Provenzano, A.
1968

Reprinted from BULLETIN OF MARINE SCIENCE
Vol. 18, No. 3, September, 1968
pp. 627–644
Made in United States of America

BIOLOGICAL INVESTIGATIONS OF THE DEEP SEA. 37.

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LITHOPAGURUS YUCATANICUS, A NEW GENUS AND SPECIES OF HERMIT CRAB WITH A DISTINCTIVE LARVA[1]

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ABSTRACT

Lithopagurus yucatanicus gen. nov., sp. nov., is described from three specimens collected by the R/V JOHN ELLIOTT PILLSBURY in the Yucatan Channel. The species, modified for inhabiting holes in rock or rock-like sponge rather than gastropod shells, is similar to those of five other genera in having 13 pairs of gills, an accessory tooth on the ischium of the third maxilliped, and gonopods in one sex. It differs from them in having a single pair of gonopods on the male abdomen but no unpaired pleopods, while the female abdomen bears only three unpaired pleopods. The female carries a very few large eggs, the larva passing rapidly through abbreviated development. The larva possesses reduced mouthparts, an unusual telson, lacks the posterolateral carapace spines otherwise typical of the family, and is unique among hermit crab larvae in having well-developed spines on the lateral margin of the antennal scale.

INTRODUCTION

On the homeward leg of an oceanographic cruise in 1967, the University of Miami research vessel JOHN ELLIOTT PILLSBURY made a series of bottom hauls in the vicinity of Arrowsmith Bank, off the coast of the Yucatan Peninsula, Mexico. This area proved to be extremely rich in species, and a number of undescribed hermit crabs were among the crustaceans collected. Many specimens were kept alive for observations on color and behavior and to permit hatching of eggs. Some of the new species will be described in later publications, but one of them is sufficiently important to warrant early treatment. The larva of this form is so different from pagurid larvae previously described that, despite the paucity of material, a description of the larva is included herein.

The work of the author has been supported directly by grants from the National Institutes of Health and the National Science Foundation. The shipboard program of this Institution has been supported by grants from the National Science Foundation and the National Geographic Society–University of Miami Deep-sea Biology Program.

[1] Contribution No. 934 from the Institute of Marine Sciences, University of Miami. This work was supported in part by Public Health Service Research Grant GM-11244 from the Institute of General Medical Sciences, by Research Grants GB-4305 and GB-7075X from the National Science Foundation, by Biological Ship Time Grant No. GB-5776 from the National Science Foundation and by a grant from the National Geographic Society. This paper is one of a series resulting from the National Geographic Society–University of Miami Deep-sea Biology Program.

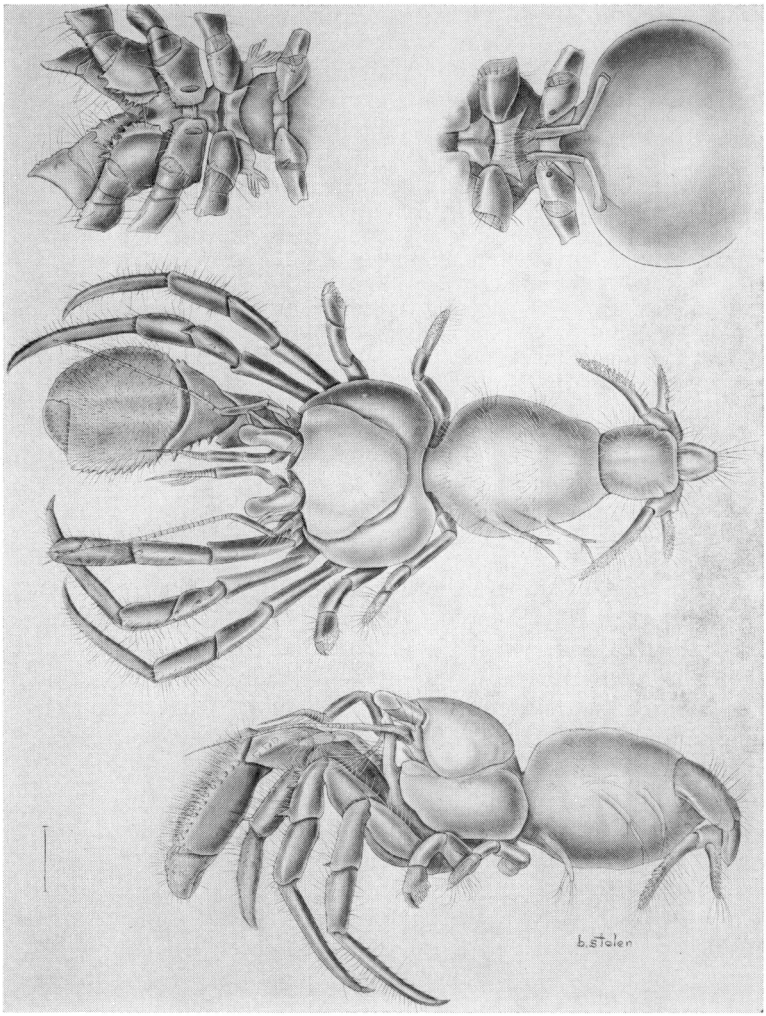

FIGURE 1. *Lithopagurus yucatanicus*, sp. n. Left and center, lateral and dorsal views of paratype female from P-581; upper right, ventral view of same; lower right, ventral view of male holotype, showing gonopods.

The illustrations, without which the manuscript would not have been written, were executed by Miss Barbara Stolen, to whom I am especially grateful. I thank Dr. Michèle de Saint Laurent-Dechancé for helpful criticisms and for permission to quote unpublished information. Mrs. C. Edith Marks has borne the often very heavy burden of feeding and caring for the many adult specimens and larvae upon which my research has depended for the past several years, and I take this opportunity to express my appreciation for her efforts. I owe thanks also to Talbot Murray and Robert Feigenbaum for assistance in the field and laboratory.

The scales in the figures represent 1.0 mm unless otherwise indicated.

Family Paguridae

Lithopagurus, gen. nov.

Diagnosis.—A pagurid with 13 pairs of gills consisting of a pair of arthrobranchs on the third maxilliped and pairs on pereiopods 1-4, with a pleurobranch on the somites of pereiopods 2-4; male with one pair of gonopods, on the second abdominal somite, and no unpaired pleopods; female with no gonopods but with three unpaired pleopods; gonopores of female paired; palp of maxillule simple, not reflexed, bearing a single terminal seta; exopodite of all three pairs of maxillipeds flagelliform; an accessory tooth present with the *crista dentata* on the ischium of mxp_3; shield of carapace well calcified, convex, rest of carapace not calcified; an acuminate rostrum; ocular acicles acute, narrow, not broad; abdomen short, plump, not coiled; dorsal surface of sixth abdominal somite calcified, convex; telson symmetrical, armed posteriorly only with setae; right cheliped much greater than left, fingers opening horizontally, major manus broad, operculiform, flat dorsal or anterior surface obscured with short setae; minor cheliped slender, finger tips corneous; tips of dactyli of major manus calcareous with minute corneous spines; pereiopod 4 subchelate, pereiopod 5 minutely so, all pereiopods well calcified; uropods elongate, subsymmetrical, bearing long corneous granules forming rasps.

Type-species.—*Lithopagurus yucatanicus,* sp. nov.

Lithopagurus yucatanicus, sp. nov.

Figs. 1-4

Diagnosis.—To the above generic diagnosis, add the following:

Shield broader than long; rostrum acute, in advance of front; antennular peduncles exceeding eyes by length of distal peduncular segment; setae of flagellum of antenna only one to two segments long; lateral surface of major manus with low rounded tubercles extending onto ventral surface; coxa of major cheliped and coxae of P_2, P_3 with sharp spines on anterior margins;

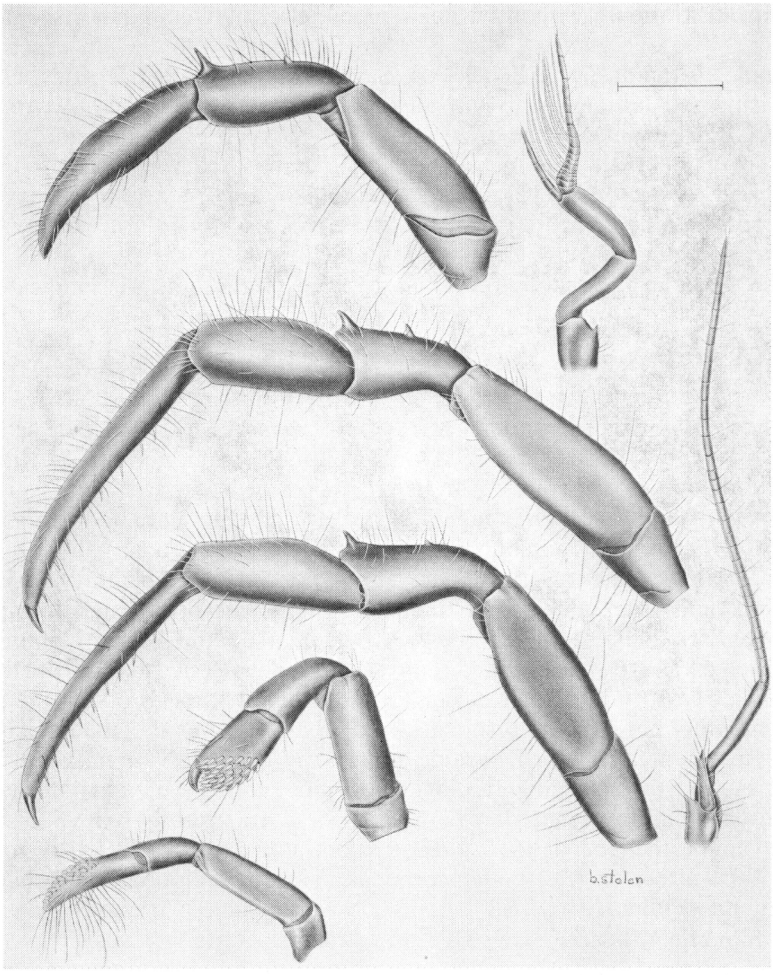

FIGURE 2. *Lithopagurus yucatanicus,* sp. n. Upper right, antennule; lower right, antenna; left, top to bottom, lateral views of pereiopods 1-5 from the left side. All appendages of paratype female from P-581.

carpus of P_2 with three large spines dorsally, that of P_3 with one large and one small spine.

Material.—HOLOTYPE: Male, shield length (SL) = 2.8 mm, carapace length (CL) = 3.2 mm; Pillsbury station P-581, 21°05′N, 86°23′W, 146-265 m, 22 May 1967. U. S. National Museum Catalog No. 122636.

PARATYPE: Female, shield length 2.6 mm, collected with holotype. To

be deposited in Museum National d'Histoire naturelle, Paris. (Illustrated specimen.)

PARATYPE: Female, ovigerous at capture, shield length 2.6 mm; Pillsbury station P-584, 21°02'N, 86°24'W, 353-347 m, 23 May 1967. U. S. National Museum Catalog No. 122637. Taken in fragment of lithistid sponge.

Description.—Hardparts calcareous, slightly iridescent. Shield strongly convex, distinctly broader than long, with prominent acute rostrum, frontal spines sharp, well behind tip of rostrum. Posterior carapace very short, total carapace length from tip of rostrum to posterior transverse margin equaling shield width.

Abdomen plump, straight not coiled, dorsal tergal plates on somites 2, 3, 4, and 5 poorly developed but with prominent bands of setae. Sixth abdominal plate strongly calcified, convex, also bearing setae.

Telson about equal in length to maximum width, tapering posteriorly but with transverse posterior margin bearing setae.

Abdominal appendages in male consisting of a symmetrical pair of uniramous gonopods arising laterally on second abdominal somite. No other abdominal appendages in male other than uropods. Female without paired gonopods or pleopods, but with unpaired biramous pleopods on three somites, most anterior of these appearing to arise from first abdominal somite, being displaced ventrally and lying far forward of tergum of the second abdominal somite. Pleopods of third and fourth abdominal somites originating at left lateral border of dorsal band of setae. In both sexes subsymmetrical uropods with very long, narrow exopodites and much shorter, narrow endopodites, both rami bearing long and spinelike, rather than low and rounded, corneous granules.

Eyestalks short, constricted in middle, width of well-developed cornea about one-third total eyestalk length. Stalks concave medially, much stouter proximally. Eyescales (ocular acicles) small, acute, unidentate, sometimes extending beyond tip of rostrum.

Antennular peduncles exceeding eyes by at least entire length of distal peduncular segment. Dorsal flagellum reaching only to middle of major manus. Setae of flagellum only one to two segments long. Antennal acicle bifid, reaching cornea.

Mandible with apparently two-segmented palp, not distinctive.

Maxillule with simple, curved, endopodal palp bearing single terminal seta.

Maxilla normal.

Maxillipeds normal, each with flagelliform exopodite. Mxp3 with strong *crista dentata* on ischium, an accessory tooth present on lateral surface of ischium.

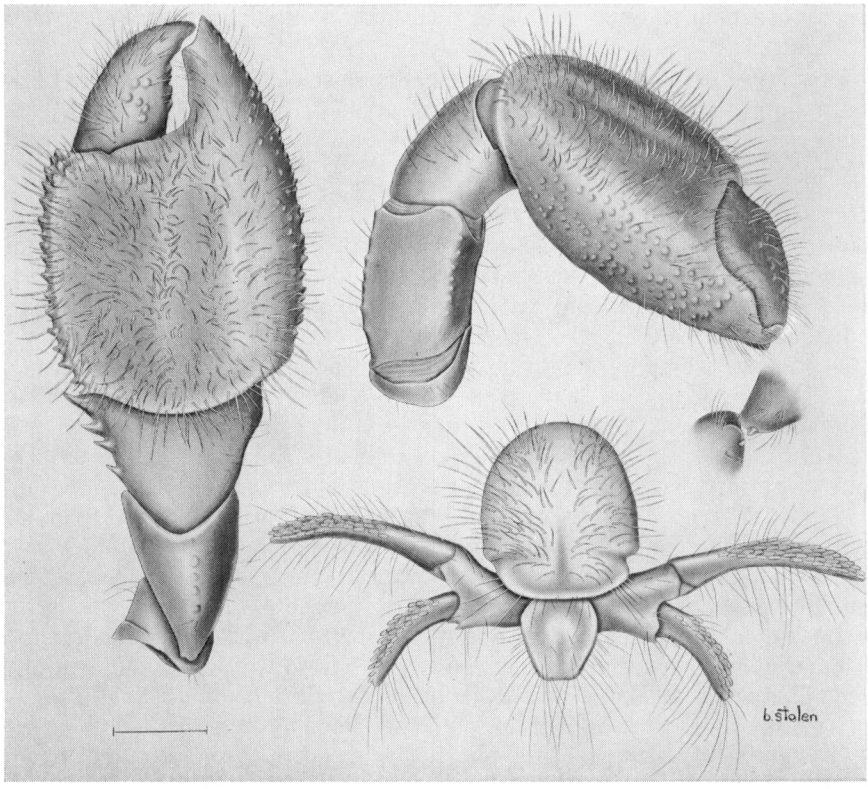

FIGURE 3. *Lithopagurus yucatanicus*, sp. n. Left, dorsal view of major chela; upper right, dorsolateral view of same; center right, detail of tips of dactyli of major manus; lower right, tail fan, including calcified plate of sixth abdominal somite. All from paratype female from P-581.

Major manus suboval, almost flat on dorsal surface but with two longitudinal, slightly raised areas. Dorsal surface covered with numerous stout, golden setae nearly obscuring surface of manus. Medial margin of manus with row of strong but blunt spines. Medial margin of movable dactylus with similar but irregularly arranged spines. Tip of movable dactylus fitting between pair of terminal spines on immovable dactylus. Lateral surface of major manus also covered with low rounded tubercles extending onto ventral surface. Major carpus with three or four spines on lateral and medial margins, smooth on dorsal surface, but with scattered setae. Merus with row of spines on lateral and medial margins. Coxa with sharp spines medially.

Minor cheliped narrow, dactyli corneous, less than one-half length of

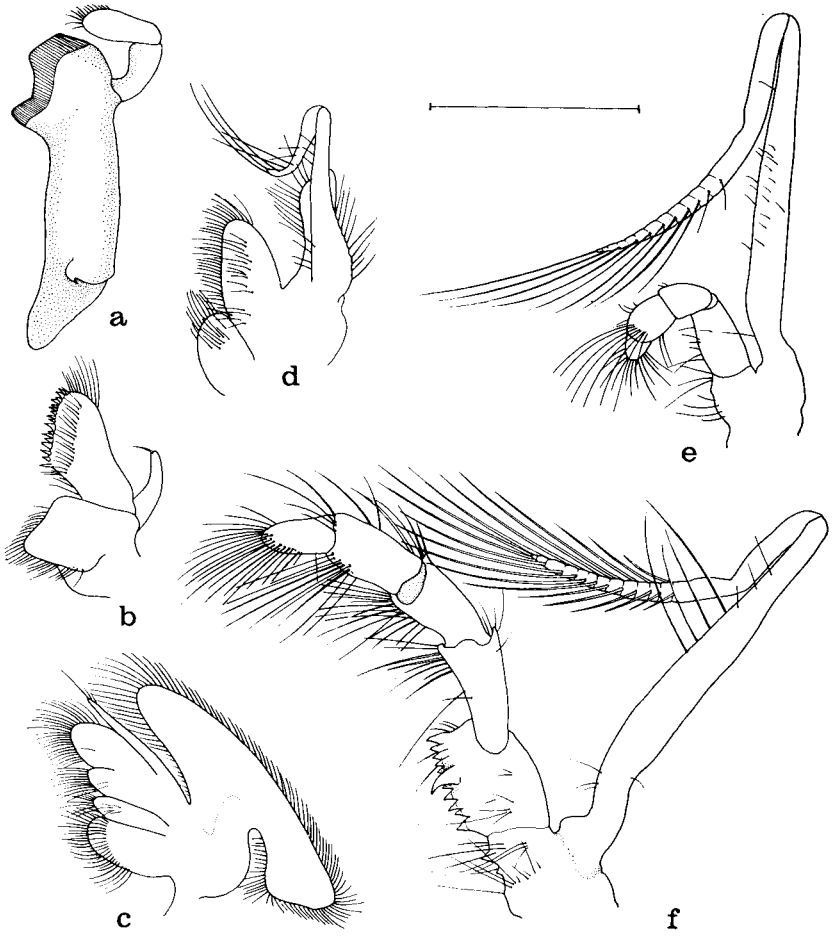

FIGURE 4. *Lithopagurus yucatanicus,* sp. n. a, mandible; b, maxillule; c, maxilla; d-f, first, second, and third maxillipeds, respectively. All from paratype female from P-581.

minor manus; manus unarmed except for long setae. Minor carpus subcylindrical, bearing two or three large well-separated spines on dorsal surface in addition to many setae. Merus not distinctly armed. Coxa lying obscured, dorsal to coxa of second pereiopod.

Second pereiopod on each side with narrow, almost straight dactylus, nearly twice length of propodus, dactylus ending in large corneous spine, a row of strong corneous spines ventrally, many setae dorsally. Propodus

with setae only; carpus with three very large sharp calcareous spines dorsally. Coxa with very large spines medially.

Third pereiopods similar to second, but with carpus bearing only a large distal spine dorsally and a very small one more proximally.

Fourth pereiopods with short curved dactylus barely exceeding long corneous granules of the propodal rasp which occupies only distal half of lateral surface of propodus.

Fifth pereiopod chelate, but with dactylus so small as to be extremely difficult to see, in contrast to well-developed, rasp-bearing propodus.

Type.—Male, shield length 2.8 mm, U. S. National Museum No. 122636.

Type Locality.—Pillsbury Station P-581, 21°05′N, 86°23′W in 146-265 meters.

Color Notes.—In life, the specimens appeared white, but practically all body parts bore some scattered red chromatophores.

Etymology.—The generic name (masculine) is derived from the Greek words for stone, *lithos*, and hermit crab, *pagourus*, and refers to the use of rocklike shelter, for which the animal is adapted. The trivial name indicates the regionally limited distribution as presently known.

Range.—Known only from the vicinity of the type locality, Arrowsmith Bank.

Ecology.—The vertical distribution of the species is not well defined, for although the deepest specimen was taken very close to 350 m, the other specimens may have come from as shallow as 146 m, or as deep as 265 m. At P-581, coral and coralline rubble characterized the bottom.

Some indication of temperature tolerance of the species was obtained during the several months that the specimens were maintained in the laboratory. The temperature for the specimens from the shallower station was lowered from 20°C to 15°C on 30 May, 1967, and was returned to 20°C on 19 October, 1967. They had been without natural or artificial shelters since collection, and were maintained in isolation in plastic trays, being fed twice a week with bits of shrimp. On 19 October, at the time the temperature was raised to 20°C, they were given short straight pieces of glass tubing which they used as burrows despite the relatively great weight which prevented them from moving their homes across the smooth bottom of the tray. They remained in these until death. The holotype male died at 20°C on 14 November, 1967, six months after capture. The temperature for one paratype female was raised from 20°C to 24.5°C on 25 October, 1967, and she died the next day.

The other paratype, which had been ovigerous and which inhabited a small piece of lithistid sponge at the time of capture, was allowed to keep

her shelter. Temperature was lowered from 20°C to 15°C on 26 May, 1967, to retard development of the eggs and because it was assumed that this female, collected at greater depth than the other specimens, almost certainly came from a temperature much below 20°C. In fact, as with the other specimens, 15°C appeared satisfactory. At the end of October, she was observed to have a single large egg in the ovary, visible through the dorsal abdominal wall. In an attempt to induce ovulation the specimen was transferred to 20°C, but after several days at that temperature she died on 2 November, 1967.

Larval Development

The ovigerous paratype bore an undetermined number of eggs, more than six but probably less than nine. No eggs were measured while viable, but their diameter was estimated to be approximately 2 mm. Following transfer from 20° to 15°C on 26 May, 1967, the female dropped several eggs at intervals. Three of them examined on 6 June contained embryos with beating hearts and partly formed eyes. Despite attempts to maintain these eggs in culture dishes the embryos died prior to hatching. Another egg dropped on 19 June remained alive and began hatching as a prezoea on 7 August, but the larva died the next day. The second larva to hatch emerged on 12 August, but died on 15 August without molting beyond first zoea. A third larva hatched on 16 August, but also died without molting. The fourth, and last, surviving embryo (the seventh observed) also hatched on 16 August at 15°C. Hatching took place between 15:00 and 16:45 hours, and at 18:10 the larva was beginning to shed the very delicate prezoeal cuticle. The larva was placed in filtered Gulf Stream water without food and on 17 August molted again, from first zoea to second zoea, the exuvia being removed at 17:00 hours, at which time *Artemia* nauplii were added to the culture vessel. On 18 August at 09:00 the animal had molted again, and the exuvia of the second zoea was recovered. On 20 August the specimen died, as an apparent stage-III zoea about to molt again, probably to glaucothoë.

Throughout the duration of larval life (approximately four days) the specimen apparently subsisted entirely on its very obvious yolk reserves and did not feed, as later examination of mouthparts indicated these appendages were never well developed.

Because of the delicate nature of the exuviae, not all structures of the stages following zoea I could be studied; the limited material was in rather poor condition.

Zoea I.—Size: CL = 2.05 mm; TL = 4.1 mm. CL is taken from the tip of the rostrum to the posterolateral margin of the carapace, the TL from the tip of the rostrum to the posterior margin of the telson. There was

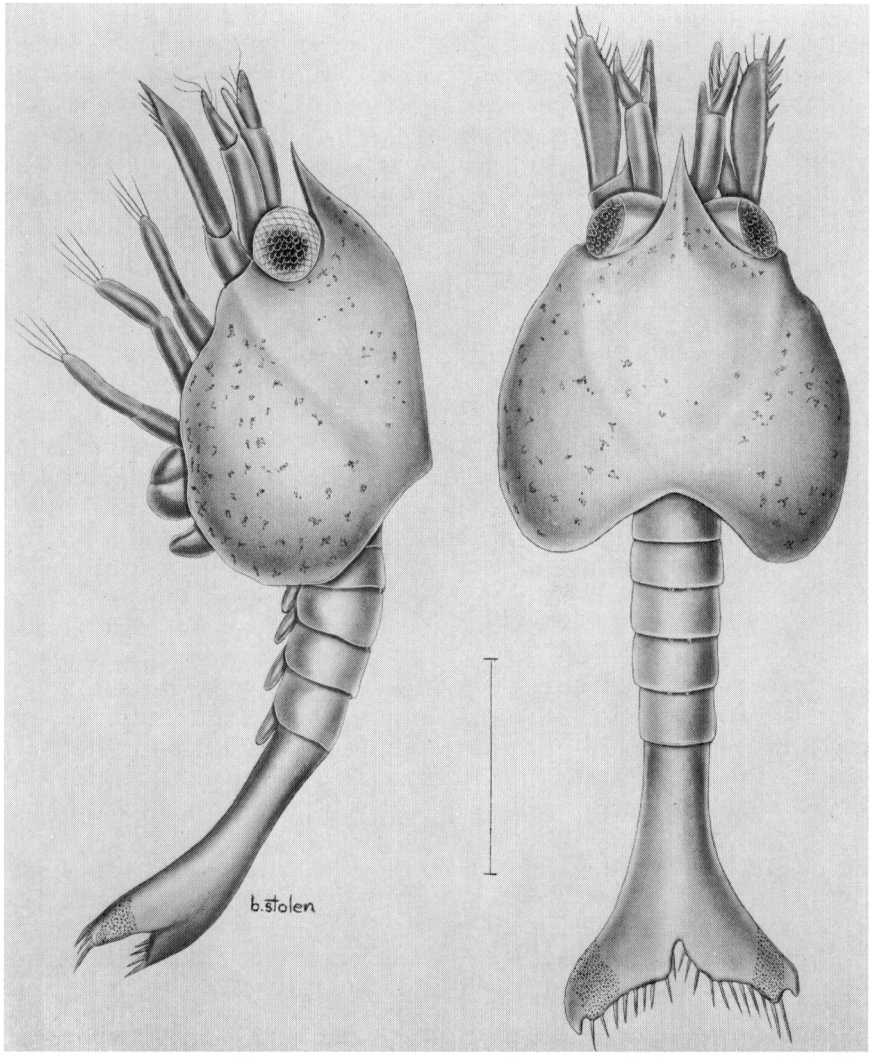

FIGURE 5. *Lithopagurus yucatanicus*, sp. n. Dorsal and lateral views of first zoeal stage. Telson shows some deformation in this specimen and carapace is slightly inflated. The eyes, the broad bands on the telson, and some of the chromatophores on the anterodorsal part of the carapace were orange; the remaining chromatophores were red.

little or no change in size of the specimen which molted through several stages.

DESCRIPTION: The rather stout appearance of the first zoea is exaggerated in Figure 5 because of swelling of the carapace. Nevertheless, it is a rather heavy larva with much yolk. The exceptionally great size relative to the adult is one of the most remarkable features of this species. The larva hatches in a very advanced state of development; the leg buds and pereiopod buds can be seen through the very delicate cuticles. Other features relating to abbreviated development include the setose exopodite of the third maxilliped, the lack of terminal setae on the endopodite of the antenna, and the presence of two rami on the antennule. Other features related to the rapid molting, short larval life, and lack of feeding include reduction of the mandible (it could hardly be distinguished in the first zoea) and endopodites of the maxillipeds (Fig. 6, top row).

In species with normal development the exopodites of the maxillipeds are used in swimming and the endopodites assist in feeding. In the first stage of this species, however, only the locomotory exopodites appeared to be functional but either they are not efficient or the larva was debilitated, as none of the specimens was able to get off the bottom of the container. The later stages did not show any better development of the maxillipeds, indicating that the zoeal stages do not feed.

Zoea II.—Unfortunately, little could be saved of the second-stage exuvia, but scarcely any differences between first and second zoea were noted. There seemed to be segmentation of the endopodites of the maxillipeds and of the antennal endopodite but no other changes of significance (Fig. 6, middle row). The freeing of the eyes from the carapace, which normally takes place in other species at the molt from Zoea I to Zoea II, could not be confirmed in this instance.

Zoea III.—The third zoea did show a number of very interesting changes from the preceding stages. As in most other hermit crabs, the third stage is characterized by the appearance of uropods. In the single specimen obtained, the uropods were very reduced and even the exopodites, normally setose, bore no setae. The form of the telson was little changed except that the posterior margin was a little more indented. The unusual telson armature of the first zoea was retained to this stage. The fusion of the fourth telson process with the margin of the telson appears for the first time in the third stage of other species but was already evident in the first zoea of this species (Fig. 7).

Although the maxillipeds show little change, the other appendages have been modified from the form in the first zoea. The antennule, always biramous, now shows signs of peduncular segmentation. The antennal flagellum is very clearly segmented, with the terminal segment bearing

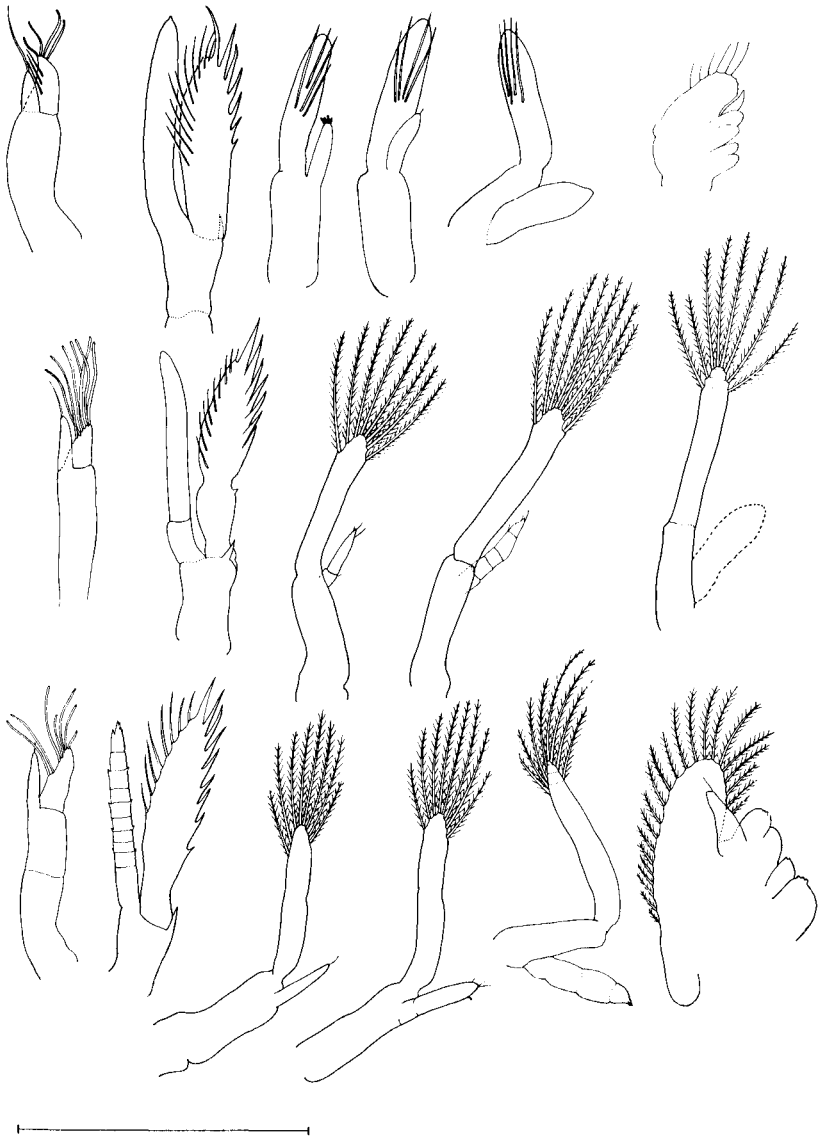

FIGURE 6. *Lithopagurus yucatanicus*, sp. n. Top row, left to right, antennule, antenna, first, second, third maxillipeds, maxilla of first zoea. Second row, same appendages of second zoea, with exception of maxilla. Third row, same appendages of third zoea. Scale represents 0.67 mm for maxillae, 1.0 mm for all other appendages.

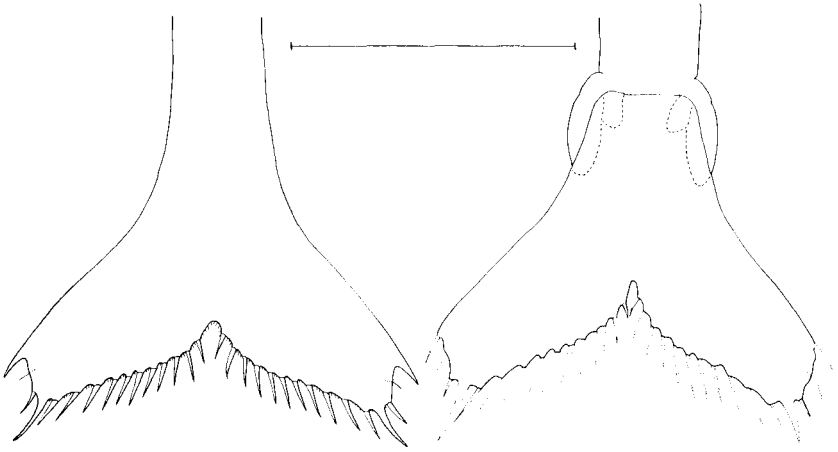

FIGURE 7. *Lithopagurus yucatanicus,* sp. n. Left, telson of first zoea; right, telson of third zoea.

short, spinelike structures and with very short spines representing setae on alternate flagellar segments. The maxilla shows clearly a well-developed scaphognathite bearing setae, but the medial lobes are still unarmed. Pereiopod buds now show segmentation and are so well developed that it is highly probable that the next molt would have produced a glaucothoë. These appendages, though in poor condition, have been illustrated as they show some similarity to corresponding appendages of the adult (Fig. 8).

SYSTEMATIC SIGNIFICANCE OF THE LARVA

Abbreviated development is known in some genera of hermit crabs such as *Cancellus* and *Paguristes* of the family Diogenidae. It has not been reported previously for any species of the Paguridae, although some genera and species are known to have rather large eggs and probably do hatch advanced larvae. Features in our species which are clearly related to the phenomenon of abbreviated development are of no phylogenetic importance. These include the presence of a single terminal process rather than plumose setae on the antennal endopodite, the reduction of mouthparts, and the probably reduced number of stages. The peculiar telson formation, the very high number of telson processes, and the presence of a fused fourth telson process prior to the appearance of the uropods also may be related to abbreviated larval history.

The telson of our larva bears some resemblance to that of *Parapagurus pilosimanus* Smith in advanced stages (see figures of the larvae attributed to *P. pilosimanus* by de Saint Laurent-Dechancé [1964] and by Williamson

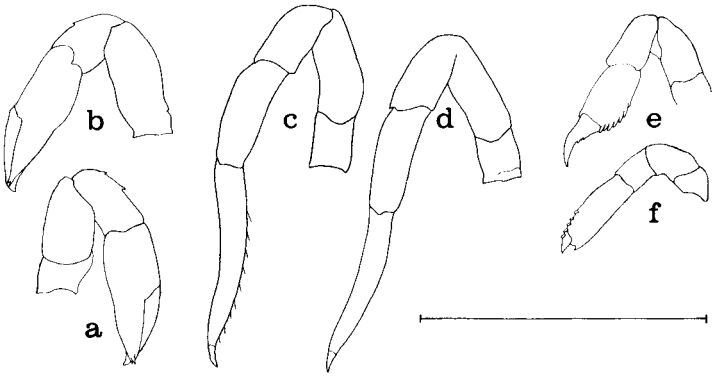

FIGURE 8. *Lithopagurus yucatanicus*, sp. n. Pereiopods dissected from buds of third zoea. a, lateral view of right cheliped; b, lateral view of left cheliped; c-f, second, third, fourth, and fifth pereiopods, respectively.

& von Levetzow [1967]), but the larvae as well as the adults are otherwise so distinct that this resemblance must be of no phylogenetic significance. In fact, the genus *Parapagurus* differs in many ways from other genera of hermit crabs; on the basis of morphology of the adults and larvae, that genus and several closely related to it probably will be separated from the rest of the Paguridae as a new family (de Saint Laurent-Dechancé, 1966: 258).

The only way in which our larva resembles the larvae of the Diogenidae while also differing from all described pagurid larvae is in the lack of posterior marginal carapace spines. It is possible that this feature too may be related to the abbreviation of the zoeal development.

The larva of our new genus differs from all previously described larvae of Paguridae (as well as from those of other families) in the nature of the antennal scale. Representatives of only a few genera of Paguridae have had larvae described previously (*Anapagurus,* several spp.; *Catapaguroides timidus*; *Orthopagurus schmitti*; *Pagurus*, many spp.; and *Spiropagurus elegans*), all of them very similar to each other in many characters. All these described pagurid larvae have a terminal spine on the antennal scale and lack armature on the lateral margin. Some diogenid larvae have a similar terminal spine, some lack it, but none has the lateral margin armed with stout spines as in our larva. It is not likely that this character is related to the abbreviation of development.

SYSTEMATIC POSITION OF THE GENUS

De Saint Laurent-Dechancé (1966) summarized the various characters of recognized value in classification of the Paguridae. At that time she suggested that the described genera of Paguridae *sensu stricto* can be divided

TABLE 1

COMPARISON OF SOME CHARACTERS OF *Tomopaguroides* AND *Lithopagurus*
(Data for *Tomopaguroides valdiviae* taken from Balss [1912] and de Saint Laurent [*in litt.*].)

	Tomopaguroides valdiviae	*Lithopagurus yucatanicus*
Unpaired pleopods in male	3	0
Unpaired pleopods in female	4	3
Abdomen	narrow	bulbous
Rostrum	shorter than front	in advance of front
Ocular scales	broad	narrow
Antennal scale	exceeding cornea by ¾ scale length	reaching only to proximal margin of cornea
Telson margin	with median notch, lobes spined	no median notch, armed with setae only
Carpus of minor cheliped, and of P_2 and P_3	without dorsal spines	with 2 or 3 dorsal spines
Size	CL 9 mm, major manus similar in length to CL	CL 3 mm, major manus longer than CL
Distribution	Western Indian Ocean (off E. Africa), 1079 m (Balss); Pacific, 564-1270 m (de Saint Laurent)	Western Atlantic, 143 (?) to 350 m

into three major groups based on number of gills, presence or absence of an accessory tooth on the ischium of the third maxilliped (lateral to the *crista dentata*), presence or absence of sexual tubes of the fifth coxae of males, and the complement of abdominal pleopods and gonopods. Genera in one of these groups, termed by that author the *Pylopaguropsis*-group, share the following: 13 pairs of gills, not 10 or 11 pairs; no sexual tubes in males, but gonopods usually present in one sex at least; and presence of an accessory tooth on the ischium of the third maxilliped. The group includes *Pylopaguropsis* Alcock, 1905, *Tomopaguroides* Balss, 1912, *Tomopaguropsis* Alcock, 1905, *Munidopagurus* A. Milne-Edwards & Bouvier, 1893, and *Xylopagurus* A. Milne-Edwards, 1880. All of these genera except *Tomopaguroides* have representatives in the western Atlantic Ocean. Larvae are not known for any of them.

On the basis of the characters listed above, our new genus apparently is allied to the *Pylopaguropsis*-group rather than to other described genera of Paguridae. A comparison of the genera in this group shows that they are very different from each other in general morphology. One of the characters uniting them (gonopods in one sex) has been consistently used

as a primary generic character for hermit crabs by all workers. No thorough evaluation of this and some other "generic" features has been published in recent years but a study of such characters and their usefulness in phylogeny is currently in progress (de Saint Laurent, *in litt.*). A detailed discussion of the systematic position of our new genus within the family must await additional knowledge.

New genera of pagurids remain to be described and, although some of them may prove to be more closely allied to our new genus, at present it is possible to say only that the closest known relative appears to be an Indo-West Pacific form, *Tomopaguroides valdiviae* (Balss, 1912), of the *Pylopaguropsis*-group. The two species, while sharing a number of gross features, differ in many ways. Some of the differences between them are listed in Table 1. Additional differences may be discovered when a detailed comparison with specimens of *T. valdiviae* can be made.

In the key which follows, *Tomopaguropsis problematica* males are placed twice, as there is apparently considerable variation in the size at which gonopods appear. The type, which has a shield length of 3.7 mm has only minute buds representing gonopods. Other males examined by me and having shield lengths of 3.8 mm, 4.3 mm, and 5.1 mm, show no evidence of gonopods, but one specimen (shield length, 4.1 mm), having one gonopore in the female position in addition to the normal male gonopores, does bear a pair of well-developed gonopods.

Characters given for males of *Munidopagurus macrocheles* and for females of *Tomopaguroides* have not been previously published and are based on observations by me and by Dr. de Saint Laurent, respectively.

A Key to the Genera and Western Atlantic Species of the "*Pylopaguropsis*-group" of the Paguridae

(The members of this group all have 13 pairs of gills and an accessory tooth on the ischium of the third maxilliped.)

Males

1. Male with one pair of gonopods 2
1. Male with two pairs of gonopods, or none 4

2. Male with no unpaired pleopods ..... *Lithopagurus yucatanicus,* sp. n.
2. Male with unpaired pleopods 3

3. Male with three unpaired pleopods ..... *Tomopaguroides* (Indo-Pacific)
3. Male with four unpaired pleopods ..... *Tomopaguropsis problematica* (A. Milne-Edwards & Bouvier, 1893)

4. Male with two pairs of gonopods, no unpaired pleopods ..... *Xylopagurus rectus* A. Milne-Edwards, 1880
4. Male without gonopods 5

5. Male without unpaired pleopods ..... *Munidopagurus macrocheles* A. Milne-Edwards, 1880
5. Male with unpaired pleopods 6
6. Male with three unpaired pleopods ..... *Pylopaguropsis atlantica* Wass, 1963
6. Male with four unpaired pleopods ..... *Tomopaguropsis problematica* (A. Milne-Edwards & Bouvier, 1893)

Females

1. Female with one pair of gonopods, even if rudimentary 2
1. Female without gonopods 3
2. Female with three unpaired pleopods ..... *Munidopagurus macrocheles*
2. Female with four unpaired pleopods 4
3. Female with three unpaired pleopods 5
3. Female with four unpaired pleopods ..... *Tomopaguropsis problematica*
4. Female with gonopods well developed ..... *Pylopaguropsis atlantica*
4. Female with gonopods rudimentary ..... *Tomopaguroides* (Indo-Pacific)
5. Dorsal surface of major manus obscured by short thick setae, no large spine or projection arising proximal to movable dactylus; calcified sixth abdominal plate convex; inhabits burrows in rock or rocklike sponge ..... *Lithopagurus yucatanicus*
5. Dorsal surface of major manus not obscured, a large projection on medial margin proximal to movable dactylus; calcified sixth abdominal plate concave; inhabits tubes usually of wood ..... *Xylopagurus rectus*

Sumario

Lithopagurus yucatanicus, Nuevo Genero y Especie de Cangrejo Hermitaño con una Larva Caracteristica

El John Elliott Pillsbury, barco de investigación de la Universidad de Miami, colectó frente a la Península de Yucatán, México, (146-350 m) tres ejemplares de un nuevo género y especie de cangrejo hermitaño, *Lithopagurus yucatanicus,* que vive en huecos de las rocas o en esponjas de aspecto rocoso.

El nuevo género, como otros cinco llamados por un investigador el "grupo-*Pylopaguropsis,*" tiene trece pares de agallas, un diente accesorio en el ischium del tercer maxilípedo y gonópodos en un sexo. Difiere de estos otros géneros en que el macho tiene un par de gonópodos pero no otros pleópodos, mientras que la hembra no tiene gonópodos, pero tiene tres pleópodos impares. La especie conocida más próxima a ésta parece ser *Tomopaguroides valdiviae* (Balss, 1912) del Indo-Pacífico occidental. Se da una tabla de diferencias de caracteres entre estas dos formas. Se

provee una clave, por sexo, para los géneros y especies del grupo-*Pylopaguropsis* del Atlántico occidental.

Los ejemplares se mantuvieron vivos en el laboratorio por lo menos durante cinco meses. Una de las hembras llevaba unos pocos huevos muy grandes, algunos de los cuales incubaron una larva que difiere en algunos caracteres de cualquiera previamente conocida de los otros géneros de cangrejo hermitaño. La larva tiene las piezas bucales reducidas y no se alimenta durante los estados de zoea, que sólo duran unos pocos días. Algunas de las peculiaridades de la larva están relacionadas con el acortamiento del período de desarrollo, pero la presencia de espinas laterales en la escama de la antena parece ser un carácter único y tiene valor taxonómico.

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