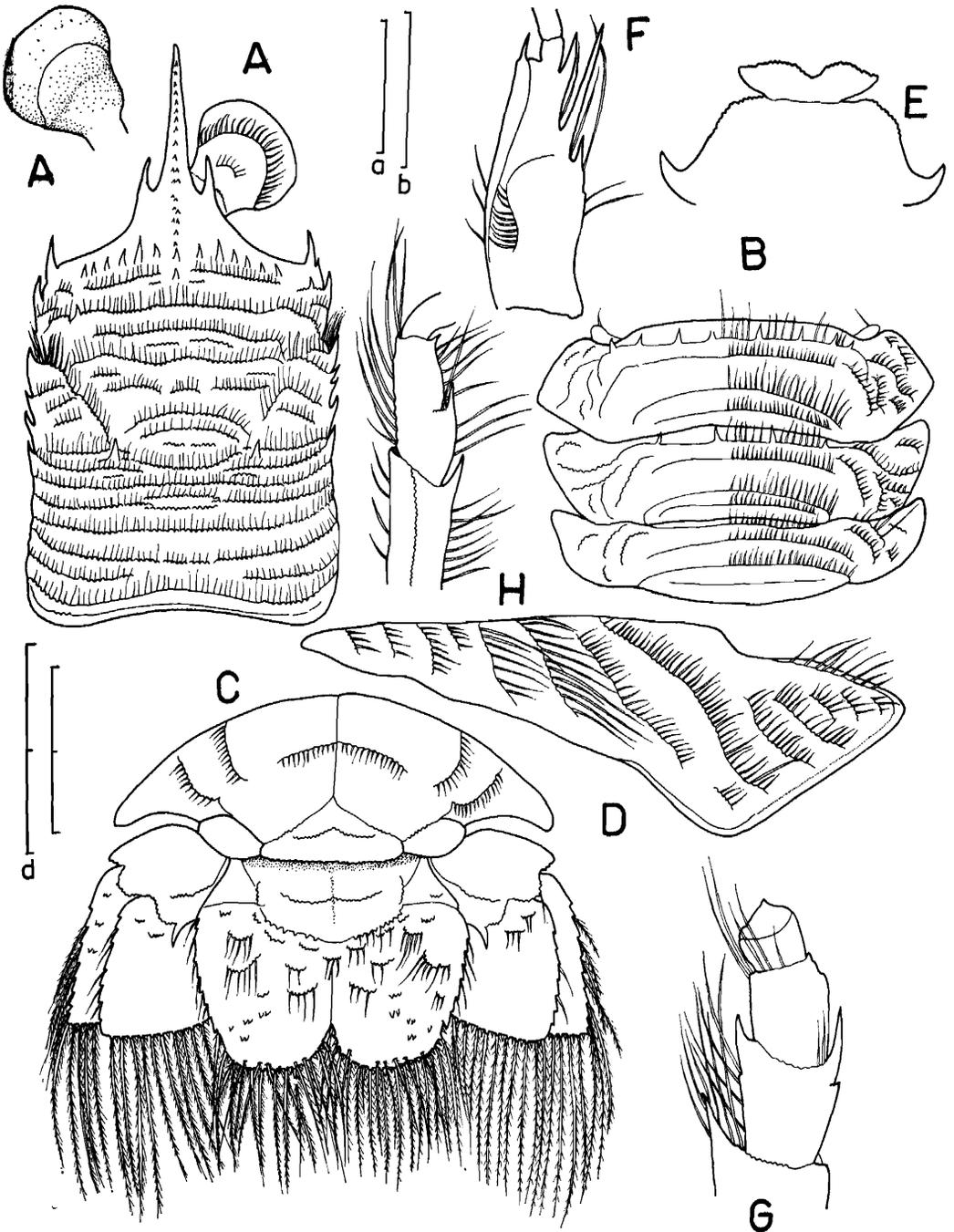


Fig. 4. *Munida spinulifera* Miers, 1884, syntype. A, carapace and right eye in dorsal view; A', right eye in ventral view; B, second to fourth abdominal somites in dorsal view; C, last abdominal somite, telson and uropods in dorsal view; D, right pterygostomian flap; E, anterior part of sternal segments; F, basal segment of right antennule in dorsal view; G, left antennal peduncle in ventral view; H, ischium and merus of right third maxilliped in ventral view. Fig. C, F, G, H at scale a, 1 mm; D at scale b, 1 mm; A at scale c, 2 mm; A', B, E, J at scale d, 2 mm.

segment is produced into a small sharply pointed spine, the spine on the outer angle is longer than the inner one (fig. 4 G).

The disto-median angle of the merus of the third maxilliped is produced into a small spine, another spine is situated near the middle of the inner margin (fig. 4 H).

The chelipeds are missing. A detached peracopod (probably the first) is not very hairy but the spines are sharp and well developed; the number of spines on the posterior margin of the propodus varies from eleven to sixteen. The dactyli of the two longest legs (both detached) show numerous movable spines on the posterior margin. The measurements of the legs are: 4th leg (attached) 10 mm, dactylus 2 mm, propodus 3 mm; one short leg (detached) 9 mm, dactylus 2 mm, propodus 2.5 mm; two long legs (detached) 14 mm, dactylus 2 mm, propodus 3.5 mm.

ACKNOWLEDGEMENTS

The authors take this opportunity to thank Dr. Keiji Baba for answering several queries and taking interest in the present work. They are also grateful to Dr. R. Ingle of the British Museum (Natural History) for sending the syntype of *Munida spinulifera* Miers.

Our thanks are also due to Dr. J. Haig, for going through the MS. Finally we are thankful to Miss Feroz A. Siddiqui for helping us with some of the illustrations. The authors are extremely grateful to the authorities of Smithsonian Institution (Washington) for sending this interesting collection which is a part of the International Indian Ocean Expedition.

RÉSUMÉ

Description d'une espèce nouvelle de *Munida*, *M. babai*, trouvée au large de Natal. Cette espèce est comparée avec *M. spinulifera* Miers, qui est redécrite d'après un syntype.