

Holthuis, L. 1973

2123

Reprinted from BULLETIN OF MARINE SCIENCE  
Vol. 23, No. 3, September, 1973  
pp. 489-495  
*Made in United States of America*

BIOLOGICAL RESULTS OF THE UNIVERSITY OF MIAMI DEEP-SEA EXPEDITIONS. 99.

**MOHOCARIS, A NEW GENUS OF ALPHEID SHRIMPS  
FROM THE CARIBBEAN REGION (CRUSTACEA,  
DECAPODA, NATANTIA)<sup>1</sup>**

L. B. HOLTHUIS  
*Rijksmuseum van Natuurlijke Historie, Leiden*

**ABSTRACT**

The description is given of *Mohocaris bayeri*, a new genus and species of the family Alpheidae from the north coast of South America. One of the most remarkable features of the species, the greatly elongated uropodal endopods, distinguishes it at a glance from all known Alpheidae.

During the 1968 cruise to the southern Caribbean undertaken by R/V JOHN ELLIOTT PILLSBURY of the University of Miami, two specimens of a most peculiar alpheid shrimp were taken, one at each of two different localities. The species is new and proved to belong to an undescribed genus. The specimens were kept alive for a short time and it was possible to draw up a description of their natural colors.

I am most indebted to Drs. Gilbert L. Voss and Frederick M. Bayer of the Rosenstiel School of Marine and Atmospheric Science of the University of Miami, who made it possible for me to take part in the PILLSBURY cruise in which this interesting form was taken. They also helped me with various aspects of this study, and it is therefore a great pleasure to dedicate this species to Dr. Bayer.

***Mohocaris*, new genus**

**Definition.**—An alpheid genus with the orbital hoods open in front and unarmed. On the anterior half of the carapace a median and two sub-median rows of tubercles. No spines on the carapace. A cardiac notch present.

Abdomen smooth. Sixth abdominal somite without a movable pleural plate. Telson with two pairs of large dorsal spines; posterior margin triangularly produced in the middle, with two pairs of spines and many long setae.

Antennulae and antennae slender. Stylocerite well developed. Antennal peduncle overreaching scaphocerite and antennular peduncle.

First legs equal. Fingers twisted, dactylus broadened and dorsoventrally flattened over most of its length. Second legs with carpus 5-segmented.

<sup>1</sup>Contribution No. 1672 from the University of Miami, Rosenstiel School of Marine and Atmospheric Science. This paper is one of a series resulting from the National Geographic Society-University of Miami Deep-Sea Biology Program.

LIBRARY  
DIVISION OF CRUSTACEA

Following legs with dactylus long and simple. Epipods present on first four perciopods.

Second to fifth pleopods with appendix interna, second pleopod of male also with appendix masculina. Uropods peculiar by the enormously elongate endopods which reach with  $\frac{3}{4}$  of their length beyond the telson.

*Type, and Only, Species.*—*Mohocaris bayeri*, new species.

***Mohocaris bayeri*, new species**

Figs. 1, 2

*Material.*—Sta. 657. Off French Guiana,  $6^{\circ}58'N$ ,  $53^{\circ}10'W$  to  $7^{\circ}01'N$ ,  $53^{\circ}15'W$ ; 127-131 m deep, 9 July 1968: 1 female.—Sta. 727. Off Venezuela,  $10^{\circ}20'N$ ,  $65^{\circ}02'W$ ; 64 m deep, bottom broken shells over mud, with scattered calcareous rock or coral, 21 July 1968: 1 male.

*Description.*—The carapace forms a single hoodlike elevation over both eyes. This hood is open in front, so that the eyes are entirely exposed in frontal view; it is longitudinally depressed in the middle. The dorsal part of the anterior margin of this hood shows a spinule or granule in the middle, and short bristles over its full length; these bristles are absent from the lateral part of the hood. The carapace bears no spines at all, but shows three ridges bearing granulac, which are placed in the dorsal part of the anterior half of the carapace. One of these ridges extends over the median line of the carapace, starting at the base of the orbital hood and reaching as far back as the middle of the carapace. It bears about 12 granules, the posterior of which are the more conspicuous. The two other carinae start at the posterior base of the orbital hood and gradually curve inward, meeting each other at the posterior end of the median ridge. These outer ridges bear about 20 small granules in the posterior  $\frac{2}{3}$  of their length. The posterior margin of the carapace shows a deep cardiac notch.

The abdomen is smooth. The pleura of the first somite are rather large and overlap the carapace; their lower margin is slightly concave. The pleura of the first to fifth somites are all broadly rounded, those of the sixth somite end in an angle. The sixth somite shows a transverse groove in the anterodorsal region. The posterolateral angles of the sixth somite are truncated, with a small dorsal tooth. There is no movable plate on this somite. The telson is about as long as the sixth abdominal somite. It bears two pairs of well-sized dorsal spines at roughly  $\frac{1}{3}$  and  $\frac{2}{3}$  of its length. The posterior margin of the telson is triangularly produced and bears a row of long hairs; at each posterolateral angle there are two spines: a very short outer and a long inner. The inner spine extends beyond the posterior margin of the telson.

The eyes are well pigmented and visible in frontal view.

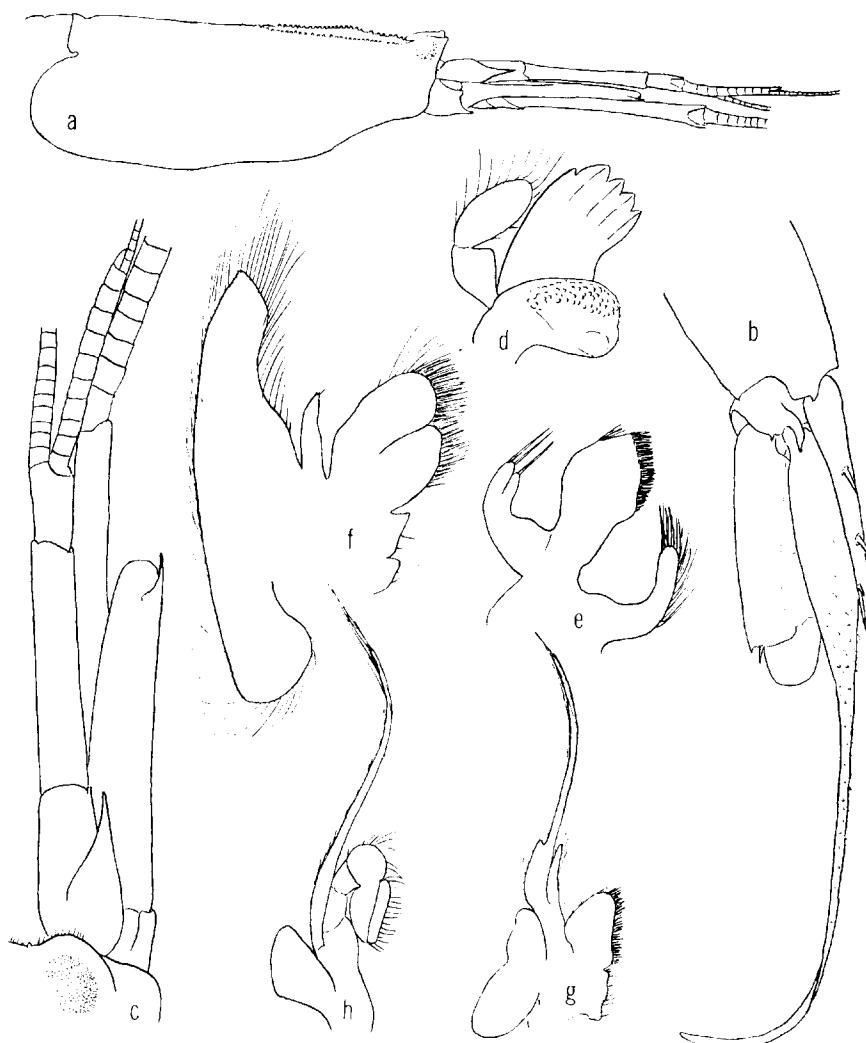


FIGURE 1. *Mohocaris bayeri*, new species: a,c-h, male holotype; b, female paratype. a, Anterior part of body in lateral view; b, posterior part of abdomen in lateral view; c, antennula and antenna in dorsal view; d, mandible; e, maxillula; f, maxilla; g, first maxilliped; h, second maxilliped. (a,  $\times 3.4$ ; b,c,g,h,  $\times 7.2$ ; d-f,  $\times 14.3$ .)

The antennular peduncle is very long and reaches with the last segment beyond the scaphocerite. The stylocerite is sharply pointed and almost attains the end of the basal segment. The second segment is distinctly longer than the basal segment and three times as long as the third segment. The two rami of the upper antennular flagellum are fused for nine segments; only one segment of the shorter ramus is free.

The antennal peduncle reaches slightly beyond the antennular. The ultimate segment is exceedingly long, measuring almost as much as the basal two segments of the antennular peduncle together. The scaphocerite, although elongate and slender, falls far short of the end of the antennal peduncle. It is about four times as long as wide and has a strong distal tooth, which overreaches the lamella. The antennal peduncle bears a spine near the outer part of the base of the scaphocerite.

The mandible has the molar process blunt, with indistinct teeth; the upper part of the distal surface is granular. The incisor process bears about five teeth which have a median longitudinal carina each. The palp consists of two distinct segments. The maxillula has the lower lacinia slender, the upper broad, the palp is deeply incised. The maxilla has the lower endite short, and the upper much better developed; both are divided into two parts; the palp is short and simple, the scaphognathite large. All maxillipeds have well-developed exopods. In the first maxilliped, the two endites are separated by a distinct notch; the palp is simple and slender; the exopod has a slender caridean lobe and a long flagellum; the epipod is bilobed. The second maxilliped has the last segment applied striplike to the penultimate; an epipod, but no podobranch, is present. The third maxilliped reaches with part of the dactylus beyond the antennal peduncle. The penultimate segment is about half as long as the ultimate. An exopod, epipod, and an arthrobranch are present. The branchial formula runs as follows:

	maxillipeds			pereiopods				
	1	2	3	1	2	3	4	5
pleurobranchs	—	—	—	1	1	1	1	1
arthrobranchs	—	—	1	—	—	—	—	—
podobranchs	—	—	—	—	—	—	—	—
epipods	1	1	1	1	1	1	1	—
exopods	1	1	1	—	—	—	—	—

The first legs are equal. They reach with part of the palm beyond the antennal peduncle. The dactylus is about half as long as the palm. It ends in a narrow curved claw, but has the basal two-thirds very broadly widened and dorsoventrally flattened. The widened part is oval, with the longer axis of the oval standing somewhat obliquely on the long axis of the



FIGURE 2. *Mohocaris bayeri*, new species, male holotype: a, third maxilliped; b, first pereiopod, dorsal view; c, fingers of first pereiopod, ventral view; d, second pereiopod; e, third pereiopod; f, first male pleopod; g, second male pleopod. (a-e,  $\times 7.2$ ; f,g,  $\times 14.3$ .)

finger. The fixed finger, although widening slightly and gradually towards the base, is slender throughout; it also ends in a slender curved apex. Neither of the fingers has any teeth on the cutting edges. The fixed finger shows several spinules in the basal part. The palm is smooth dorsally and

ventrally, but has a row of four or five shallow depressions on each lateral surface, which gives it a lumpy appearance when viewed dorsally. The carpus is extremely short and cup-shaped. The merus is about as long as the palm. Neither carpus nor merus has any spines or spinules.

The second legs are short, reaching to about the end of the antennular peduncle. The fingers are about as long as, or slightly longer than, the palm. The carpus is three times as long as the chela. It is divided into five segments, the proximal of which is the longest, being longer than the four others together,  $\frac{3}{4}$  as long as the merus, and about as long as the ischium. The third leg reaches with part of the dactylus beyond the antennal peduncle. The dactylus is long and slender, measuring slightly more than half the length of the propodus. The propodus bears three small spinules on the posterior margin. The carpus is slightly longer than the propodus and  $\frac{3}{4}$  as long as the merus. The fourth and fifth legs are similar to the third. The propodus of the fifth leg shows many tufts of hair in the distal part of the posterior margin.

The first pleopod of the male has the endopod very small and slender; it is usually hidden by the much larger exopod. The second pleopod of the male has the appendix masculina somewhat shorter than the appendix interna and provided with stiff bristles at the top. In the female, the endopod of the first pleopod is elongate oval.

The protopod of the uropod ends in a broad lobe over the exopod and a narrow lobe over the endopod; both lobes end in a spine. The exopod is broad and reaches with about  $\frac{1}{4}$  of its length or less beyond the telson. The diaeresis is distinct and ends laterally in a small tooth, some distance to the inner side of which there is a slender spinule. The endopod is most remarkable by being extremely lengthened, reaching with almost  $\frac{3}{4}$  of its length beyond the telson and being more than 2.5 times as long as the exopod. The basal part of the endopod is oblong and continues posteriorly as a long streamerlike extension. The dorsal surface of the endopod bears spinules and short hairs.

*Size.*—The carapace length of the male is 7 mm, of the female 8 mm.

*Color.*—The following color description was made after the living specimens. A longitudinal white median band extends over the full length of the body, from the anterior margin of the orbital hood to the tip of the telson. The white band is flanked by a broad, dark red band on each side. On the carapace there may be some white lines in the red bands, while in the uncolored part below the red band the lateral surface of the carapace shows an oblique red line, which extends from near the anterior margin backward and down. On each of the abdominal somites, a small white spot may be found in the red bands. The abdominal pleura are uncolored. The telson shows the median white band, lateral of which it is red. The

long endopod of the uropod is red with a white basal spot at the inner margin. The exopod has a red spot at the base, one near the end of the diaeresis, and one near the distal margin. The antennulae and antennae are red, with the exception of the upper antennular flagellum, which, apart from two red bands, is uncolored. The last segment of the third maxilliped is red. The legs are uncolored or show some pink spots. The pleopods are colorless.

**Affinities.**—The new genus *Mohocaris* is closest to *Salmoneus* Holthuis, 1955, in that (1) it has two orbital hoods fused into a single structure, which is open anteriorly, (2) there is no movable pleural plate on the sixth abdominal somite, (3) epipods are present on the first four pereiopods, (4) an arthrobranch is present at the base of the third maxilliped, and (5) no molar teeth are present on the fingers of the chelipeds. However, the presence of tubercular ridges on the carapace, the extremely elongate uropodal endopods, and the peculiar shape of the chelae of the first pereiopods distinguish the genus at once from all other genera in the family.

**Name.**—The generic name *Mohocaris* was suggested by Dr. Frederick M. Bayer. It refers to the "Moho," an extinct bird of Hawaii, which had two tail feathers strongly elongated.

**Distribution.**—So far the species is only known from the types, which were taken off the north coast of South America (Venezuela and French Guiana) at depths of 64 and 127-131 m. The bottom at Station 727 was rough, consisting of shell rubble over mud with scattered calcareous rocks and pieces of coral. The bottom at Station 657 was not noted, but most of the stations in the area were rather similar to Station 727 in bottom structure, *viz.*, a hard bottom with shell rubble.

**Types.**—The holotype male from Station 727 is deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (Reg. No. USNM 140276). The paratype female forms part of the collection of the Rijksmuseum van Natuurlijke Historie, Leiden (Reg. No. Crust. D.28958).

#### SUMARIO

#### *Mohocaris*, UN NUEVO GÉNERO DE CAMARONES ALFEIDOS DE LA REGIÓN DEL CARIBE (CRUSTACEA, DECAPODA, NATANTIA)

Se da la descripción de *Mohocaris bayeri*, nuevo género y especie de la familia Alpheidae de la costa norte de América del Sur. Uno de los aspectos más interesantes de la especie, los endopodios uropodales grandemente elongados, la distingue a primera vista de todas las demás especies de alfeidos conocidos.