

REPORTS ON THE SCIENTIFIC RESULTS OF THE FIRST
ATLANTIS EXPEDITION TO THE WEST INDIES, UNDER
THE JOINT AUSPICES OF THE UNIVERSITY OF HAVANA
AND HARVARD UNIVERSITY

Preliminary Descriptions of One New Genus and Seventeen
New Species of Decapod and Stomatopod Crustacea *

BY FENNER A. CHACE, JR.

Museum of Comparative Zoölogy.

The final reports on the results of these expeditions will contain complete descriptions and figures of the following species.

Family Pasiphaeidae

Pasíphaea poeyí, sp. nov.

Holotype.—Male, M.C.Z. No. 10237, Bahia de Cochinos, Santa Clara Province, Cuba, Lat. 22° 07' N., Long. 81° 08' W., 220-275 fathoms, February 25, 1938; station 2963-D.

Paratypes.—Ovigerous female, Nicholas Channel north of Santa Clara Province, Cuba, Lat. 23° 16' 30" N., Long. 80° 11' W., 415 fathoms, March 14, 1938; station 2990-A.

Female, off Bahia Cardenas, Matanzas Province, Cuba, Lat. 23° 24' N., Long. 81° 00' 30" W., 370-605 fathoms, March 16, 1938; station 2995.

Carapace about as long as the first three abdominal somites, not carinate dorsally except on the gastric tooth. The latter does not reach quite as far as the anterior margin of the carapace. Branchiostegal sinus very shallow, merely forming a sinuous outline to the anterolateral margin of the carapace; the branchiostegal spine arises from the margin of the carapace. Abdomen with no trace of a carina

* Contribution No. 199 of the Woods Hole Oceanographic Institution.

on the first three somites; fourth, fifth and sixth somites somewhat flattened dorsally making an obtuse angle with the lateral surfaces. Hinder margin of sixth somite evenly rounded off without any spine or sharp projection. Telson about three-fifths as long as sixth segment and very faintly grooved dorsally on the proximal half, then the groove disappears completely and finally reappears again, becoming very distinct at the distal end. Tip of telson nearly transverse, slightly convex either side of a shallow median sinus; the emargination is deeper in the ovigerous female, but still quite shallow. Basal joint of antenna with an inferior spine; the antennal scale is slightly less than half as long as the carapace, the blade narrowly truncate, not broadly rounded at the end. Third maxillipeds fall short of the end of the antennal scale. First two pairs of legs nearly equal in length, the second reaching slightly farther than the first, both pairs overreach the tip of the antennal scale by about half the length of the fingers. Both first and second legs have a strong spine on the basis and another on the ventral distal angle of the carpus, that of the second pair being much the stronger. The merus of the first leg is unarmed, that of the second with a single ventral spine at about the end of the proximal third. Fingers of the first chela about three-fourths as long as the palm, those of the second slightly longer than the palm.

Measurements.—Total length of holotype about 51 mm., carapace 14.7 mm. The ovigerous female paratype has a carapace length of 22.2 mm. and the non-ovigerous female a carapace length of 21.2 mm.

This species seems to show the closest affinities with *P. americana* Faxon, *P. cristata* Bate, *P. flagellata* Rathbun, *P. kaiwiensis* Rathbun, *P. unispinosa* Wood-Mason and *P. merriami* Schmitt. *P. americana* differs by having the telson more strongly notched, the branchiostegal sinus very deep and a spine at the middle of the lower margin of the merus of the second legs. *P. cristata* has the gastric spine of different form and apparently no spine on the basis of the first and second legs. *P. flagellata* has the telson longer and grooved for the entire length and the meri of the first legs multispinose. In *P. kaiwiensis* the branchiostegal sinus is more pronounced and the merus of the second legs multispinose. According to Schmitt, *P. unispinosa* has the carapace sharply carinate for most of its dorsal margin. Finally, *P. merriami* has a much more pronounced branchiostegal sinus, the spine on the merus of the second legs at the distal third and the third maxillipeds and first two pairs of legs proportionately longer.

Parapasíphaë macrodactyla, sp. nov.

Holotype.—Female, M.C.Z. No. 10238, S.S.E. of Bahía de Guan-
tanamo, Oriente Province, Cuba, Lat. 19° 40' N., Long. 75° 03' W.,
1920 fathoms, March 5, 1938; station 2968.

Carapace dorsally sharply carinate for practically its entire length the carina becoming rather high and thin on the gastric region. There are no spines on the lateral portions of the carapace near the anterior margin and the branchiostegal sinus is rounded, not quite semicircular. A ridge starting behind the antennae runs somewhat downward subparallel to the lower margin of the carapace as far as the branchial region where it forks, the lower branch passing horizontally backward nearly to the posterior margin, the upper branch passing diagonally upward toward the posterior end of the upper margin of the carapace, but curving downward again before going much more than halfway and disappearing before reaching the hind margin. Another short, sinuous ridge arises behind the antennules and passes diagonally downward, but disappears before reaching the postantennal ridge. Rostrum slants somewhat downward, reaching as far as the middle of the cornea where it terminates in a narrow, somewhat truncate tip armed at the upper angle with a prominent spine. There is a spine arising from the dorsal carina at about the end of the proximal third of the rostrum and a vestige of a second spine about in line with the posterior margin of the orbits. Abdomen not carinated on the first three somites, although the posterior portion of the third is obscurely angulate dorsally. Fourth segment ends in a broadly triangular tooth, sharply carinated in the midline, which overhangs the fifth segment. The latter is broadly flattened dorsally. The sixth is smoothly rounded. Telson nearly half again as long as sixth somite, dorsally sulcate for its entire length and armed terminally with nine spines, of which the outer pair is much the largest. Eyes of the form usual in the genus; width of cornea about half the length of the eyestalks from the base to the cornea. Antennular peduncle stout, extending to about the middle of the antennal scale; stylocerite broad, the terminal spine directed outward. Antennal peduncle with a spine below the base of the scale. The latter is between one-third and two-fifths as long as the carapace and rostrum, rather narrowly truncate distally with a prominent distal spine. Third maxillipeds extend beyond the antennal scale by about one-third the length of the terminal segment. First pereopods extend beyond the antennal scale by all but the proximal fourth of the palm. There is a spine on the basis, one stout spine in the distal half and several stout setae on the lower margin of the merus, a sharp angle at the lower distal end of the carpus and several setae but no spines on the hand. Palm somewhat triangular in cross section and about

one-third longer than the fingers; the latter are slender and cross for some distance at the tip. Second legs extend beyond the first by about half the length of the fingers. They are armed with a ventral terminal spine on the basis, a single spine on the lower margin of the ischium, five spines and several setae on the lower margin of the merus, a very strong compressed spine at the lower angle of the carpus and several spinules or stout setae on the hand. The slender fingers are between a fifth and a fourth again as long as the palm and they cross at the tips like the first pair. The third legs reach almost to the middle of the palm of the second pair. The fourth extend about to the middle of the merus of the third. And the fifth pair are longer than the fourth, extending about to the distal third of the merus of the third pair.

Measurements.—Total length about 71 mm.; length of carapace and rostrum 24.8 mm.; length of rostrum 3.0 mm.; length of antennal scale 9.3 mm.; length of palm of first leg 6.9 mm.; length of fingers of first leg 5.2 mm.; length of palm of second leg 8.1 mm.; length of fingers of second leg 9.9 mm.

The form of the rostrum, the absence of lateral spines on the carapace and, particularly, the length of the fingers of the second pair of legs serve to distinguish the present species from all previously described forms.

Family Bresiliidae

Lucaya, gen. nov.

Similar to *Bresilia* Calman (Trans. Royal Irish Acad., vol. 31, pt. 1, 1896, p. 7) except that there are exopods on all five pairs of pereopods rather than only on the first two pairs and the gill series is made up of five pleurobranches, the one above the last legs being well-developed rather than vestigial.

The genus name is derived from *Lucayos*, the original name of the Bahama Islands.

Lucaya bigelowi, sp. nov.

Holotype.—Male, M.C.Z. No. 10239, east of Great Abaco Island, Bahamas, Lat. 26° 12' N., Long. 76° 26' W., 2610 fathoms, January 29-30, 1938; station 2946.

Integument pitted or coarsely punctate. Carapace short and broad, dorsally carinated in the anterior half by the prolongation of the rostral carina and armed with a strong spine at the lower angle of the orbit but without any trace of a spine below this, the anterolateral angle being smoothly rounded. Rostrum curved slightly downward, robust, supported by a stout lateral carina continuous with the posterior margin of the orbit. In cross section the rostrum would appear nearly quadrate due to its breadth at the lateral carinae. It extends as far as the end of the antennular peduncle and is armed dorsally with twelve small, closely set, subequal teeth; the ventral margin is unarmed. Abdomen without trace of a carina or armature of any kind, although the third segment is produced over the fourth in a curious hood-like manner as in *Bresilia atlantica* Calman. Telson somewhat shorter than the sixth abdominal somite and armed with two pairs of dorsolateral spinules situated in the posterior half, and eight terminal spines of which the next to the outer pair are the strongest. Eyes extend slightly beyond the mid-point of the rostrum when turned forward; the cornea is dark brown in color and but little wider than the stalk upon which it is set rather obliquely. Antennular peduncle stout, the second and third segments subequal in length. Lamina of antennal scale more sharply angular and extending even farther beyond the outer spine than in *B. atlantica*. First pair of pereopods somewhat more robust than the second and little, if any, shorter. Last three legs not very long and decreasing in length progressively from the third to the fifth; the ischial and meral joints of the third and fourth legs are armed with a few long spines.

Measurements.—Total length about 19 mm.; length of carapace and rostrum 7.0 mm.; length of rostrum 2.7 mm.

Aside from the generic characters, this species differs from *Bresilia atlantica* Calman (Calman; Trans. Royal Irish Acad., vol. 31, pt. 1, 1896, p. 7, pl. 1, figs. 1-14, pl. 2, figs. 15-18, and Kemp; Fisheries Ireland, Sci. Invest., 1908, No. 1 (1910), p. 82, pl. 10, figs. 1-7) as follows. There is no spine at the anterolateral angle of the carapace. The rostrum reaches as far as the end of the third antennular segment instead of nearly to the end of the second, is somewhat curved downward rather than horizontal or even slightly concave dorsally and has twelve dorsal teeth and none below rather than three to four dorsal and two to four ventral. The telson has two pairs of dorsolateral spinules instead of six to eleven, and eight terminal spines of which the next to the outermost are largest instead of twelve with the outer pair the largest; the telson is somewhat shorter in proportion to the sixth abdominal somite. The eyes are well pig-

mented and set obliquely on their stalks. The antennular peduncle is shorter and stouter, the second segment being subequal in length to the third rather than twice as long. Finally, the last three pereopods are much shorter and decrease rather than increase successively in length posteriorly.

This species is named for Dr. Henry B. Bigelow, Curator of Oceanography in the Museum of Comparative Zoölogy, whose efforts were instrumental in the success of the present expedition.

Family Psalidopidae

Psalidopus barbouri, sp. nov.

Holotype.—Ovigerous female, M.C.Z. No. 10240, Nicholas Channel south of Cay Sal Bank, Lat. 23° 21' N., Long. 79° 58' W., 300-315 fathoms, March 13, 1938; station 2987-C.

Integument form, everywhere hispid. Carapace armed with a median dorsal row of long spines, another row starting at the base of the rostrum and pursuing a slightly sinuous course above the branchial region to the hind margin and a second lateral row below the branchial region; this last sub-branchial row is not quite continuous with a row passing backward from the anterior margin behind the antenna as far as the branchial region. The only other distinct spines on the carapace are one just below the lower angle of the orbit on the anterior margin, one at the anterolateral angle and one or two on the posterior edge of the branchial region between the ends of the supra-branchial and sub-branchial rows. Rostrum a little more than half again as long as the carapace, ascendant and nearly straight until just behind the tip where it turns a little more strongly upward. It is armed with four rows of spines, dorsal, ventral and lateral, of which the dorsal and ventral are made up of spines about twice as long as those of the lateral. Abdomen with a mid-dorsal row of spines on each of the first six somites and several spines on the lateral portions and on the borders of the pleurae very much as in *P. huxleyi* Wood-Mason. Telson densely hispid dorsally. The appendages are almost identical with those of *P. huxleyi*. The holotype carries about a dozen large eggs.

Measurements.—Total length 115.7 mm.; length of carapace 22.6 mm.; length of rostrum 35.7 mm.; length of abdomen 61.0 mm.

In the present collection, from nearly the same locality, is a smaller female specimen about 68 mm. long which agrees with the holotype in practically every particular except that there is a long,

needlelike spine on the last thoracic and all of the abdominal sternites much as in *P. spiniventris* Wood-Mason. It therefore seems likely that the ventral spines in this genus are either individual variations or are evidences of immaturity, as might be deduced from the fact that the two known specimens of *P. huxleyi* are larger than any one of the five or six specimens of *P. spiniventris* so far discovered. Whichever is the explanation, it seems safe to assume that there is but one Indo-Pacific species, *P. huxleyi*, of which *P. spiniventris* now becomes a synonym. The Atlantic species differs only in having a shorter, straighter rostrum and the lateral spines of the carapace confined almost entirely to but two longitudinal rows.

This species is named for Dr. Thomas Barbour, Director of the Museum of Comparative Zoölogy, who is largely responsible for making the present expedition possible.

Family Pandalidae.

***Plesionika macropoda*, sp. nov.**

Holotype.—Male, M. C. Z. No. 10241, Bahía de Cochinos, Santa Clara Province, Cuba, Lat. 22° 07' N., Long. 81° 08' W., 195-235 fathoms, February 23, 1938; station 2961-D.

Paratypes.—A male from the same station.

Female, Old Bahama Channel, due north of Punta Alegre, Camagüey Province, Cuba, Lat. 22° 48' N., Long. 78° 48' W., 220-225 fathoms, March 10, 1938; station 2980-B.

Carapace dorsally carinate on the anterior two-thirds and armed on the anterior margin with a strong antennal spine and a somewhat smaller branchiostegal spine. Rostrum nearly twice as long as carapace, descendent in its proximal third and then ascendant and nearly straight from that point to the apex. The rostral crest is armed with two or three movable and five fixed spines, of which the movable and the proximal one of the fixed spines are behind the orbit; beyond the end of the antennular peduncle the dorsal margin of the rostrum is unarmed. The ventral margin bears eleven subequally spaced teeth. Abdomen smoothly rounded dorsally, the third segment produced posteriorly but the angle formed is obtuse, not acute. The sixth somite is a little more than twice as long as the fifth and very little longer than the telson. Telson armed with four pairs of dorsolateral and six terminal spines arranged as follows: a median pair, an outer

pair nearly twice as long as the median and above the bases of the outer pairs a third much smaller pair similar to the spinules of the dorsolateral series. Eyes large with a prominent ocellus which, however, is not completely detached from the cornea. Antennular peduncle short, the stylocerite reaching about to the end of the first segment. There is a strong spine on the antennal peduncle below the base of the scale. Antennal scale with the outer spine reaching very little beyond the narrowly truncate end of the blade. Third maxillipeds extend beyond the antennal scale by the entire length of the terminal segment which is shorter than the penultimate. All of the pereopods are very long and slender, the last three pairs extending far beyond the tip of the rostrum. First pair extend beyond the antennal scale by the entire propodus and dactyl and half of the carpus. Second legs subequal, extending beyond the antennal scale by the chela and a little more than half of the carpus; the latter is made up of 20 to 23 segments. Third legs extend beyond the antennal scale by the distal sixth of the merus and all of the succeeding segments; the propodus is 15 times as long as the dactyl and 1.16 times the length of the carpus. Fourth leg reaches as far forward as the third and extends beyond the antennal scale by the last two segments and four-fifths of the carpus; the propodus is 20 times as long as the dactyl and 1.7 times as long as the carpus. Last legs do not extend quite as far forward as the two preceding pairs, reaching beyond the antennal scale by the dactyl and propodus and half of the carpus; the propodus is 21 times the length of the dactyl and 1.9 times as long as the carpus.

Measurements of holotype.—Total length about 70 mm.; length of carapace 12.5 mm.; length of rostrum 23 mm.

The unarmed distal portion of the rostrum and the widely spaced ventral teeth separate this species at a glance from most of the known forms of both *Plesionika* and *Parapandalus*. It seems to show the closest affinities with *Plesionika alcocki* (Anderson), *Plesionika uniproducta* Bate and *Parapandalus cottei* (Kotte). From the first it is distinguished by the presence of an ocellus on the eyestalk and the more recurved rostrum. *Plesionika uniproducta* differs likewise in lacking an ocellus and also in having shorter pereopods and the anterior tooth of the dorsal crest at a greater distance from the preceding teeth. *Parapandalus cottei* appears similar, but apparently has no dorsal teeth behind the margin of the orbit.

Family *Glyphocrangonidae**Glyphocrangon alispina*, sp. nov.

Holotype.—Ovigerous female M. C. Z. No. 10242, off Bahia Cardenas, Matanzas Province, Cuba, Lat. 23° 24' N., Long. 81° 00' 30" W., 370-605 fathoms, March 16, 1938; station 2995.

Paratype.—Ovigerous female Nicholas Channel, north of Santa Clara Province, Cuba, Lat. 23° 16' N., Long 80° 11' W., 415 fathoms, March 14, 1938; station 2990-A.

Integument covered with a short, dense pubescence. Carapace with dorsal crests farther apart in front of the cervical groove than behind it; the portion behind the groove armed with three or four obtuse tubercles, that in front with six or seven; area between the crests smooth, without tubercles. Second crest with four tubercles behind the cervical groove; this crest becomes obscure anteriorly, being indicated by about four tubercles, the anterior being placed almost directly above the preceding one, and anterior to these a strong spine on the margin of the hepato-gastric groove. Third crest pitted but not tuberculate, the posterior portion ending in a spine with a tubercle just above and anterior to it, the anterior portion armed with a small, slender spine followed by the long, slender, remarkably outstanding antennal spine. Fourth crest pitted, unarmed, the anterior portion terminating just before reaching the slender branchiostegal spine; the latter curves upward slightly and terminates about on a level with the anterior margins of the eyes, extending slightly beyond the level of the tips of the antennal spines. Fifth crest indicated by two short, pitted elevations. Except for the crests and tubercles mentioned, the carapace is smooth beneath the pubescence. Rostrum slender, upturned at the tip, slightly longer than the carapace and smooth except for a low median dorsal carina and two pairs of spines, one at the base and another pair just behind the anterior margins of the eyes. Abdomen, including the telson, almost exactly as in *G. nobilis* A. Milne Edwards. The eggs measure about 2.8 mm. across their greatest diameter.

Measurements of holotype.—Total length 71 mm.; length of carapace 16.8 mm.; length of rostrum 17.7 mm.; distance between tips of antennal spines 18.1 mm.

This species is very similar to *G. nobilis* A. Milne Edwards from which it differs most noticeably in the very long and outstanding antennal spines which, in *G. nobilis*, are little if at all more divergent than the branchiostegal spines. The third carina of the carapace is

somewhat more prominent in its posterior half in the present species so that that portion of the carapace appears broader in dorsal view. Finally, the posterior portion of the third carina terminates anteriorly in a relatively strong spine, whereas in *G. nobilis* there is merely a low right angle at the most.

Glyphocrangon (Plastocrangon) caecescens atlantica, subsp. nov.

Holotype.—Female, M.C.Z. No. 10243, south of Santa Clara Province, Cuba, Lat. 20° 47' N., Long. 80° 24' W., 2125 fathoms, February 26, 1938; station 2966.

This form is very near *G. (P.) caecescens* Wood-Mason from the Bay of Bengal (see: Alcock, Deser. Catal. Indian Deep-Sea Crust. Decap. Macrura and Anomala, 1901, p. 133) but it differs in the following relatively minor characters. The rostrum is armed with two pairs of spines instead of three, a single basal pair and a pair at about the level of the anterior margin of the eyes. The anterior portion of the third crest of the carapace, which is said to be lacking in the Indian form, is indicated by a row of five or six tubercles. The two teeth on the anterior portion of the fourth crest behind the branchiostegal spine are reduced to low, obtuse lobes. The abdomen is as in the typical form except that the pleura of the fifth somite is armed with but two teeth, the posterior of which is the larger, rather than bearing a dentiform angle either side of a central tooth as on the second somite.

Measurements.—Total length 94.8 mm.; length of carapace 23.2 mm.; length of rostrum 20.2 mm.

Apparently there is but one known specimen of the typical form of this species, a male which was considerably smaller than the present female. It is impossible to tell, therefore, whether the differences noted between these two specimens are constant or whether they are individual, sex or age differences. It is perhaps significant that both the Indian specimen and this one, apparently the first member of the subgenus to be recorded from the Atlantic, were taken from very deep water.

Family Homaridae

Eunephrops cadenasí, sp. nov.

Holotype.—Female, M.C.Z. No. 10235, Nicholas Channel south of Cay Sal Bank, Lat. 23° 21' N., Long. 79° 58' W., 300-315 fathoms, March 13, 1938; station 2987-C.

Allotype.—Male, M.C.Z. No. 10236, south end of Santaren Channel, S.E. of Cay Sal Bank, Lat. 23° 23' N., Long. 79° 17' W., 250 fathoms, March 12, 1938; station 2985.

Carapace about as broad as high, covered with a short pubescence placed among rather closely set low tubercles which become sharpish granules anteriorly. The very deep cervical suture which passes over the back, a second deep suture in the form of an inverted Y behind the hepatic region, a submarginal groove extending along the edge of the carapace from one hepatic region to the other and an impressed, colorless line extending along the dorsal midline from the middle of the rostrum to the posterior margin of the carapace are all quite smooth and devoid of either pubescence or tubercles. Antennal spine strong, flattener dorso-ventrally, extending from the margin of the carapace behind the base of the antenna nearly as far as the tips of the eyes. Behind this, on the middle of the hepatic region is a much smaller, sharp spine and, directly above the last and some distance behind the orbit, is a similar spine. Rostrum very similar to that in *Homarus*; it curves down in the proximal two-thirds of its length and then ascends slightly to the tip. There are two pairs of strong dorsolateral spines on the proximal portion and a single small ventral denticle on the distal third. Behind the base of the rostrum are two other spines, the anterior pair similar in size and form to the lateral rostral spines but spaced farther apart; the second pair are much smaller, scarcely as large as the hepatic and postorbital spines. There is an enlarged roughened tubercle on either side of the dorsal midline of the carapace on the posterior margin of the cervical suture, but no spines. Eyes large, reniform and black. Antennular peduncle reaching as far as the lowest point of the rostrum. The second segment of the antennal peduncle is armed with a distinct spine at the base of the scale. The latter is about three-fourths as long as the fourth segment of the peduncle, about one-half as wide as long and armed with a well-marked terminal spine. Antennular flagella of subequal length, about as long as the distance from the posterior pair of postrostral teeth to the posterior margin of the carapace. Antennal flagella nearly two and one-half times as long as the carapace and rostrum. Large chelipeds similar in form to those of *Nephrops*. Merus armed with a single large terminal spine on the dorsal margin preceded by several small spines or denticles. The ventral margin has two large spines near the distal end. Carpus armed with many spines and denticles of all sizes. Hand with two parallel rows of blunt spines on each margin and a single row along the middle of either face. Fingers about as long as the palm and crossed at the tips. Second and third legs provided with small chelae fringed with setae; the palm of the second leg is 3.32 times the length of the dactyl. Fourth and fifth legs of similar form, the dactyl being of very nearly the same structure as those of the second and third legs, but there is no prolongation of the propodus to form a

chela; the propodus of the fourth leg is 3.07 times the length of the dactyl. Abdomen everywhere somewhat pubescent, especially so in the interrupted transverse dorsal sulci of the second to fifth somites. The sixth segment has a few tubercles set in the pubescence and the telson likewise has two tubercular areas either side of the shallow median depression. There are a few lateral denticles on the proximal half of the telson and a spine at either distal angle.

Measurements of holotype.—Total length from tip of rostrum to tip of telson 224 mm.; length of carapace and rostrum 112 mm.; length of rostrum 32.8 mm.; length of large cheliped 202 mm.

The male allotype is only 144 mm. long, the carapace and rostrum measuring 68 mm. It differs from the type in having no ventral denticle on the rostrum, the anterior rostral spine on the left side is missing, there are two pairs of small spines behind the postrostral spines instead of one, there is only one distal ventral spine on the merus of the left cheliped (two on the right), the smooth mid-dorsal line on the carapace is distinct only on the rostrum and behind the cervical groove and the sternites of the second to fifth abdominal somites are armed with strong median spines.

The color in the preserved specimens is a salmon pink on the dorsal surface of the carapace and rostrum, fingers and distal portions of the hands of the large chelae, the dactyls and the distal portions of the propodi of the remaining legs. Except for the tips of some of the larger spines on the chelipeds which are also salmon pink, the animal elsewhere is white.

The present species appears to be superficially very like the only previously known species in the genus, *Eunephrops bairdii* Smith (Proc. U. S. Nat. Mus., vol. 8, 1885, p. 167), which is known only from the holotype female taken in the Gulf of Darien. *E. cadenasi* can be readily distinguished from the genotype, however, by the absence of spines on the posterior margin of the cervical suture near the dorsal midline of the carapace, by the presence of a distinct spine on the second segment of the antennal peduncle at the base of the antennal scale, by the form of the antennal scale which attains the distal fourth of the fourth segment of the peduncle and terminates in a well-marked tooth rather than reaching little more than halfway along the fourth segment and ending in a minute tooth as in Smith's species and by the relative length of the palm of the second chela which is three and one-third times as long as the dactyl rather than little more than twice as long and the correspondingly long propodus

of the fourth leg which is more than three times as long as the dactyl rather than less than twice as long.

These differences all seem to ally this species more closely to *Homarus* than to *Nephrops*. In fact, with the exception of the large chelipeds, the entire aspect of the animal is very like that of *Homarus*.

This species is named for Dr. José M. Cadenas, Rector of the University of Havana, who deserves acclaim for aiding both in the organization and in bringing to a successful conclusion the present "Atlantis" expedition.

Family Uroptychidae

Uroptychus aguayoí, sp. nov.

Holotype.—Ovigerous female, M.C.Z. No. 10232, western part of Northwest Providence Channel, Bahamas, Lat. 26° 14' N., Long. 78° 43' W., 285 fathoms, February 3, 1938; station 2950.

Carapace, not including the rostrum, as long as broad at the posterior third; smooth and unarmed dorsally. It is armed laterally with a large spine at the anterolateral angle followed by a small spine then, between the anterior and posterior branches of the cervical groove, a very large spine with one or two denticles on its posterior slope. Behind the posterior branch of the cervical groove is a medium sized spine followed by six or seven denticles. Following these, the posterior fourth of the lateral margin is smoothly carinate with a submarginal gutter extending a little around the posterolateral angle of the carapace. Rostrum about twice as long as broad at base, more than twice as long as the eyestalks, slightly convex laterally and deeply channeled dorsally. Thoracic sternum with a small spine either side of the anterior emargination and a very large spine at the base of each cheliped. Third maxillipeds unarmed except for the usual pectinate inner margin of the ischium. Chelipeds three times as long as the carapace and rostrum. Merus about three-fourths as long as the carpus which, in turn, is two-thirds as long as the chela. Ischium armed with a long spine at both the upper and lower articulations with the merus and a few additional tubercles on the inner surface. Merus with from 14 to 16 long spines roughly arranged in three longitudinal rows on the inner and upper surfaces, as well as six similar spines at the articulation with the carpus. Carpus covered with numerous low denticles and armed with six spines at the distal articulation. Chela totally unarmed. Ambulatory legs with a dorsal spine on the ischium, about four dorsal denticles on the proximal half of the merus and a spine at the distal end of the lower margin

of that segment. There are two to four small movable spines near the distal end of the lower margin of the propodus. Dactyls with about nine ventral teeth which increase in size distally.

Measurements.—Length of carapace and rostrum 13.3 mm.; breadth of carapace 7.9 mm.; length of rostrum 5.5 mm.; length of eyestalk 2.0 mm.; length of chelipeds 40.0 mm.

This species is similar to *U. spiniger* Benedict from off Havana, but differs in having a broader rostrum, much more spiny chelipeds and the absence of spines on the meral and carpal joints of the third maxillipeds. From *U. bellus* Faxon it is distinguished by the broader rostrum and absence of spines on the chelae and ambulatory legs. It is rather close to *U. bouvieri* Caullery but that species has more spines on the propodi of the ambulatory legs and the spines on the carpus of the chelipeds are stronger. *U. naso* van Dam has the rostrum toothed, the meri of the ambulatory legs coarsely serrate and the chelae spinulous. From all other known species *U. aguayoi* may be separated by the spinose lateral margins of the carapace and chelipeds, the absence of gastric spines and the reduction of the spines on the propodi of the ambulatory legs.

This species is named for Dr. C. G. Aguayo, Assistant Professor of Zoology at the University of Havana.

Family Galatheidae

***Munida schroederi*, sp. nov.**

Hobotype.—Male, M.C.Z. No. 10216, 8 miles N.E. of Great Isaac Island, north of the Bimini Group, Bahama Islands, Lat. 26° 08' N., Long. 79° 02' W., 155 fathoms, February 3, 1938; station 2951.

Paratypes.—10 males, 9 females (4 ovigerous) from the same station.

2 males, 5 females (4 ovigerous), Bahia de Cochinos, Santa Clara Province, Cuba, Lat. 22° 07' N., Long. 81° 08' 30" W., 270 fathoms, February 18, 1938; station 2960.

9 males, 8 females (4 ovigerous), Bahia de Cochinos, Lat. 22° 07' N., Long. 81° 08' W., 190-210 fathoms, February 23, 1938; station 2961-C.

11 males, 12 females (10 ovigerous), Bahia de Cochinos, Lat. 22° 07' N., Long. 81° 08' W., 195-235 fathoms, February 23, 1938; station 2961-D.

6 males, 3 ovigerous females, Bahia de Cochinos, Lat. $22^{\circ} 07' N.$, Long. $81^{\circ} 08' W.$, 200-210 fathoms, February 24, 1938; station 2962.

4 males, 2 ovigerous females, Bahia de Cochinos, Lat. $22^{\circ} 07' N.$, Long. $81^{\circ} 08' W.$, 180-190 fathoms, February 24, 1938; station 2962-B.

6 males, 7 females (5 ovigerous), Bahia de Cochinos, Lat. $22^{\circ} 07' N.$, Long. $81^{\circ} 08' W.$, 210 fathoms, February 24, 1938; station 2962-C.

2 ovigerous females, Bahia de Cochinos, Lat. $22^{\circ} 07' N.$, Long. $81^{\circ} 08' W.$, 175-210 fathoms, February 24, 1938; station 2962-D.

56 males, 74 females (69 ovigerous), Bahia de Cochinos, Lat. $22^{\circ} 07' N.$, Long. $81^{\circ} 08' W.$, 190-180 fathoms, February 25, 1938; station 2963.

3 males, 5 females (4 ovigerous), Bahia de Cochinos, Lat. $22^{\circ} 07' N.$, Long. $81^{\circ} 08' W.$, 205 fathoms, February 25, 1938; station 2963-C.

2 ovigerous females, entrance to Bahia Matanzas, Matanzas Province, Cuba, Lat. $23^{\circ} 10' N.$, Long. $81^{\circ} 29' W.$, 170-255 fathoms, March 21, 1938; station 3000.

6 males, 6 females, north coast of Cuba; station ?

Carapace broad, depressed and very spinose. It is widest at the posterior third. Rostrum more than twice as long as the supraocular spines which reach only to the middle of the eyes. Gastric spines behind and slightly outside of the line of the supraoculars. A pair of spines directly behind the gastric. There may be a single median spine between the supraocular and gastric spines. There is a large spine followed by a smaller one on the midline of the gastric region and three prominent median spines on the cardiac region. The remainder of the carapace is covered with many spines arising from the transverse striae, the most prominent of which form a longitudinal row of three to five on the inner branchial region either side of the anterior cardiac region. There are six lateral spines behind the postantennal spine. The posterior margin bears about twelve small spines. Second and third abdominal somites armed with four widely spaced spines on the anterior margin and one, somites two, pairs of smaller ones near the posterior margin. The fourth somite is similarly armed with four anterior spines, but near the posterior margin are three or five closely set spines, one of which is median. Third maxillipeds armed with a long spine at the anterolateral angle of the ischium and a similar spine at the middle of the inner margin of the merus. The chelipeds are a little less than four times the length of the carapace and rostrum. Merus subquadrate with rows of spines at each angle except the outer ventral. Carpus somewhat more cylindrical due to the absence of the row of spines on the outer dorsal angle and the reduction of those on the inner ventral angle to a

single spine. Palm also subcylindrical with a row of spines at the internal dorsal angle and two or three scattered ones on the external face. Fingers slightly shorter than the palm; the fixed finger curves outward at the base to form a slight gape in the male and terminates in a fork. Ambulatory legs flattened. The meri have a row of spines on either margin, the carpus a dorsal or anterior row and a single subterminal spine on the ventral or posterior edge, the propodus is unarmed except for a single small subterminal spine on the posterior margin. The dactyls are sinuous with a proximal lobe on the lower margin, and unarmed.

Measurements of holotype.—Length from tip of rostrum to end of telson 32.8 mm.; length of carapace and rostrum 15.8 mm.; greatest breadth of carapace 11.8 mm.; length of rostral spine 3.8 mm.; length of cheliped 60.3 mm.

M. schroederi is apparently closely related to *M. hispida* Benedict from American Pacific waters. Although the carapace is hispid and similar in form, the Atlantic species is easily distinguished by the shorter rostral and much shorter supraocular spines, the gastric spines are placed much farther apart and there is but one, rather than two, spines on the inner margin of the merus of the third maxillipeds.

This species is named for Mr. William C. Schroeder, leader of the expedition.

Munidopsis bermudezi, sp. nov.

Holotype.—Ovigerous female, M.C.Z. No. 10231, S.E. of Bahia de Guantanamo, Oriente Province, Cuba, Lat. 19° 43' 30" N., Long. 74° 57' 30" W., 1330-1650 fathoms, March 4, 1938; station 2967-B.

Paratype.—One female, north of Gibara, Oriente Province, Cuba, Lat. 21° 19' N., Long. 76° 05' W., 1450 fathoms, March 8, 1938; station 2976.

Carapace scarcely longer than broad, everywhere densely pubescent except for a bare spot either side of the anterior boundary of the cardiac region and another pair lateral to the postgastric region. There is a strong postantennal tooth, another at the anterolateral angle separated from the first by a nearly semicircular emargination; immediately behind the anterolateral tooth is a third of nearly the same size followed by four or five denticles diminishing in size posteriorly. Behind the posterior branch of the cervical groove the carapace broadens abruptly, forming a prominent tooth; the carapace is broadest at this point. Behind this tooth the lateral margin is armed with two or three denticles and several prominent rugae. The only

armature on the dorsal surface of the carapace is a pair of prominent postrostral spines on the gastric region. Under the pubescence the carapace is largely smooth except for a few low tubercles and scattered short rugae on the posterior third. Rostrum simply triangular, much less than half the length of the remainder of the carapace and bluntly carinate in the dorsal midline. Abdomen densely pubescent like the carapace. Second, third and fourth somites bicarinate dorsally, the anterior carina of each somite extending nearly to the margin of the pleura, the posterior confined to the terga. Last three somites largely smooth and punctate beneath the pubescence. Eystalks immovable and armed with a strong distal spine at the base of which is set obliquely the minute, colorless cornea. Merus of the third maxillipeds armed on the internal margin with three sharp teeth. All of the legs are covered dorsally with long hair. Chelipeds shorter than the carapace plus the rostrum, armed with a spine on the ischium, a row of six strong spines on the dorsal angle of the merus as well as two other spines at the distal end of that joint, five similar spines on the carpus and a single smaller spine on the margin of the hand near the base of the dactyl. The hand is very short and broad with the fingers about the same length as the palm. First ambulatory legs with a spine on the ischium, a row of six spines on the merus, six on the carpus and two on the propodus. Second legs with an ischial spine, six or seven on the merus, four or five on the carpus and possibly two, sometimes none, on the propodus. Third legs with no ischial spine, four on the merus, four or five on the carpus and none or possibly one on the propodus. Dactyls of all three legs armed on the ventral border with six or seven small spines. The holotype carries about 75 round, colorless eggs, about 2.5 mm. in diameter.

Measurements of holotype.—Total length about 69 mm.; length of carapace plus rostrum 37.7 mm.; breadth of carapace 27.0 mm.; length of rostrum 10.2 mm.

This species is distinguishable from all other robust species of *Munidopsis* by the combination of a single pair of gastric spines, immovable eyestalks, large single ocular spine and very reduced cornea. It closely resembles the figure of *M. ceratophthalmus* Alcock (Catal. Indian Deep-Sea Crust. in Indian Mus., 1901, p. 271, pl. 3, fig. 2). The eyes are of the same form as in that species, but the lateral spine behind the posterior branch of the cervical groove is much larger in the "Atlantis" specimens and there are two spines on the gastric region which are absent in Alcock's species.

This species is named for Dr. P. J. Bermudez of the University of Havana, a member of the expedition.

Munidopsis riveroi, sp. nov.

Holotype.—Male, M.C.Z. No. 10230, Nicholas Channel north of Santa Clara Province, Cuba, Lat. 23° 10' N., Long. 80° 04' W., 360 fathoms, March 14, 1938; station 2989.

Paratype.—Ovigerous female from the same station.

Carapace without spines, well areolated, the highest points being on the gastric and cardiac regions. The raised portions are coarsely tuberculate, the depressed areas smooth and pubescent. Rostrum two-thirds as broad as long and partially covering the eyes. It is deeply hollowed dorsally by a broad longitudinal furrow, abruptly narrowed beyond the eyes and then drawn out to a minutely denticulate point so that the distal margins are sinuous. Apex slightly upturned so that the rostrum appears sinuous in lateral view. Second, third and fourth abdominal segments transversely bicarinate with a low median tooth on each carina. Eyes movable, comparatively large, unpigmented and unarmed. Merus of third maxillipeds with two teeth near the middle of the inner margin. Chelipeds about two and one-half times as long as the carapace plus the rostrum. Palm longer than the fingers. All of the joints are scabrous and the merus is armed on the inner margin with three evenly spaced, conical spines. Merus and carpus of ambulatory legs without spines, scabrous, the merus distinctly carinate dorsally. Propodus smooth and pubescent. Dactyl curved and armed on the lower margin with four strong teeth which increase in size distally.

Measurements of holotype.—Total length from tip of rostrum to end of uropods 36.3 mm.; length of carapace plus rostrum 17.8 mm.; breadth of carapace 11.7 mm.; length of rostrum 5.0 mm.; length of cheliped 46.2 mm.

The peculiar form of the rostrum and the totally unarmed carapace readily distinguish this species from all previously described.

This species is named for Dr. Luis Howell Rivero of the University of Havana, who was a member of the expedition.

*Family Paguridae**Pylopagurus cavimanus*, sp. nov.

Holotype.—Female, M.C.Z. No. 10233, Bahia de Cochinos, Santa Clara Province, Cuba, Lat. 22° 07' N., Long. 81° 08' W., 150-170 fathoms, February 25, 1938; station 2963-B.

Median projection of front obtuse, more prominent than the rounded lateral projections and terminating in a minute acute tooth; lateral projections also armed with a minute laterally directed tooth. Eyestalks slender, nearly three-fourths as long as the anterior part of the carapace with prominent styliform lateral scales. Antennal scale hairy, styliform, reaching to the middle of the terminal segment of the antennal peduncle and about to the distal fourth of the eyestalks. Right cheliped with a row of short spines on the lower margin of the merus and a number of strong spines scattered over the upper surface of the carpus. Chela very narrow proximally where it slightly overhangs the carpal articulation, twice as long as broad, slightly convex dorsally in a longitudinal direction and so strongly concave transversally that the lateral margins are very nearly perpendicular. The margins are everywhere armed with spines of irregular length and the dorsal surface is paved with low, roughly circular tubercles. The fingers are similarly ornamented with marginal spines and low tubercles. The left or smaller cheliped has a row of strong spines on the outer edge of the dorsal surface of the carpus and a similar row extends along the outer margin of the palm and fixed finger. The outer half of the upper surface of the chela has a few scattered spines, the inner half is smooth and sparsely hairy. First two pairs of ambulatory legs unarmed except for the dactyl which bears 20-25 spine-like setae on the dorsal edge and nine short spines on the ventral margin. Propodus of the fourth legs produced ventrally nearly to the middle of the dactyl and armed on the lower edge with several rows of short spines. Dactyl with a row of short spines on the distal two-thirds of the ventral margins. Propodus and dactyl of the last legs with densely spinose areas dorsally.

This species is at once distinguished from all other species of the genus by the extremely concave, trough-like larger chela.

Family Lithodidae

***Paralomis cubensis*, sp. nov.**

Holotype.—Female, M.C.Z. No. 10234, east of Havana, Cuba, Lat. 23° 12' 30" N., Long. 82° 12' W., 240-300 fathoms, March 22, 1938; station 3003.

Paratype.—Female with a large rhizocephalid from the same locality.

Carapace not including the rostrum about as long as broad, covered with crowded tubercles of different sizes; on most of the dorsal surface these tubercles are low and rounded, but they become more and more acute toward the margins. There is a smooth, wart-

like prominence either side of the gastric region in the cervical groove. There is no distinct spine on the gastric region although several of the anterior tubercles are acute. Margin of hepatic region armed with about six strong spines of different sizes, including the outer orbital spine. Behind the cervical groove the lateral margin of the branchial region is armed with a row of four or five spines followed by ten to twelve progressively smaller spines reaching around the posterolateral margin to about the median third of the posterior margin. The sulci either side of the cardiac region converge posteriorly but do not meet. Orbits rather deeply excavate. Rostrum trispinose, the dorsal pair of spines smaller than the inferior and the latter unarmed below; there is a pair of smaller spines at the base of the rostrum and a very small spine of sharp tubercle just anterior to this pair. Eyestalks constricted in the middle and armed with several small spines or sharp granules, the largest being terminal and extending well beyond the cornea. Antennal peduncle with a small outer spine on the first segment and a long spine with a second smaller spine at its base on the second segment. Acicle with from four to six spines, the strongest being a terminal pair forming a fork, one on the dorsomedian surface behind the inner spine of the terminal pair and a fourth still more proximad on the outer margin. Chelipeds subequal in length but the right is much more robust than the left; all of the segments are strongly spinose. Ambulatory legs compressed, most markedly so on the first pair. Meri of the first two pairs armed with two rows of dorsal spines and a few sharp denticles scattered over the lateral surface. Merus of the third ambulatory legs with several strong spines on the lateral surface in addition to the two dorsal rows. Carpus and propodus of all of the legs very spiny. Dactyl with five strong dorsal and lateral spines near the base and eight to twelve slender, dark, corneous ventral spines in addition to the long, dark terminal spine. Second segment of the abdomen entire and covered, like the carapace, with setiferous tubercles which become blunt spines laterally. Third to seventh segments with a few very low scattered tubercles bearing long setae. Central portion of the sixth somite very little longer than that of the fifth. Outer margins of the left lateral portions of the third to fifth segments evenly convex and coarsely crenulate or spinose.

Measurements of holotype.—Length of carapace and rostrum 61.2 mm.; length of rostrum 8.0 mm.; greatest breadth of carapace, not including spines 53.0 mm.; length of larger schela 80.8 mm.; length of second ambulatory leg 100.0 mm.

Paralomis cubensis is apparently the first member of the genus to be recorded from the tropical Atlantic. It can be distinguished from most of the described species by the absence of spines on the gastric region, the strong lateral spines of the carapace, the failure of the lateral cardiac furrows to meet posteriorly, the absence of a

central tooth on the median rostral spine and the moderately compressed ambulatory legs. The present species seems to show the nearest relationship to *P. investigatoris* Alcock and Anderson which, however, has three large outer spines and three small inner spines on the acicle of the antennal peduncle, and to *P. verrilli* (Benedict) which is distinguished by the more expanded branchial regions, a single gastric spine, the cardiac region closed posteriorly and shorter anterolateral spines.

Family Calappidae

***Paracyclois atlantis*, sp. nov.**

Holotype.—Female, M.C.Z. No. 10212, Old Bahama Channel due north of Punta Alegre, Camaguey Province, Cuba, Lat. 22° 45' N., Long. 78° 45' W., 150-180 fathoms, March 11, 1938; station 2982-E.

Carapace everywhere finely granular and coarsely punctate, distinctly wider than long. Posterolateral margin with four large and one or two rudimentary spines. Posterior margin trilobate and coarsely granular but not toothed. Front deflexed to a vertical plane anteriorly, broadly triangular; inner orbital angles not reaching nearly as far as the tip of the front. Second abdominal somite strongly trilobate; the sixth somite 1.4 times as broad as long, constricted at the distal third. Third maxillipeds coarsely granular, the ischium provided with a deep but narrow notch at the insertion of the palp. Subdistal crest of merus of chelipeds subparallel to distal margin and armed with four or five denticulate spines. Upper margin of hand set with seven low, closely set teeth. Lower margins of meri of all ambulatory legs spinose.

Measurement.—Length of carapace 45.5 mm.; breadth of carapace 49.1 mm.

The greater proportionate breadth of the carapace, lack of teeth on the posterior margin, form of the front, narrower notch on the merus of the third maxillipeds, position and denticulate form of the teeth of the subdistal crest on the merus of the chelipeds and the presence of ventral spines on the meri of all of the ambulatory legs serve to distinguish this species from *P. milne-edwardsii* Miers from off the Admiralty Islands. The completely deflexed front and smaller posterolateral spines on the carapace separate it from the subfossil *P. grandispinis* Etheridge and McCulloch from Melbourne, Australia.

Family Xanthidae

Tetraxanthus rathbunae, sp. nov.

Tetraxanthus bidentatus Rathbun, Bull. Labor. Nat. Hist. State Univ. Iowa, vol. 4, 1898, p. 275; Bull. U. S. Nat. Mus., vol. 152, 1930, p. 458, pl. 184. Not *Xanthodes bidentatus* A. Milne Edwards, Crust. Reg. Mexico, 1880, p. 353, pl. 53, figs. 5-5b.

Holotype.—Male, M.C.Z. No. 10213, Old Bahama Channel due north of Punta Caldera, Camaguey Province, Cuba, Lat. 22° 44' 30" N., Long. 78° 41' W., 150-180 fathoms, March 11, 1938; station 2982-D.

Paratypes.—One male, one ovigerous female, Old Bahama Channel due north of Punta Alegre, Camaguey Province, Cuba, Lat. 22° 45' N., Long. 78° 45' W., 150-180 fathoms, March 11, 1938; station 2982-E.

One male, western end of Old Bahama Channel off north coast of Cuba, Lat. 23° 11' N., Long. 79° 08' W., 235-260 fathoms, March 12, 1938; station 2983.

Thanks to a query made by Mr. John S. Garth, the holotype of *Xanthodes bidentatus* A. Milne Edwards collected by the "Blake" off Grenada was found to be quite distinct from this species. The "Blake" specimen is apparently identical with *Tetraxanthus rugosus* Rathbun, 1930, which therefore must be synonymized.

T. rathbunae differs from *T. bidentatus* in its more convex carapace and less prominent anterolateral teeth. The front is not so distinctly bilobate nor is it sharply marked off from the internal angles of the orbit as in the "Blake" species. The carpus and hand of the chelipeds are smooth with a single lobe on the inner margin of the carpus, whereas in *P. bidentatus* the carpus and proximal portion of the outer surface of the palm are distinctly rugose and there is a second smaller tooth below and behind the prominent inner carpal tooth.

Family Chloridellidae

Chloridella heptacantha, sp. nov.

Holotype.—Male, M.C.Z. No. 10245, Bahia de Cochinos, Santa Clara Province, Cuba, Lat. 22° 07' N., Long. 81° 08' W., 180-190 fathoms, February 24, 1938; station 2962-B.

Paratype.—Male, Old Bahama Channel due north of Punta Alegre, Camaguey Province, Cuba, Lat. 22° 45' N., Long. 78° 45' W., 150-180 fathoms, March 11, 1938; station 2982-E.

Carapace armed with long spines at the anterolateral angles which do not, however, reach as far as the base of the rostrum. Posterolateral margin angular. Both parts of the median dorsal carina, the main anterior portion and the short carina behind the cervical groove, are bifurcate anteriorly. The marginal carinae are distinct, extending from the anterolateral spines nearly to the median third of the posterior margin of the carapace where they recurve onto the dorsal surface; lateral carinae sharp and entire, reaching from the anterolateral spines almost to the posterior margin of the carapace; intermediate carinae distinct anteriorly where they extend nearly to the anterior margin of the carapace. Rostrum longer than broad at base, noticeably narrowed anteriorly and provided with median and marginal carinae. The free thoracic somites each bear submedian and intermediate carinae. The first free somite is armed with a single flattened lateral spine, which curves slightly forward, and a nearly vertical ventral spine. Second free somite with two lateral processes, the anterior either rounded or acute and directed outward and slightly forward, the posterior acute and directed outward and backward. On the third free somite, the anterior process is indicated by a small lobe at the base of the large, acute, posteriorly directed spine. Abdomen with eight distinct carinae on the first five somites and six on the sixth. The submedian carinae terminate posteriorly in spines on the fifth and sixth somites, the intermediate on all somites but the first where they end in a right angle, and the lateral on all somites. The sixth somite is armed with six spines on the posterior margin, one on each carina. Telson just as long as its greatest breadth. The median carina is feebly notched anteriorly and terminates in a strong spine. Either side of the median carina are radiating rows of obscure pits. The pre-lateral lobe is distinct but not dentate. The submedian teeth are recurved dorsally and each bears a prominent projecting lobe on its median margin. The denticles include four to seven submedian, ten to twelve intermediate and one lateral. Neither the carinae nor the margins of the telson in the male are noticeably swollen. The inferior surface is smooth either side of the post-anal carina. Uropod with a strong dorsal spine on the first segment at the articulation with the exopod. The inner spine of the ventral bifurcate process is about twice as long as the outer with a well-developed lobe on the external margin; internally this process is provided with 15 to 20 low marginal tubercles. Eye broad, the corneal axis greater than the peduncular axis, and the cornea set obliquely on the stalk. Mandibular palp present. Raptorial claw with the carpus irregularly ridged and nodose, the dorsal carina being rather low and not prominent; margin of propodus finely and evenly pectinate with three long movable proximal spines, of which

the median is the smallest; dactyl armed with seven spines including the terminal one. There are epipods on the first four thoracic appendages.

Measurements of holotype.—Total length 57.8 mm.; length of carapace 13.5 mm.; greatest breadth of carapace 10.0 mm.; length of rostrum 2.0 mm.; breadth of rostrum at base 1.8 mm.; length of telson including spines 11.1 mm.; greatest breadth of telson 11.1 mm.; corneal axis of eye 3.0 mm.; peduncular axis of eye 2.5 mm.; length of antennal scale 7.9 mm.

The paratype is much smaller, being only 37.7 mm. long.

This species is apparently distinguished from all previously described forms by the combination of the following characters; seven spines on the dactyl of the raptorial claw, single spine on the first exposed thoracic somite and two projections on the second, absence of swelling on the carinae of the telson in the male and the prominent lobes on the median margins of the submedian spines of the telson.

PRESENTED

2 MAR 1939

