

# Gulf and Caribbean Research

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Volume 7 | Issue 1

---

January 1981

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### Recommended Citation

Stuck, K. C. 1981. *Pseudomma heardi*, a New Peracarid (Crustacea: Mysidacea) from Continental Shelf Waters Off Mississippi. Gulf Research Reports 7 (1): 53-57.

Retrieved from <https://aquila.usm.edu/gcr/vol7/iss1/8>

DOI: <https://doi.org/10.18785/grr.0701.08>

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## **PSEUDOMMA HEARDI, A NEW PERACARID (CRUSTACEA: MYSIDACEA) FROM CONTINENTAL SHELF WATERS OFF MISSISSIPPI**

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**ABSTRACT** *Pseudomma heardi* n. sp. is described and illustrated. Specimens were obtained from plankton samples taken in 18 to 60 meters depth in offshore waters of Mississippi. This new species can be distinguished from other species of *Pseudomma* by the presence of 16 to 21 serrations on the anterior and lateral margins of the ocular plate, strong lateral spine of antennal scale which extends well beyond apex of scale and 4 to 6 spines on lateral margins of telson.

### **INTRODUCTION**

The offshore mysid fauna of the Gulf of Mexico is poorly known. While approximately 28 species of mysids have been reported from Gulf waters (Tattersall 1951; Brattegard 1969, 1970; Stuck et al. 1979a; Stuck and Heard 1981), the majority are known only from estuarine and nearshore waters. Examination of plankton samples taken in offshore waters of Mississippi revealed the presence of an undescribed species of mysid referable to the genus *Pseudomma* Sars, 1879.

Stuck et al. (1979a) first recorded the occurrence of the present species of *Pseudomma* from eastern Gulf of Mexico waters. A brief description of the female (Stuck et al. 1979b) was presented; however, a complete description awaited the collection of male specimens.

Sars (1870) erected the genus *Pseudomma* within the tribe Erythropini to include two species, *P. affine* Sars, 1870 and *P. roseum* Sars, 1870. Murano (1974) reviewed the genus, described 11 new species from the central and western Pacific and provided a key for the identification of 34 species. *Pseudomma californica* Băcescu and Gleye, 1979 has since been described from California waters (Băcescu and Gleye 1979). With the addition of the present material, the genus now contains 36 species. All species of *Pseudomma* are easily distinguished from other species of Erythropini by the possession of a large ocular plate formed by the fused eyestalks which lacks a prominent spinous process on its anterolateral margin.

### **MATERIALS AND METHODS**

Specimens used in the present study were obtained from plankton samples collected from continental shelf waters off Mississippi through a National Marine Fisheries Service grant, Public Law 88-309, Project 2-42-R. Samples were obtained using a 0.5 m plankton net with 0.5 mm mesh netting and equipped with flow meter and opening-closing device. Simultaneous surface, midwater, and bottom samples were taken at each sampling site. Measurements of total length were made from the anterior margin of the

rostral plate to the distal tip of the telson. The holotype and one paratype specimen were deposited in the United States National Museum of Natural History (USNM), Washington, D.C. Additional paratype material has been deposited in the museum of the Gulf Coast Research Laboratory, Ocean Springs, Mississippi.

### **TAXONOMIC DESCRIPTION**

#### *Pseudomma heardi* new species

*Pseudomma* sp., Stuck et al. 1979b: p. 233, figs. 2e, 3e, 4e, 5e

**Material Examined** – 2 males (3.8 mm, 3.7 mm); 30°02'30"N, 88°40'15"W; bottom water plankton tow; depth 18 meters; 11-20-68. 1 female (3.8 mm); 29°42'00"N, 88°27'30"W; midwater plankton tow; depth 37 meters; 11-12-68. 2 females (3.5 mm, 3.7 mm); 29°24'15"N, 88°17'00"W; bottom water plankton tow; depth 60 meters; 11-20-68.

**Diagnosis** – Lateral tooth of antennal scale extending well beyond apex. Anterior and lateral margins of ocular plate with 16 to 21 coarse teeth. Terminal segment of endopod of male fourth pleopod without single long modified seta. Endopods of uropods extending well beyond distal tip of telson, slightly shorter than exopods. Lateral margin of telson with 4 to 6 spine-like serrations. apex armed with 3 pairs of long spines increasing in length medially.

#### *Description*

**General body form** (Figure 1) – slender, small, adult males and females to 3.8 mm; thorax and abdomen distinctly separate.

Anterior margin of carapace evenly convex, anterolateral corners rounded; dorsal gastric region just anterior to cervical sulcus swollen in appearance; posterior margin emarginate, exposing eighth thoracic segment.

**Frontal lamina** (Figure 2A) – scarcely visible below ocular plate in dorsal view, anterior margin armed with about 13 dorsally pointed serrations.

**Antennular peduncle** (Figure 2B) – more robust in males than females, first segment twice length of second, slightly

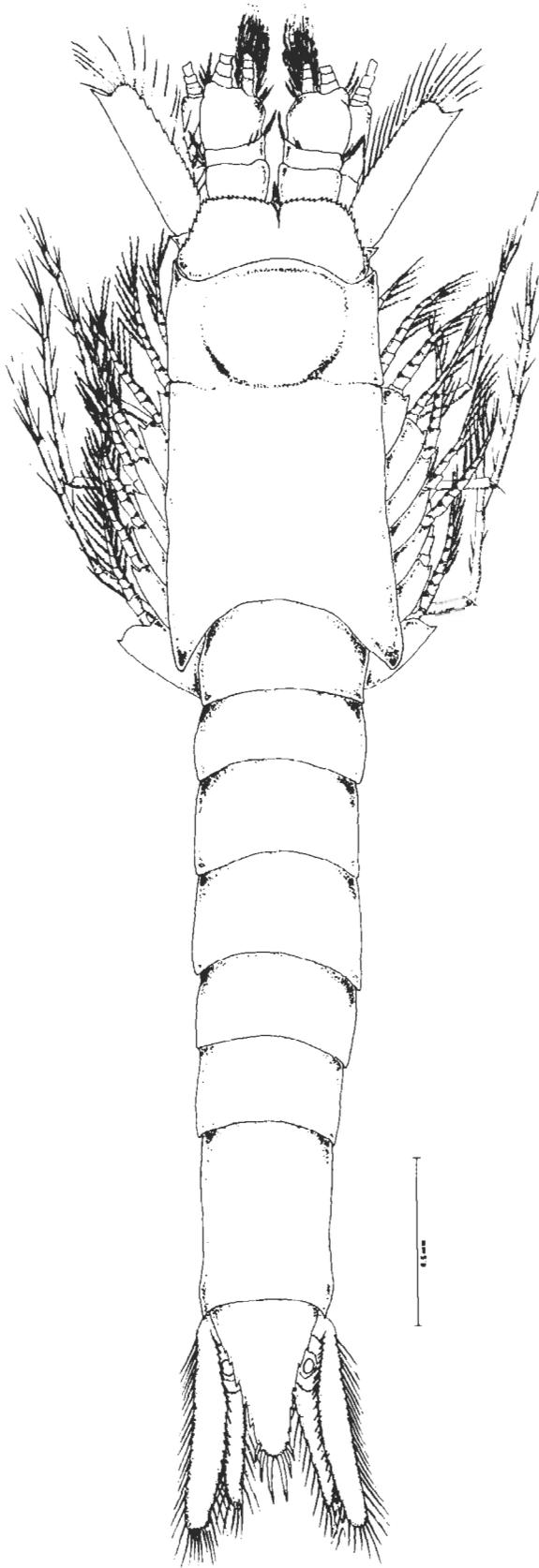


Figure 1. Entire body, dorsal (3.7 mm male).

shorter than third; distolateral margin of first segment somewhat produced, bearing pair of large plumose setae and pair of smaller simple setae; distomedial margin of second segment bearing pair of large plumose setae and several simple setae; distolateral margin of third segment with few simple setae, distomedial margin with 1 or 2 plumose setae and pair of simple setae, males with densely setose lobe on ventral margin; flagellum typical of genus.

**Antennal scale** (Figure 2C) – about 3.8 times as long as maximum width, lateral margin straight, devoid of setae, ending in strong lateral tooth which extends well beyond apex, inner margin and apex setose; second and third segments of peduncle subequal in length, distomedial margin of third segment bearing cluster of simple setae. outer margin with single simple seta, second segment with pair of stout plumose setae and single long simple seta on distomedial margin; first segment very small, barely distinguishable from sympod; flagellum typical of genus.

Eyestalks fused into large rectangular ocular plate. cleft in midline, anterior and lateral margins armed with 16 to 21 coarse teeth.

**Mandible** (Figure 2D) – typical of genus; palp with enlarged second segment, bearing row of about 8 plumose setae on inner margin, outer margin with about 12 long simple setae and several plumose setae; third segment about 0.6 times as long as second, reduced in width, bearing row of about 18 pectinate setae on posterior margin and a single long barbed, curved spine distally.

**Maxillule** (Figure 2E) – typical of genus; inner lobe with 3 large spined “setae” and several smaller simple and plumose setae; outer lobe with about 10 stout, serrate apical spines and cluster of 3 plumose subapical setae.

**Maxilla** (Figure 2F) – typical of genus, exopod large, bearing about 11 plumose setae along outer margin; endopod 2-segmented, bearing about 15 long plumose setae on apex and inner margin; third sympodal segment trilobed, bearing numerous serrate spines and plumose setae; lobe of second sympodal segment enlarged, bearing about 25 long plumose setae on distal margin.

**Endopod of first thoracic limb** (Figure 3A) – robust, dactyl bearing strong simple spine on distal tip, posterior margin bearing two strong serrate “setae,” anterior margin with cluster of 4 plumose setae; carpo-propodus subequal in length with merus and ischium, bearing cluster of 3 plumose setae and single simple seta on posterior distal corner. one plumose seta on anterior margin; posterior margins of merus, ischium and preischium with 8, 7, and 5 stout plumose setae, respectively, decreasing in length proximally. anterior margins of each segment with single plumose seta; posterior margin of basis pubescent, bearing pair of plumose setae on inner, lateral, and distal margins.

**Endopod of second thoracic leg** (Figure 3B) – stout; dactyl one-half length of carpo-propodus, with strong simple spine on distal tip, anterior margin bearing 5 plumose “spines” and single simple seta, posterior margin with

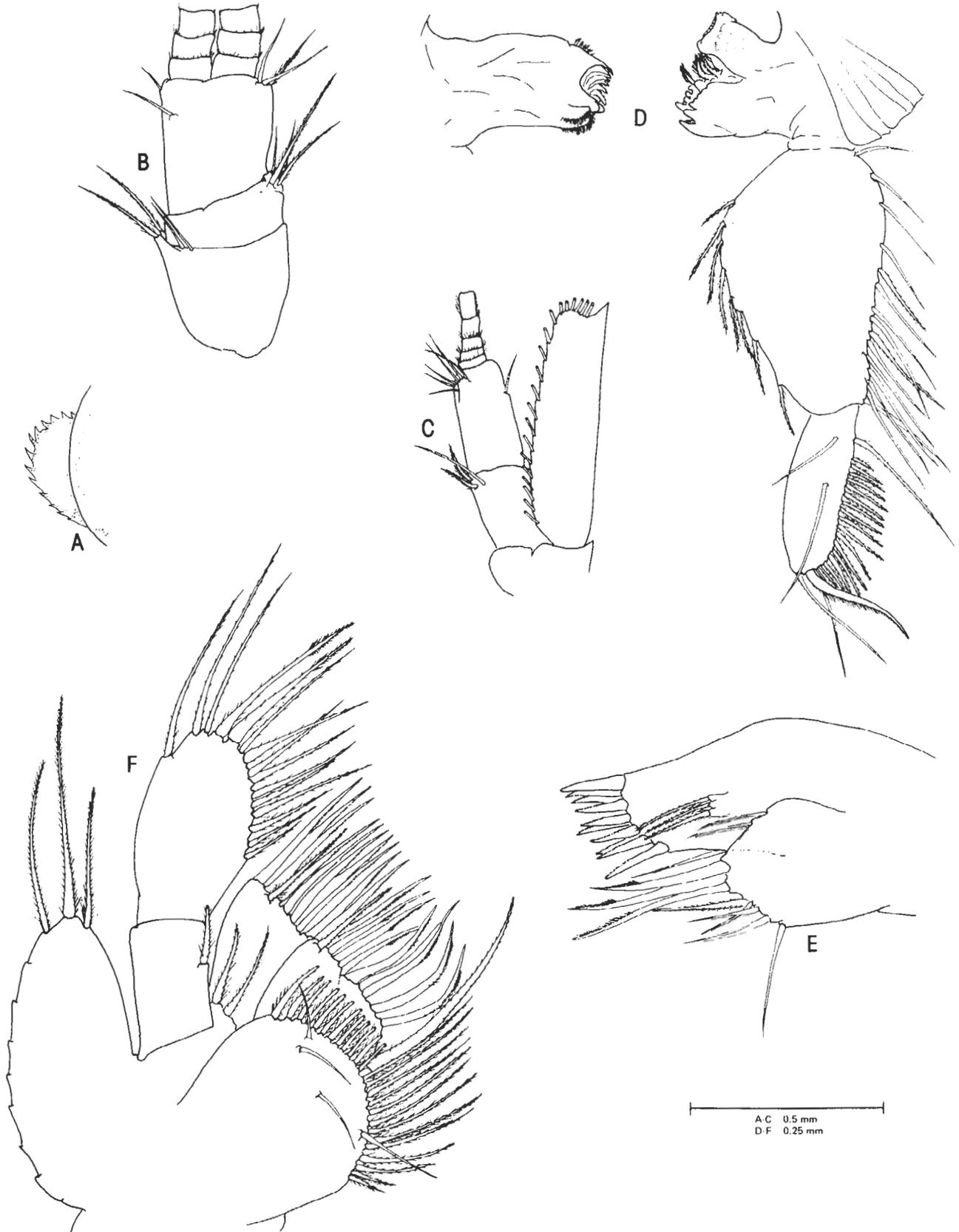


Figure 2. A. Frontal lamina (lateral view); B. Antennular peduncle; C. Antennular peduncle and scale; D. Left and right mandible with palp; E. Maxillule; F. Maxilla. A, E-F. 3.7 mm male; B, C. 3.7 mm female.

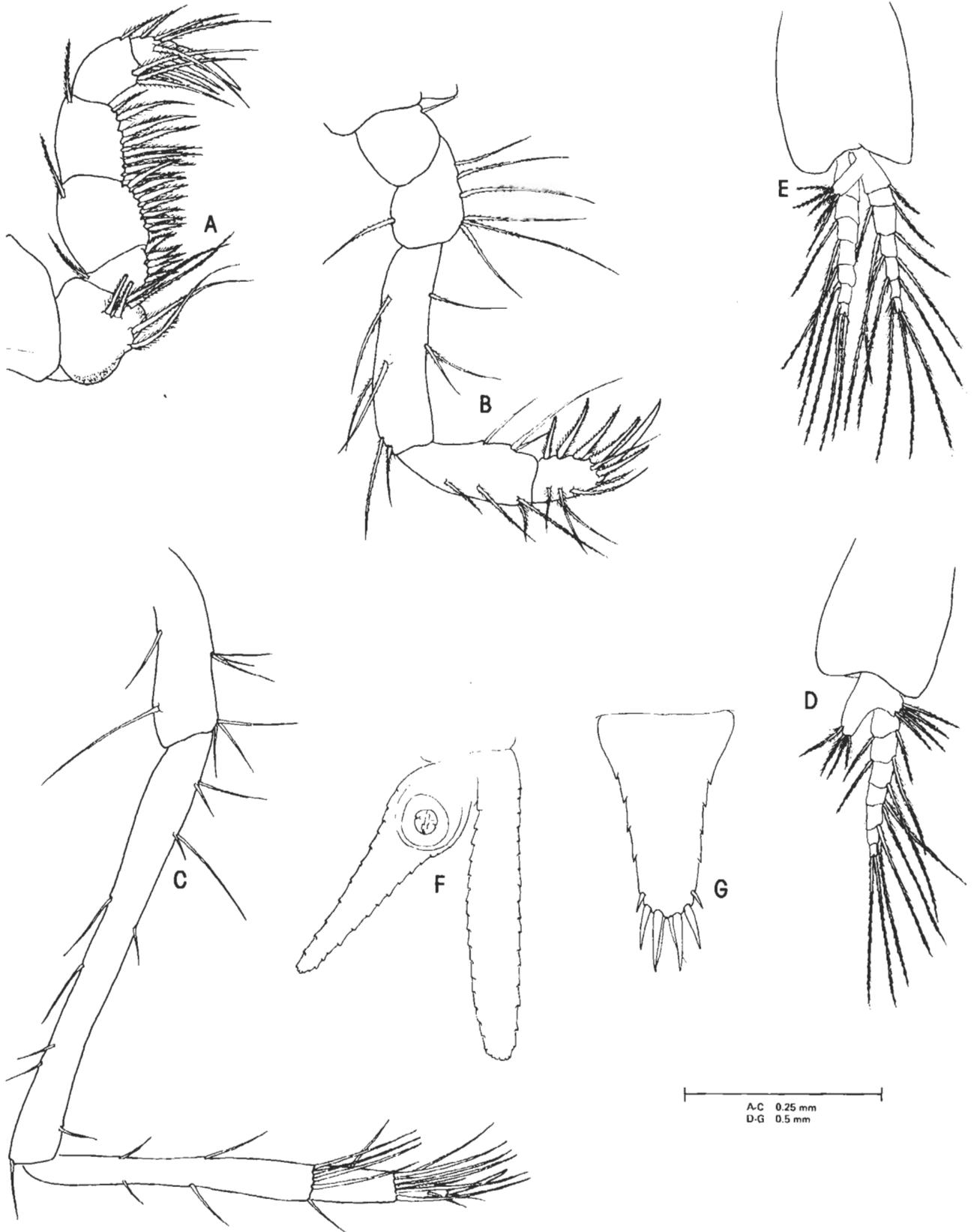


Figure 3. A. Endopod, first thoracic leg; B. Endopod, second thoracic leg; C. Endopod, third thoracic leg; D. First pleopod; E. Fourth pleopod; F. Right uropods; G. Telson. A-E. 3.7 mm male; F, G. 3.7 mm female.

plumose setae; merus slightly longer than carpo-propodus, twice length of ischium.

**Endopod of third thoracic leg** (Figure 3C) – slender; dactyl bearing simple spine on distal tip, partially obscured by dense cluster of simple and plumose setae extending from distal margin of propodus; distal margin of carpus also with cluster of simple setae; anterior margins of ischium, merus, and carpus with scattered clusters of simple setae.

**First male pleopod** (Figure 3D) – with 1-segmented endopod bearing 4 plumose setae distally and pseudo-branchial lobe furnished with 4 plumose setae, exopod 7-segmented.

**Fourth male pleopod** (Figure 3E) – with 7-segmented endopod bearing pseudo-branchial lobe similar to first pleopod; lacking extremely long simple seta on terminal segment; exopod 7-segmented.

All pleopods of female reduced to simple setose, uniramous plates.

**Uropods** (Figure 3F) – slender, exopod about 1.25 times as long as endopod, 1.6 times as long as telson; exopods and endopods devoid of spines, setose along both inner and outer margins.

**Telson** (Figure 3G) – linguiform, shorter than sixth abdominal segment, apex armed with 3 pairs of spines increasing in length medially and a pair of delicate plumose setae, apical spines longer in males than females, lateral margins slightly concave, bearing 4 to 6 "serrations."

**Holotype** – USNM 181984, male (3.8 mm); 30°02'30"N; 88°40'15"W.

**Paratype** – USNM 181985, female (3.8 mm); 29°42'00"N; 88°27'30"W.

**Type habitat** – Mid- and bottom-water plankton in 18 to 60 meters depth, continental shelf waters off Mississippi coast.

**Etymology** – This species is named in honor of Richard Heard in recognition of his work on Crustacea of the northern Gulf of Mexico.

#### Remarks

*Pseudomma heardi* n. sp. appears to fit best into the *Affine* species group (sensu Murano 1974). This group is

characterized by serrate eyeplates and telsons with 3 to 6 lateral and 3 or 4 pairs of apical spines. Certain peculiarities should, however, be noted in the present species. A vertically descending serrated frontal lamina beneath the ocular plate as illustrated here has not been noted in other species of the genus. The lateral margins of the telson in all specimens examined did not bear distinct spines, but rather appeared serrate as in *P. crassidentatum* Murano (1974, Fig. 18e).

The following combination of characters best distinguish *P. heardi* from the other described species of *Pseudomma*:

1. Ocular plate with 16 to 21 teeth on the anterior and lateral margins.

2. Lateral tooth of antennal scale extending well beyond apex.

3. Pleopods of male with endopods and exopods subequal in length and not bearing long specialized setae on terminal segments.

4. Telson with 4 to 6 serrations on lateral margins and 6 apical spines.

*Pseudomma heardi* is the first species of *Pseudomma* reported from Gulf of Mexico waters. Three species, *P. truncatum*, *P. affine*, and *P. roseum*, have been reported from the western North Atlantic (Tattersall 1951).

Murano (1974) has described the habitat of the genus *Pseudomma* as living on or close to the seafloor, having taken most species by bottom-water plankton nets and from the stomachs of benthic fishes. Wigley and Burns (1971) reported *P. affine* from benthic samples taken from the Gulf of Maine and south of Georges Bank. They reported the bathymetric range of all records from the North Atlantic as 80 to 914 meters. While very few specimens of *P. heardi* were obtained, all were taken from bottom and midwater plankton samples in relatively deep shelf waters.

#### ACKNOWLEDGMENTS

I thank Lucia O'Toole of the Gulf Coast Research Laboratory Word Processing Office for her assistance in preparation of the manuscript. This work was supported through a grant from the Department of Commerce, NOAA, National Marine Fisheries Service, under Public Law 88-309, Projects 2-42-R and 2-215-R.

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