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THREE SPECIES OF MYSIDACEA (CRUSTACEA) FROM SURINAM

by

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With 3 text-figures

This report is the eighth in a series of papers (Brattegard, 1969, 1970a, 1970b, 1973, 1974a, 1974b, 1975) dealing with Mysidacea (Crustacea) from shallow water in the tropical and warm-temperate areas of the western Atlantic. Hitherto unpublished material of shallow-water mysids collected in brackish water and fresh water in Surinam, South America is presented in this paper.

I gratefully acknowledge the cooperation of the collectors, Dr. P. Wagenaar Hummelinck of the Zoologisch Laboratorium, Utrecht, Nederland and Mrs. M. P. Panday-Verheuvél of the Surinam Forest Service, Paramaribo, Surinam.

The type material will be deposited in the United States National Museum of Natural History, Washington, D.C. (U.S.N.M.) and the rest of the material will be deposited in the Rijksmuseum van Natuurlijke Historie, Leiden, Nederland.

I am greatly indebted to Dr. J. B. L. Matthews for help with the manuscript.

?*Antromysis* sp. (fig. 1)

As the following brief description is based on only one partly damaged berried female, there is hardly sufficient basis for the erection of a new species until further material comes to hand.

The specimen, a berried female with 2 embryos in the brood pouch, was collected by Dr. P. Wagenaar Hummelinck at stn 923 on 15 October 1968, in a brackish-water (700 mg Cl/l) ditch at Domburg, SE of Paramaribo, Surinam. Other mysid species in the same sample were *Diamysis americana* and *Parvimysis almyra* sp. nov.

General form moderately slender.

Carapace (fig. 1A); anterior dorsal margin evenly arcuate, not produced into a rostral plate; posterior dorsal margin emarginate exposing the last two thoracic somites; antero-lateral corners obtuse.

Antennular peduncle (fig. 1A); outer distal corner of the 1st segment drawn out into a narrow lobe, 1st segment almost as long as the 2nd and 3rd combined, 2nd segment triangular in dorsal view, 3rd segment with an obtuse, simple seta on the outer distal corner.

Antenna (fig. 1A, B); scale broadly lanceolate, extending just beyond the antennular peduncle, about 3 times as long as broad, outer margin almost straight, inner margin convex, setose all round, apex relatively narrow, distal segment about 1/4 the length of the whole scale and separated by a distinct suture; antennal peduncle reaching to the suture of the scale, 2nd segment 1.5 times as long as the 3rd, outer distal corner of the sympod without a tooth.

Eyes (fig. 1A) moderately large, cornea occupying 2/5 of the whole eye, as wide as the eyestalk, dorso-ventrally compressed, corneal pigment dark brown.

Third to eighth thoracic endopods; carpo-propodus 2-segmented.

Eighth thoracic endopod (fig. 1C) longer than the preceding endopods, merus swollen in its distal third and carrying a very strong spine curved towards the proximal carpo-propodal segment, the proximal carpo-propodal segment with the area opposite to the distal spine of the merus densely hirsute and carrying two rows of short spines of setae, at the distal end of the segment a transverse row of simple setae near the outer margin, distal carpo-propodal segment a little more than half as long as the preceding segment, dactylus short and carrying two setae and a long, robust claw.

Pleopods of the female rudimentary, small.

Uropods (fig. 1D); exopod about as long as the endopod, outer margin almost straight, inner margin convex, setose all round, apex broad; endopod almost as long as the exopod, statocyst relatively small, statoliths present, apex narrow, setose all round, no spines on inner lower margin.

Telson (fig. 1D, E) entire, short, slightly longer than broad, lateral margin straight, armed with 2 spines proximally and separated from 1-2 distal spines by an unarmed middle portion, apex broadly rounded and carrying 7 long, robust spines.

Length. — Adult female 2.7 mm.

Remarks. — It is unfortunate that only the female is known because knowledge of the male is necessary to place the species in either of the tribes Leptomysini or Mysini of the sub-family Mysinae.

The structure of the distal part of the 8th thoracic endopod resembles that of the female *Diamysis americana* (fig. 2E). The form of the telson

closely resembles that of *Antromysis anophelinae* W. M. Tattersall among the Mysini and is unlike that of any known species within the Leptomysini. The specimen is provisionally placed in the genus *Antromysis* Creaser of the tribe Mysini.

The three known species of *Antromysis* Creaser, 1936 have all been collected from water in caves (*A. cenotensis* Creaser from Mexico, *A. cubanica* Băcescu & Orghidan from Cuba) or from the bottom of deep burrows of the crab *Cardisoma crassum* Smith (*A. anophelinae* from Costa Rica) (W. M. Tattersall, 1951; Băcescu & Orghidan, 1971). The eyes of these species are greatly modified: *A. cenotensis* has eyes without pigmented areas (W. M. Tattersall, 1951: 230); the eyes of *A. anophelinae* are fused proximally to form an ocular plate but separated by a deep furrow between the anterior

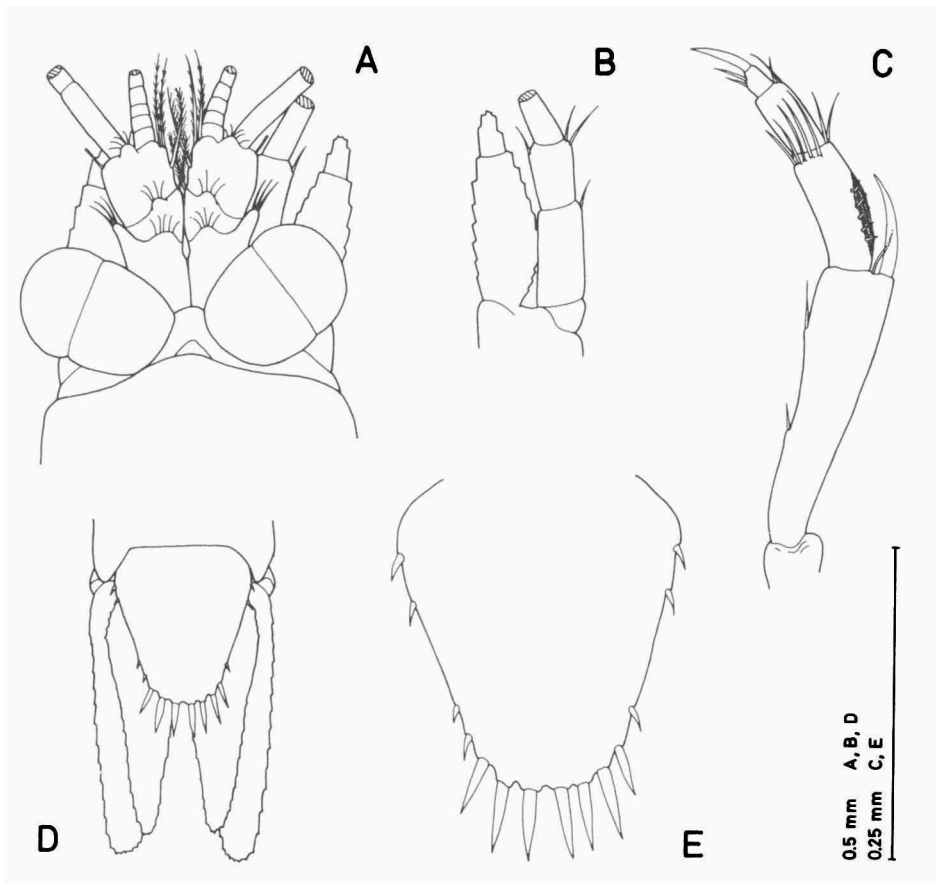


Fig. 1. ? *Antromysis* sp., 2.8 mm. A, dorsal view of anterior end; B, antennal scale; C, 8th thoracic endopod; D, dorsal view of posterior end; E, telson.

part of each eye, ocelli reduced and forming a narrow band along the edge of the ocular plate, where there is also a narrow band of black pigment (W. M. Tattersall, 1951); and *A. cubanica* has eyes formed into two well-separated plates which totally lack pigment (Băcescu & Orghidan, 1971).

Diamysis americana W. M. Tattersall, 1951 (fig. 2)

Reference to description: W. M. Tattersall, 1951: 226, fig. 97.

General form moderately slender.

Carapace (fig. 2A); anterior dorsal margin evenly arcuate, not produced into a rostral plate, posterior dorsal margin emarginate, exposing the last two thoracic somites, antero-lateral corners rounded.

Antennular peduncle (fig. 2A); 1st segment a little longer than the other two combined, outer distal corner of the 1st segment not particularly produced, dorsal surface of 2nd segment rhomboid in dorsal view, male lobe a small knob on the inner distal surface of the 3rd segment and furnished with a bundle of long, fine setae.

Antenna (fig. 2A, B); scale lanceolate, extending beyond the antennular peduncle, about 6 times as long as broad, setose all round, outer margin straight, inner margin convex, apex narrow, distal segment about 1/7 the length of the whole scale and separated by a distinct suture; antennal peduncle extending 2/3 of the way along the scale, 2nd segment slightly longer than the 3rd, outer distal corner of the sympod with a tooth.

Eyes (fig. 2A) moderately large, cornea occupying the distal 1/3 of the total eye, slightly wider than the distal end of the eyestalk, almost kidney-shaped in dorsal view, slightly ovoid in lateral view, corneal pigment dark brown.

Second thoracic limb (fig. 2G, g); endopod slender, ischium very short, with a bundle of simple setae, merus slightly longer than carpo-propodus, dactylus spatulate and armed with some plumose setae on its outer surface and a distal row of modified, robust setae and spines, nail inconspicuous.

Third thoracic limb (fig. 2F); endopod relatively slender, merus a little longer than the ischium, furnished proximally with 2 long, strong setae and on the distal half with 3 short, stout setae, the 2-segmented carpo-propodus as long as the merus, the proximal segment about 3 times as long as the distal one and furnished with slender setae and some modified setae on the distal half, dactylus half as long as the preceding segment and carrying a long, strong claw.

Fifth thoracic limb (fig. 2H); endopod relatively slender, merus almost twice as long as the ischium and furnished with numerous slender, simple setae, the 2-segmented carpo-propodus about half as long as the merus, the

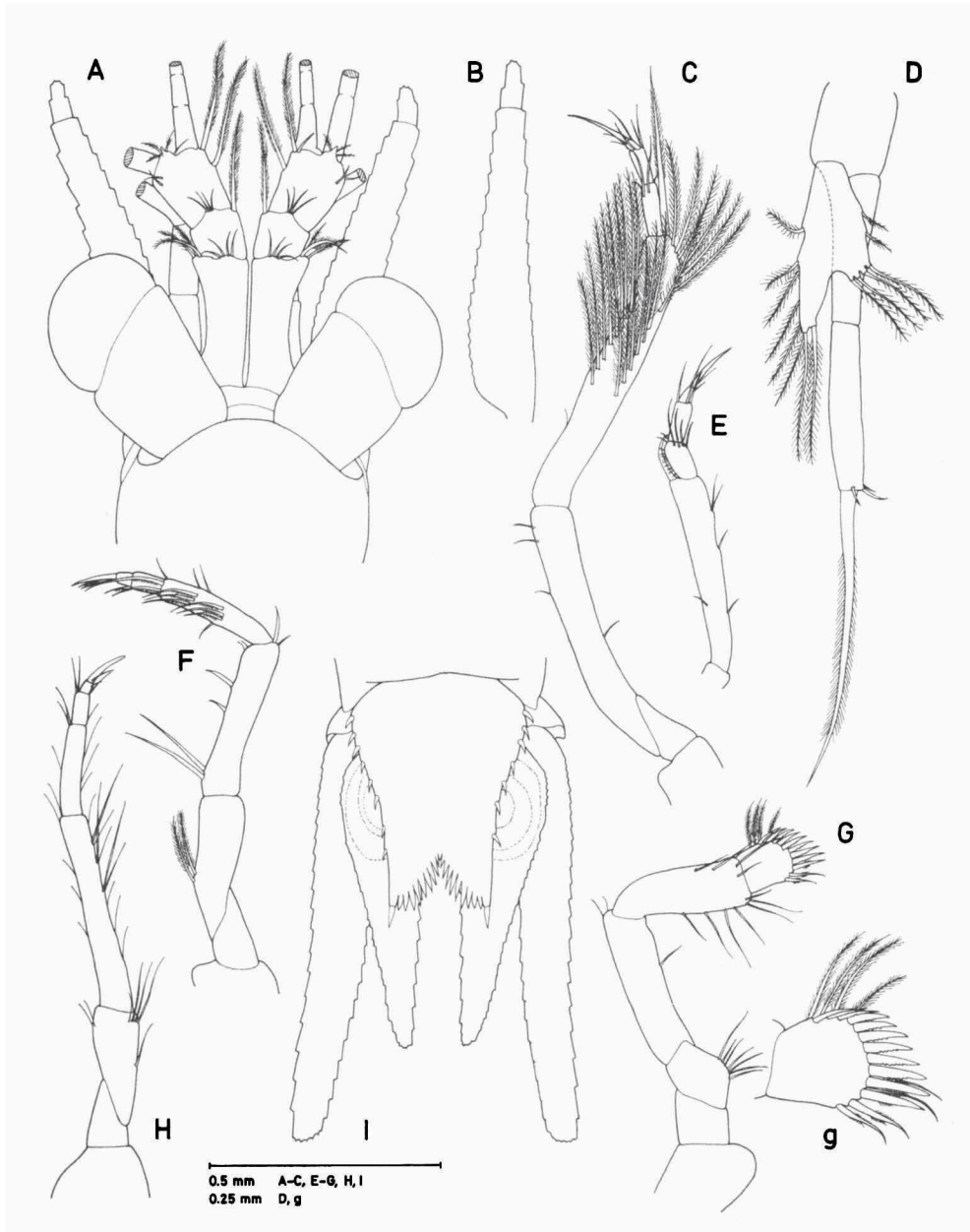


Fig. 2. *Diamysis americana* W. M. Tattersall. A, dorsal view of anterior end, ♀ 4.5 mm; B, antennal scale, ♂ 4.8 mm; C, 8th thoracic endopod, ♂ 4.8 mm; D, 4th pleopod, ♂ 4.8 mm; E, 8th thoracic endopod, ♀ 4.6 mm; F, 3rd thoracic endopod, ♂ 4.8 mm; G, 2nd thoracic endopod, ♂ 4.8 mm; H, 5th thoracic endopod, ♂ 4.8 mm; I, dorsal view of posterior end, ♂ 4.8 mm.

proximal segment 3 times as long as the distal one, dactylus small and carrying a strong claw.

Eighth thoracic limb (fig. 2C, E); endopod of the male (fig. 2C) much longer than any of the preceding endopods, ischium and merus being the lengthened segments, the latter slightly the longer, its distal part carrying two parallel rows of long, slender, plumose setae and at the distal end a long, thick, barbed seta or spine, the 2-segmented carpo-propodus $1/3$ as long as the merus, the proximal segment longer than the distal one, dactylus small and carrying a long, strong claw; endopod of the female (fig. 2E) longer than any of the preceding endopods, ischium and merus being the lengthened segments, the latter slightly the longer, its distal end carrying a curved spine a little longer than the proximal segment of the short 2-segmented carpo-propodus which carries a row of 4-6 very short spines or simple setae on either side of the curved spine, otherwise as in the male.

Marsipium of the female composed of only two pairs of oostegites, the posterior much larger than the anterior.

Pleopods of the male; 1st-3rd and 5th pairs rudimentary, 4th pair (fig. 2D) modified, endopod 1-segmented and flattened, reaching halfway along the exopod, pseudobranchial lobe well developed, exopod 2-segmented, the segments sub-equal in length and divided by a indistinct articulation, distal segment ending in a barbed spine as long as the exopod itself and one short and two very short spines or thick setae.

Uropod (fig. 2I); exopod about twice as long as the telson, outer margin slightly concave, inner margin slightly convex, setose all around, apex broad; endopod reaching halfway between the distal ends of the telson and the exopod, statocyst relatively large, outer and inner margins almost straight distal to the statocyst, setose all round, apex narrow, no spines on inner lower margin.

Telson (fig. 2I) cleft, 1.3 times as long as broad near the base, lateral margins slightly concave, armed along the proximal $2/3$ - $3/4$ with 4-8, usually 5-7, pointed, sub-equal spines, each of the short apical lobes with a single spine as long as the longest lateral spines; cleft between the apical lobes broad, its depth about $1/5$ the length of the telson, margins of the cleft straight, meeting at angle of 80 - 115° and armed with 6-9 spinules each.

Length. — Adult males up to 5 mm, adult females up to 5.5 mm.

Remarks. — W. M. Tattersall (1951) remarked that *D. americana* differed from the generic description of *Diamysis* in that the 3rd-8th thoracic endopods had only a 2-segmented carpo-propodus and that the 4th pleopod of the male (based on 2 specimens) had a single-segmented exopod, but regarded these differences as of only specific value.

The specimens described here agree very well with the description given by Tattersall (1951). There are small differences in the relative lengths of the carpo-propodal sub-segments, and the two males Tattersall described were said to have an undivided exopod in the 4th pleopod.

When Nouvel (1965) described *D. frontieri* from Nosy-Bé, Madagascar, he mentioned in passing that the species described by W. M. Tattersall as *D. americana* probably did not belong to the genus *Diamysis*. He referred to an earlier work of his (Nouvel, 1957) in which he described *Nanomysis insularis*. The maxilla of this species has an oblong, narrow exopod with two plumose setae at the tip, one long, thick and one short, slender. He noted that *Diamysis americana* was the only known species with an almost identical exopod. Other species of *Diamysis* have a broader exopod furnished with plumose setae along most of the outer margin of the exopod. This difference probably induced him to state that "l'attribution de cette espèce au genre *Diamysis* ne me paraît pas très légitime" (Nouvel, 1957: 327). It is uncertain, however, whether the detailed structure of the maxilla is of generic significance, as Brattegard (1969) described *Parvimysis bahamensis* in which the maxilla has a large, ovoid exopod with two plumose setae at the tip but is otherwise devoid of setae.

Occurrence:

Brackish-water ditch at Fort Nieuw Amsterdam near Paramaribo (51 ♂♂, 55 ovig. ♀♀, 84 other ♀♀, 28 juvenile specimens). Coll. Dr. P. Wagenaar Hummelinck, stn 922, 16 October 1968.

Brackish-water (700 mg Cl/l) ditch at Domburg, on Suriname River, SE of Paramaribo (52 adult ♂♂, 40 sub-adult ♂♂, 46 ovig. ♀♀, 20 adult ♀♀, 114 sub-adult ♀♀, 49 juvenile specimens). Coll. Dr. P. Wagenaar Hummelinck, stn 923, 15 October 1968.

Precise locality unknown. In open water (chloride content fluctuating between 8 and 27 g Cl/l) between high black mangrove (*Avicennia nitida*) (2 adult ♂♂, 2 adult ♀♀). Coll. Mrs. M. P. Panday-Verheuevel, Surinam Forest Service, stn 1 A, November 1973.

Ecological note. — The specimen were caught in shallow brackish-water. The type locality is a fresh-water ditch in the botanical gardens in Paramaribo (W. M. Tattersall, 1951). Ovigerous females were taken in October. Their length ranged from 4.2 to 5.5 mm. Ten females with apparently complete broods carried 3-5, on average 4, embryos or larvae. Other mysid species in the same sample were *Parvimysis almyra* sp. nov. and ?*Antromysis* sp.

D. americana has not been recorded from outside Surinam.

Parvimysis almyra sp. nov. (fig. 3)

Holotype. An adult female, 3.9 mm long, from stn 922, brackish-water ditch at Fort Nieuw Amsterdam near Paramaribo, Surinam. Collected by Dr. P. Wagenaar Hummelinck, stn 922, 16 October 1968. Deposited in vial in U.S.N.M.

Paratypes. 3 adult males and 3 adult females from stn 922. Deposited in vial in U.S.N.M.

General form moderately slender.

Carapace (fig. 3A); anterior dorsal margin produced into a short, rounded rostral plate, posterior dorsal margin emarginate, exposing the last two thoracic somites, antero-lateral corners rounded.

Antennular peduncle (fig. 3A); outer distal corner of the 1st segment drawn out into a long, narrow lobe which reaches the proximal part of the 3rd segment, male lobe a small knob on the inner distal surface of the 3rd segment and furnished with a bundle of long, fine setae.

Antenna (fig. 3A, B); scale lanceolate, extending beyond the antennular peduncle, about 4 times as long as broad, setose all round, outer margin less convex than inner margin, apex narrow, distal segment $1/6$ the length of the whole scale and separated by a distinct suture; antennal peduncle extending almost to the suture of the scale, 2nd segment longer than the 3rd, outer distal corner of the sympod with a tooth.

Eyes (fig. 3A) moderately large, cornea occupying the distal $2/3$ of the total eye, as wide as the eyestalk, cornea ovoid in lateral view, corneal pigment dark brown.

Labrum as in *Parvimysis bahamensis*.

Mandibles; cutting edges as in *P. bahamensis*, general form of the palps as in *P. bahamensis*, but 3rd segment armed with more spines and setae and the 2nd with more setae.

Maxillule as in *P. bahamensis*.

Maxilla as in *P. bahamensis*, but the exopod relatively shorter and narrower.

First and second thoracic limb as in *P. bahamensis*.

Third thoracic limb; endopod relatively slender, merus about 1.5 times as long as the ischium, carpus twice as long as the combined propodus and dactylus, the articulation between the carpus and the propodus transverse, dactylus small and with a long, moderately strong claw.

Eighth thoracic limb; endopod slender, merus and tarsus each about twice as long as the ischium, carpus almost twice as long as the propodus and dactylus combined, the articulation between carpus and propodus slightly oblique, dactylus with a long, moderately strong claw.

Pleopods of the male; 1st-3rd and 5th pairs rudimentary, 4th pair (fig. 3C) modified, endopod 1-segmented, flattened and with a feebly developed pseudobranchial lobe, exopod 3-segmented, the last two segments sub-equal in length, distal segment ending in a barbed spine slightly longer than the segment, and a very short, simple seta.

Uropod (fig. 3D); exopod a little longer than the endopod and about

twice as long as the telson, both margins slightly convex, setose all round, apex broad; endopod slightly shorter than the exopod, setose all round, apex narrow, no spines on inner lower margin.

Telson (fig. 3D, E) broadly emarginate, about $1\frac{1}{4}$ times longer than broad near the base, reaching halfway along the uropod rami, lateral margins slightly sinusoid, armed with 4-8, usually 5-7, short pointed spines, each of

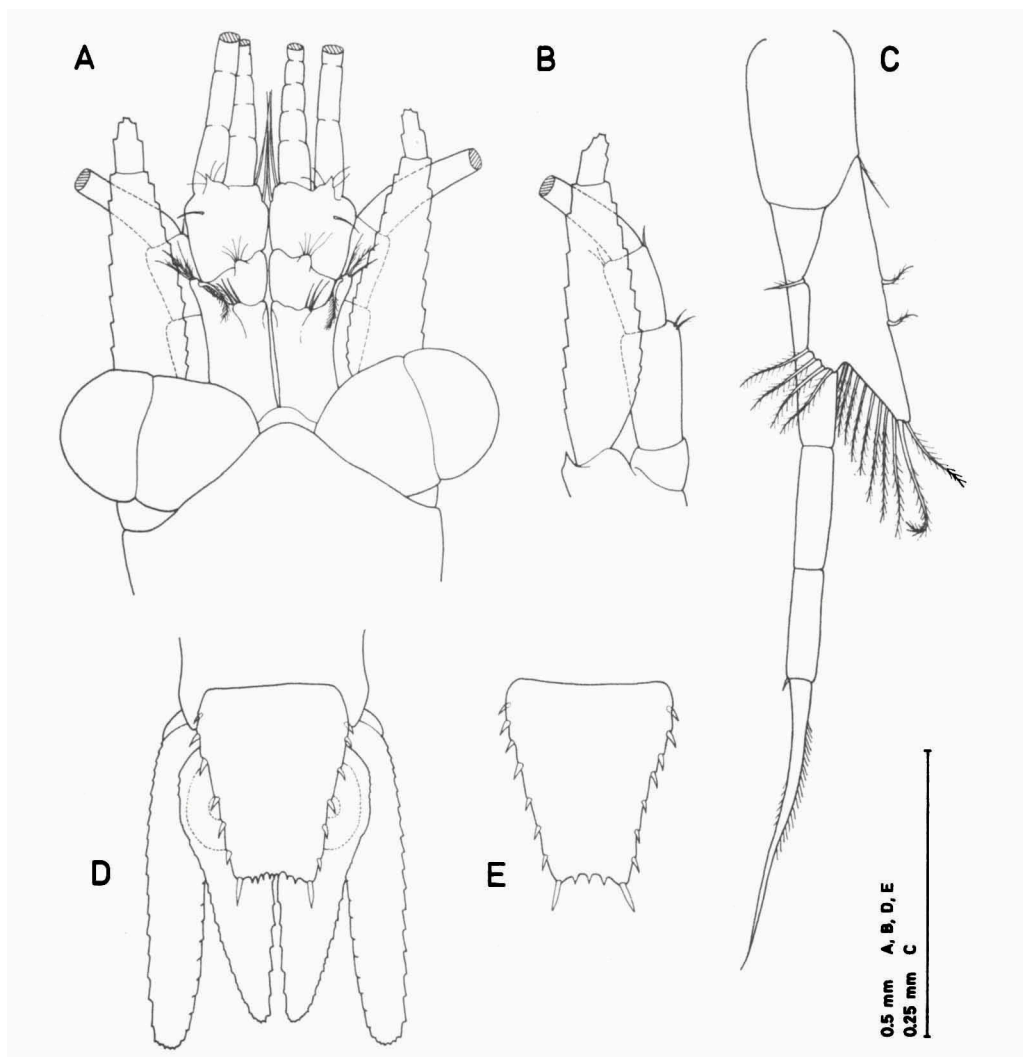


Fig. 3. *Parvimysis almyra* sp. nov. A, dorsal view of anterior end, ♀ 3.7 mm; B, antennal scale, ♀ 3.6 mm; C, 4th pleopod, ♂ 3.8 mm; D, dorsal view of posterior end, ♀ 3.7 mm; E, telson, ♂ 3.5 mm.

the apical lobes with a single short spine, between the apical lobes a broad, shallow emargination armed with 3-10, on average 5, short spinules which are regularly spaced when there are 5 or less, and irregularly spaced when there are more than 5.

Colour. — In preserved specimens numerous chromatophores are visible along the whole ventral side of the body.

Length. — Adult males up to 3.8 mm, adult females up to 3.9 mm.

Remarks. — The species here described undoubtedly belongs to the genus *Parvimysis* Brattegard, 1969. The specimens differ from *P. bahamensis* Brattegard, 1969, in the following details. The anterior dorsal margin of the carapace is triangular and the anterolateral corners are pointed in the latter species; the 2nd and 3rd segments of the mandibular palps have fewer spines and setae; the exopod of the maxilla is longer and broader; the articulation between the carpus and propodus of the thoracic endopods is more oblique; the terminal segment of the 3-segmented exopod of the 4th male pleopod is markedly shorter than the middle one; the telson reaches only to the distal part of the statocyst, its lateral margins are armed with 3-4 spines, and the emargination is broad and fairly deep with spinules along the central part (cf. Brattegard, 1969, fig. 23; Brattegard, 1973, fig. 19; Brattegard, 1974b, fig. 4).

The two species have been found in quite different habitats. *P. almyra* sp. nov. has been caught in fresh- and brackish-water (mixo-oligohaline) (see below). *P. bahamensis*, which is known from Bonaire, Curaçao, Colombia, Panama, Puerto Rico, the Bahamas and the Florida Keys (Brattegard, 1969, 1970b, 1973, 1974a, 1974b, 1975), has always been caught in euhaline water.

When *P. bahamensis* was described I was reluctant to include the genus in any of the four tribes of the sub-family Mysinae (Brattegard, 1969: 78, table 5) because it shared characteristics with all four tribes. At the time I did not consider the peculiar exopod of the maxilla as particularly significant. *P. almyra* sp. nov. has the same type of maxillar exopod and a similar type of exopod is only known to be present in *Diamysis americana* W. M. Tattersall, 1951 and *Nanomysis insularis* Nouvel, 1957, both species of the tribe Mysini. Renewed comparison of the genus *Parvimysis* with the tribes Erythropini, Leptomysini, Mysini and Heteromysini based on characteristics tabulated by Brattegard (1969, table 5) and on additional information gained in the discovery of *P. almyra* sp. nov. make me inclined to include the genus *Parvimysis* in the tribe Mysini.

As stated before (Brattegard, 1969), however, the classification of genera within the sub-family Mysinae should be revised.

Occurrence

Brackish-water ditch at Fort Nieuw Amsterdam near Paramaribo (20 adult ♂♂, 8 sub-adult ♂♂, 15 berried ♀♀, 2 adult ♀♀, 36 sub-adult ♀♀, 11 juvenile specimens). Coll. Dr. P. Wagenaar Hummelinck, stn 922, 16 October 1968.

Brackish-water (700 mg Cl/l) ditch at Domburg, SE of Paramaribo (2 adult ♂♂, 2 berried ♀♀, 1 sub-adult ♀). Coll. Dr. P. Wagenaar Hummelinck, stn 923, 15 October 1968.

Fresh-water (100 mg Cl/l) creek Sipari, a tributary to Tibiti, W of Zanderij, about 40 km S of Paramaribo (3 adult ♂♂, 1 berried ♀, 1 sub-adult ♀, 1 juvenile specimen). Coll. Dr. P. Wagenaar Hummelinck, stn 929, 18 October 1968.

Ecological note. — The specimens were caught in shallow brackish or fresh water. Oviparous females were taken in October. Their length ranged from 3.4 to 3.9 mm. 6 females with apparently complete broods carried 4 eggs, embryos or larvae. Other mysid species in the same samples were *Diamysis americana* and ?*Antromysis* sp.

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