

NEW DECAPOD AND ISOPOD CRUSTACEANS FROM GONAVE BAY, HAITI¹

BY LEE BOONE

INTRODUCTION

(Figs. 7, 8, 9, 10)

Preliminary survey of the extensive collection of Crustacea, obtained in exploration of Gonave Bay, Haiti, conducted by the Tenth Expedition of the Department of Tropical Research of the New York Zoological Society, under the direction of Dr. William Beebe, has resulted in the classification of nearly a hundred species, chiefly Decapoda, including many rare West Indian species, in large series. Among those are a new species of spider crab, *Teleophrys beebei*, a new sponge-dwelling marine shrimp, *Corallocaris perlatus*, and a remarkably exquisite new marine Isopod, *Paracerceis edithae*, of which diagnoses with illustrations are herewith presented. Full report of the Crustacea, which involves approximately a five hundred percentum increase of the known Haitian fauna, will be issued later.

I am indebted to Dr. William Beebe for the privilege of preparing this paper and to his artist, Mrs. Edith Thane, for preparation of the illustration of the isopod, and to Mrs. Helen Ziska, for the drawings of the crab and shrimp.

¹ Contribution, New York Zoological Society, Department of Tropical Research, No. 319.

Order *DECAPODA*Suborder *BRACHYURA*Family *MAJIDAE*Genus *TELEOPHRYS* Stimpson*TELEOPHRYS BEEBEI*, sp. nov.....42Suborder *MACRURA*Family *PALAEMONIDAE*Genus *CORALLOCARIS* Stimpson*CORALLOCARIS PERLATUS*, sp. nov.....45Family *SYNALPHEIDAE*Genus *ALPHEUS* Fabricius*ALPHEUS PLATYCHEIRUS*, Boone.....49Order *ISOPODA*Family *SPHAEROMIDAE*Genus *PARACERCEIS* Hansen*PARACERCEIS EDITHAE*, sp. nov.....51*TELEOPHRYS BEEBEI* sp. nov.

(Fig. 7)

Type: Field No. 2749, an ovigerous female, was taken from Lamentin, Gonave Bay, Haiti, and is deposited in collections of the Department of Tropical Research of the New York Zoological Society.

Material Examined: Type ♀ and female paratype from corals a fathom deep, from Lamentin Reef, Haiti.

Distribution: Restricted to the type locality.

Name: This remarkable little species is named in honor of the leader of the expedition, Dr. William Beebe.

Diagnostic Characters: Carapace longer than broad; no marginal spines, dorsal surface broken into a series of lobes. Merus of ambulatories broadly cristate, suboval, margins unbroken, dorsal surface deeply pitted.

Color: (Recently preserved formalin specimen) Vivid carmine, maculated with large white areas, two on the gastric areas anteriorly branching narrowly forward to the orbital margin, separated by a median red area, posterior to which they are united by a white band across the mesogastric region, and continuing posteriorly as wide white areas on each side of the cardio-intestinal region and

diverging out to the posterolateral margin. A similar large white area occurs midway the high lateral wall of the carapace, and is repeated on the proximal parts of the meral joints of the first and second ambulatory legs, which lie below and adjacent to this white area of the sidewall of the carapace. The lateral and distal margins of the merus, the distal part of the propodus, and the proximal and distal parts of the dactyl, of the ambulatory legs are maculated with white.

Habits: This quaint little crab makes its home in the crevices of the shallow water corals. The sculpturation and color pattern of its carapace render it more like a fragment of coral than a crab and its remarkably developed toes are especially modified for living in this type of environment.

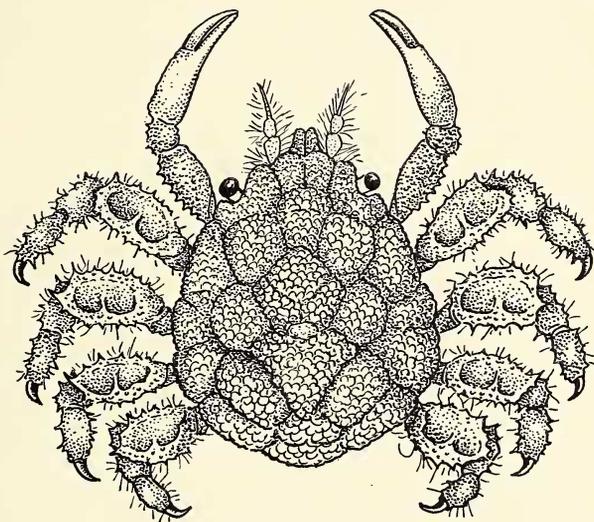


Fig. 7. *Telcophrys beebeyi* sp. nov. Type $\times 5$. Drawn by Helen Ziska.

Technical Description: Carapace broadly pyriform, longer than wide, 8 mm. long from tip of rostrum to posterior margin, 6.4 mm. maximum width, across the branchio-cardiac region; entire surface paved with rather coarse, elevated, rounded granules. Region of the carapace sharply defined; carapace broken into numerous swollen lobes. Rostral horns extending not quite as far forward as the second joint of the antennae, triangulate, with the lateral margins rendered denticulate by the large granules; interrostral sinus linear. The superior and outer orbital margins are entire; the superior orbital border is swollen forming a large rounded lobe which is circumscribed by a linear sulcus. A short median longitudinal sulcus extends back a short distance from the base of the rostrum, the area on either side of this sulcus being an elevated linear series of rounded, spinose granules. The mesogastric region is swollen, and is especially elevated on each side where the white areas are confluent with the median red area; the mesogastric

region is rounded; behind this the cardiac region forms a rounded subtriangular lobe with the apex directed posteriorly; and followed posteriorly by two smaller rounded lobes, side by side, which emphasize the intestinal region. The branchial region is divided into three lobes, two being along the lateral margin; the third being a longer lobe, along the posterolateral margin; separated from this lobe by a deep diagonal sulcus there is a fourth, elongate lobe on the inner branchial region and separated from the cardiac lobe by the deep sulcus which circumscribes the latter. The sidewalls of the carapace are deep on the posterior and median parts, gradually tapering anteriorly. It is covered by the same type of granules as the dorsal surface and bears an irregular depression chiefly in the large white spot. The female abdominal belt is sub-circular, seven-segmented; the lateral margins of the belt being heavily fringed with long white setae. In the ovigerous type specimen the outer distal branches are long, slender, heavily fringed with setae, and curved, one above the other, around the outer margin of the brood-pouch, increasing its depth, basket fashion.

The internal antennae are stocky and fold upon themselves longitudinally within the fossa which lies beneath the rostrum.

The external antennae have the proximal joint enlarged, granulose, and produced to a rather broad bluntish triangular tooth; the second joint arises from an excavation in the inner distal border of the first joint, and is somewhat dilated distally, extending a short distance beyond the tip of the rostral horns; the third joint is much smaller than the second, the flagellum is very slender, consisting of five or six small, linear joints which are heavily fringed with long setae.

The external maxillipeds are typical of the genus; the ischium is nearly twice as long as wide, with its proximal border diagonal; its lateral margins subparallel, the inner distal angle produced into a roundish lobe; the merus is approximately as high as its greatest width, which later exceeds the width of the ischium; the inner distal angle of the merus is excavate for the reception of the three-jointed palp.

The chelipeds (female) are slender and when folded, the carpal joint projects but a short distance beyond the rostrum. The basal joints are strong, the ischium is stocky, produced to a stout triangular point on the inner distal ventral-angle reinforcing the union with the merus; the merus is long, narrow, roughly trigonal with the dorsal surface rough with coarse granules; the carpus is short, convex and granular on the outer surface; the propodus is long and slender, about one and one-half times the length of the merus; the outer face of the propodus is granulose proximally, but smooth and gently rounded for the remainder of the length; the fingers are long, slender, comprising approximately two-fifths of the length of the propodus; the inner cutting edge of each finger is crenulated into seven or eight teeth; the distal end is rounded, spoon-shaped and finely crenulated.

The ambulatory legs present the most striking characteristic of the species; they are subequal, slightly decreasing in length from the first to the fourth pairs in the order named. The proximal joints are short and close-set; the merus of this species is the most remarkably cristate of any member of the genus. The central or main portion of the merus is raised and roughly granulose; the anterior lateral margin is produced into a wide, convex, marginal laminate process which

increases in width distally and bears on the dorsal surface along its line of union with the main part of the merus a series of two deep subcircular pits; the posterior lateral margin of the merus is even more widely produced, forming a flaring rounded plate which is especially produced at the distal border; this plate is deeply concave on its dorsal surface and bears two deep circular pits near its fusion with the central part of the merus; the carpus is large, with the dorsal surface rough and granulose and the lateral margins cristate; the propodus is no longer than the carpus but is much narrower, trigonal, with the two upper surfaces rough; the outer distal part of the propodus is produced into a rounded tapering process which projects outside the dactyl, reinforcing this joint; the dactyl is stout, curved, tapering to a sharp curved point and armed on the concave lateral margin with a series of six or seven serrulate teeth.

The lateral margins of the ambulatories and in a less degree their dorsal surfaces, are furnished with long plumose setae.

CORALLOCARIS PERLATUS SP. NOV.

(Fig. 8)

Type: Field No. 2728, an adult male and ovigerous female, also three ovigerous females and one male, Field No. 2716, Gonave Bay, Haiti, and are deposited in collections of the Department of Tropical Research of the New York Zoological Society.

Distribution: So far known only from the above cited stations in Gonave Bay, Haiti, as dwellers in sponges; the specimens taken appear to live a pair each in an isolated cavity of the sponge.

Name: The name refers to the beaded great chelipeds.

Technical Description: Animal slightly smaller than the average-size snapping shrimp, which it superficially resembles. Color in recently preserved formalined specimens opaque creamy. Great chela of the male exceeding in size the carapace; in the female nearly as long as carapace. Rostrum fully one-half as long as the remainder of the carapace, the tip of the apical spine projecting slightly beyond the distal margin of the third peduncular article of the antennae. The rostrum is laterally compressed, slightly arched proximally between the orbits and with the distal portion slightly curved downward, the apical spine directed straight forward. The superior margin is armed with eight to ten spines, including the apical spines. These spines are smaller proximally, increasing in length distally, the first spine being quite rudimentary, the fourth to eighth spines as a rule long, subequal, while the ninth and tenth spines are subequal, but a trifle shorter than those immediately preceding. All the rostral spines are acute, directed obliquely forward, the distal group forming a fan-like crest; the longer spines are of greater length than the width of the adjacent rostrum, in this respect differing decidedly from both *C. atlantica* Rathbun and *C. wilsoni* Hay and Shore. The rostrum arises from a thickened base in the extreme anterior portion of the carapace. The carapace is glabrous, rather soft, moderately compressed, armed with a strong, acute postorbital spine, directed forward and outward and slightly exceeding the

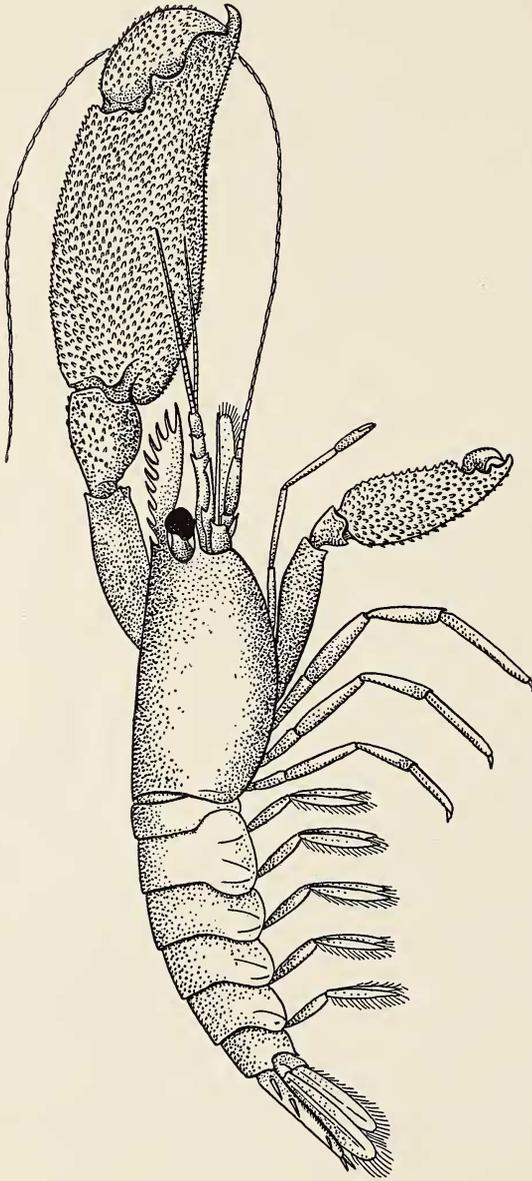


Fig. 8. *Corallocaris perlatus* Boone. Male, type $\times 3$. Drawn by Helen Ziska.

length of the eyestalk. The antennulae have the basal article narrow, slightly concave on the upper surface, a little longer than the eye and with a spine at the outer distal angle; the second and third articles are short, cylindrical, subequal, reaching almost but not quite as far distally as do the rostrum and scaphocerite; the flagellum is biramose, the outer whip being shorter and much the thicker, itself bifurcating after the ninth thick article, the inner branches being the shorter and consisting of only seven small articles which have a horny brush of long fine setae; these setae are more sparsely spaced along the under side of the peduncle; the longer branch consists of about fourteen articles and is devoid of setae. The longer, slenderer whip which arises from the third peduncular article is about one and two-fifths times the length of the thicker inner branch, and does not bifurcate distally.

The eyes are large, the stalk stocky extending about as far as the third rostral spine; the cornea two-thirds as long as the stalk, spherical, terminate, black.

The antennae have the proximal joints short, the carpuce slender, cylindrical, reaching as far forward as does the third peduncular article of the antennae; the flagellum slender, devoid of setae, consisting of approximately forty annulations and being about one and two-thirds times as long as the longest whip of the antennulae.

The abdomen is moderately compressed in the male, broader in the female, if extended not quite twice as long as the carapace, exclusive of rostrum. The epimeral plates of the first, second, and third plates are produced and broadly rounded, forming a capacious brood pouch in the female, the epimera of the fourth and fifth segments are less prominent but have the postlateral angle produced and rounded. The telson is almost twice as long as the sixth segment and is decidedly tapered, with the proximal width nearly twice that of the distal width. The terminal margin is evenly rounded and armed with four articulated spines, a slender submedian pair and an equally long but much thicker outer pair, one each at the outer lateral angle. In addition to these, there are three pairs of long, acute articulated spines on the dorsal surface, one pair near the base of the telson the second pair roughly one-third of the length from the base, and the third pair, approximately three-fourths of the length from the base. The caudal fan has a small peduncle, a broadly oval, ciliated inner blade which extends the length of the telson a distance approximately equal to the length of the distal articulated spines of the telsonic margin. The outer blade is wider distally but a trifle shorter than the inner blade and with the distal margin more bluntly rounded, and a stocky acute subdistal spine at the outer lateral angle.

The first legs are extremely slender, almost linear, and very long, with the ischial and meral joints greatly elongated, the carpus two-thirds as long as the merus, the propodus about three-fifths as long as the carpus, of no greater diameter, weakly chelate, the fingers subequal, nearly straight, almost one-third of the total propodal length.

The second legs are conspicuously unequal in both sexes. The left one is normally the larger; in the male type it is approximately of as great size as the body appears with the telson bent under the body. In the female the inequality

is conspicuous but the great chela is only two-thirds the size of that of the associated male, while the body of the female is much stouter than that of the male. The male great cheliped has the merus compressed cylindrical when extended reaching beyond the body of the animal to about midway the rostrum, the carpus short, convex, narrowed proximally, dilated distally, the under surface produced to a narrowed ridge which terminates distally in a sharp tooth, the lower distal face excavate fitting upon the rounded end of the huge propodus. The propodus is very large, convex proximally, thick and high, cylindrical, more laterally compressed distally near the base of the finger but still quite thick, the propodal finger bent inward with the tip slightly upward curved and projecting beyond the tip of the hinged finger, the propodal finger has visible from the inner and outer faces a small triangulate subbasal tooth immediately beyond which it is concavely excavate for the reception of the huge blunt tooth of the hinged finger. The hinged finger is high, laminate with its curved triangulate tip closing inside the propodal finger, a short distance from the base of the latter. There is one large truncated tooth. The entire surfaces of the propodus, the propodal finger and the proximal part of the hinged finger are covered with numerous, short, conical, sharp spinose granules. These are visible to the unaided eye and form a conspicuous field-character. On the under side of the proximal part of the propodus these spines are arranged in regular transverse rows, giving them a brocaded or slightly corrugated appearance. The propodus and small cheliped of the male is by actual measurement two-fifths as long as that of the large one, but this measurement gives no true idea of actual disparity between the two, because the palm of the great chela is enormously dilated while that of the small cheliped is much less so, having a more laterally compressed aspect especially on the distal half of the palm and the fingers, which are slightly incurved; the fingers are short, subequal; almost the entire cutting edge of the upper finger forming a convex lobe which is separated from the acute finger tip and fits into the concavity of the lower finger, the tip of the latter closing between this convex lobe and the apex of the upper finger. The entire surface of the small cheliped is covered with spiny granules, as in the larger cheliped.

The third, fourth and fifth legs are similar in structure, successively decreasing in size and length in the order named. Each has the merus elongated and rather wide; the carpus only half so long and narrower, the propodus three-quarters as long as the merus, laterally compressed, tapering a little distally; the dactyl extremely short, rudimentary, curved, acute, its length scarcely greater than the width of the adjacent propodus.

The female type is carrying about 300-600 round, yellow eggs.

Remarks: The different rostral dentition of this species at once separates it from the other West Indian species, *C. atlantica* Rathbun 1901, which has only four rostral teeth in addition to the apical teeth. This was described from two small specimens, taken at "Fish Hawk" station 6079, off St. Thomas in 20-23 fms.

It is likewise distinguished from *C. wilsoni* Hay and Shore 1918, by the greater length of the rostrum, with a lesser number of teeth, which are differently arranged forming a fan-like crest in *C. perlatus*; the second chelae of *C. perlatus* are beaded with conical spines all over, while those of *C. wilsoni* are glabrous.

ALPHEUS PLATYCHEIRUS Boone

(Figs. 9 and 9a)

Type: The type was taken in 12 fathoms at Siguanea Bay, Isle of Pines by the Pawnee and is deposited in the collections of the Peabody Museum, Yale University.

Material Examined: A male and a female, from a loggerhead sponge, Port-au-Prince Bay, No. 2767, Haiti. One mutilated specimen from a fish stomach, captured in the same locality. The type was unfortunately badly mutilated in the dredge, hence the capture of three specimens, including both sexes, by Dr. Beebe, is a very welcome and important find. This species, with its exceedingly flat claw is one of the most peculiar of the sponge-dwelling shrimp.

Technical description: Animal compact, body subcylindrical, great cheliped extremely flat. Rostral tooth acute, spine-like, projecting beyond the ocular lobe and continuous posteriorly as a distinct carina for two-fifths of the length of the carapace and terminating posteriorly in a median tooth. Ocular lobes prominent, rounded anteriorly and elevated as hemiovoids dorsally, pigment strong, blackish. Carapace smooth, laterally compressed, 9 mm. long or about three-fourths the length of the great cheliped. Abdomen compressed, tapering, the second, third, fourth and sixth segments subequal, the first and fifth segments each slightly shorter than the others. The epimera are but little produced, the pleopoda long and heavily fringed. The first epimera are narrow and overlapped by the second which are moderately rounded, angulated at the posterolateral angle. The third, fourth and fifth segments are similarly produced posteriorly. The telson is one and two-fifths times as long as the sixth segment, narrow, the distal margin rounded and the lateral margin sinuate with a distinct curve about midway its length. There is a median longitudinal depression on the dorsal surface of the carapace; also two pairs of submedian articulated spines. The inner blade of the uropoda is oval, three-fifths as wide as the outer with a conspicuous median longitudinal carina from which there branches midway and almost at right angles, a short carina that reaches to the inner lateral margin. The wider outer blade has a transverse articulation separating the distal fourth of the blade from the proximal part which bears a definite longitudinal carina the greater part of its length. The transverse segmentation terminates in a distinct notch on the outer lateral margin.

The great cheliped has the propodus one-third longer than the carapace, the merus is strongly compressed laterally, a series of spinules along the inferior inner lateral margin; the carpus is short, cup-like, convex on the upper surface, the propodus is one-third longer than the carapace and extremely flat. The anterior lateral face is one-third as high in the median region as its total length; the dorsal and ventral margins are convergent proximally; the propodal finger is a continuation of this flat surface of the palm, but is very lightly depressed in the median area; the finger is long, tapering at the acuminate, upcurved point; on the proximal half of the cutting edge there is a large, suboval tooth which is deeply concave in the center; the distal third of the inner lateral margin of the tooth is

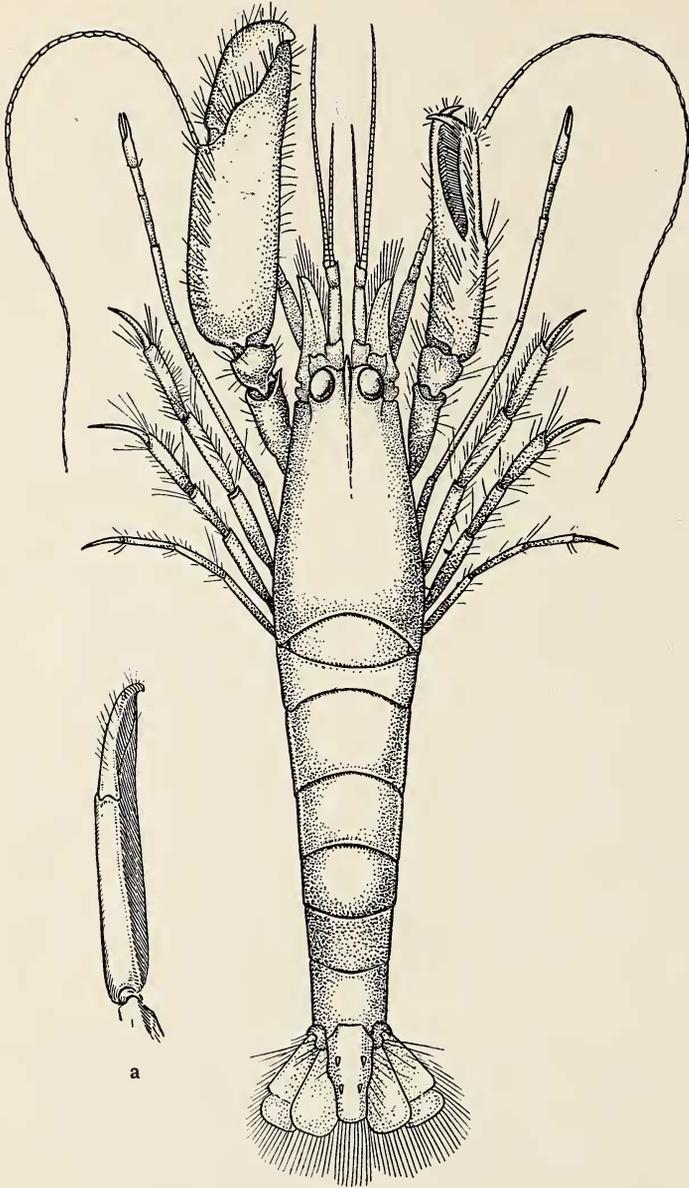


Fig. 9. *Alpheus platycheirus* Boone. $\times 3$. Fig. 9a. Dorsolateral view of palm of great cheliped of same. Drawn by Helen Ziska.

lower than the remaining margin; the distal half of the cutting edge is a narrow grooved edge, which like the tip, is of a different color in the specimen from the remainder of the dactyl; the upper finger is similar to the lower one in length and in being laterally compressed, but differs in that it does not narrow distally; the cutting edge bears a sub-basal elliptical tooth, flat on the upper surface and fitting into the concavity of the opposing tooth of the propodal finger; the tooth of the upper finger is continuous distally with the stout, carinate, cutting edge of the distal half of the finger, which terminates in a slightly curved, rounded tip. The entire propodus, but especially on the dorsal and ventral edges and the distal half of the fingers, is set with unusually long, abundant setae. The small cheliped resembles the larger in general structure and in being strongly compressed laterally. It is shorter by about one-fourth of the length of the dactyl of the larger cheliped and it is only one-half as high as the large chela; the finger of the small chela is one and three-fifths times as long as the related palm, very slender, the cutting face flat, the tip tapering and curved, crossing upon the tip of the similar but slightly slenderer upper finger. There is a decided gape between the fingers which is equal in its median width to that of one finger, and is filled with a dense brush of long thick setae.

The second legs are very slender, the ischium greatly elongated, slightly exceeding the merus in length; the carpus is composed of five joints, of which the second is the longest, the first joint being four-fifths as long as the second; the third, fourth and fifth articles are subequal, each being one-half as long as the first article; the palm of the propodus is two-thirds as long as the distal carpal article and no thicker; the fingers are as long as the last carpal joint and very slender.

The third, fourth and fifth pairs of legs are moderately robust, of the proportions shown in the figure; the dactyli being notably curved, hook-like.

Synonymy: *Alpheus platycheirus* Boone, Bull. Bingham Oceanog. Coll. vol. 1, art. 2, p. 131, fig. 29, and fig. 30, 1927.

PARACERCEIS EDITHAE sp. nov.

(Fig. 10)

Type: The type and nine paratypes, including both sexes were collected at Gonave Bay, Haiti, and are deposited in collections of the Department of Tropical Research of the New York Zoological Society, Field No. 27240.

Distribution: Gonave Bay, Haiti.

Name: This exquisite isopod has been named for the artist, Mrs. Edith Thane.

Technical Description: Body about 5 mm. long in median line; decidedly convex from side to side. Head approximately three-fifths as long as its median width, with the frontal border rounded, produced to a median point and the posterolateral angles produced and entirely occupied by the large oval convex, composite eyes. The inner antennae are nearly as long as the outer pair, extending to nearly midway the epimeral margin of the second thoracic segment, while the

outer antennae extend to the posterior angle of the epimeral margin of the same segment.

The upper antennae are about five-sixths as long as the lower and consist of a long thick basal article, followed by a shorter thick article and a long slender

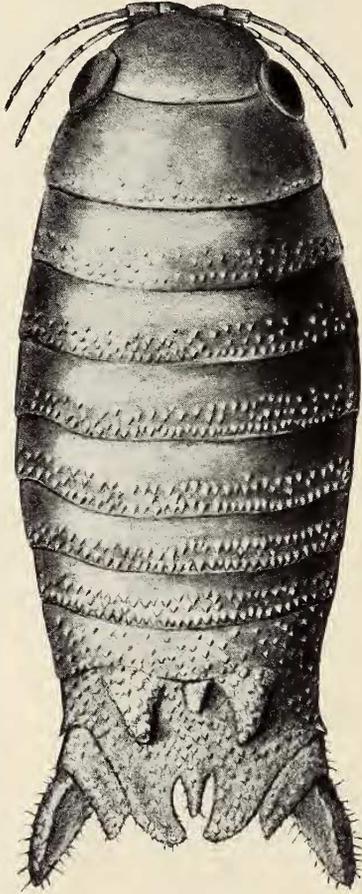


Fig. 10. *Paracerceis edithae* sp. nov. Type greatly enlarged. Drawn by Edith Thane.

third article, and flagellum composed of six small articles the distal two or three of which are set with tufts of setae on the distal upper margin.

The antennae have the three peduncular articles slender, elongate, the first subequal, the third a little longer, and a flagellum composed of ten fine tapering articles, the distal five or six of which are set with setae on their respective distal margins.

The first thoracic segment is a trifle longer than any of the others which are subequal. The anterolateral angles of the first segment are produced forward in acute processes which extend beneath the eyes to almost the anterior margin of the latter, the postlateral angles of this segment are similarly produced into acute processes which project backward to midway the epimeral margin of the second segment. The epimera of the second to the seventh segments inclusive are narrowed, curved, posteriorly directed with the angles rounded; the epimera of the fifth and sixth segments are more broadly rounded, that of the sixth segment being somewhat flaring and angulated, the epimera of the seventh segment is less protruding than that of the sixth and is widely rounded.

The abdomen consists of two segments; the proximal one is only two-thirds as long in the median line as the last thoracic segment but distinctly wider, the lateral region projects decidedly beyond that of the last thoracic segment and is produced posteriorly and widely, shallowly rounded. The distal segment has the anterior part moderately convex and produced on each side in the median lateral region into a very prominent large conical lobe; between these two lobes there is a smaller but well-developed conical subacute median tubercle; behind this tubercled area the distal part of the segment is produced into three processes, i.e., a median tooth which is slender, triangular, tapering, with the upper surface and base slightly convex, and the tip imperceptibly upcurved, on either side of this median tooth there is a subcrescentic sinus, narrowed inwardly and widened distally, and separating the median tooth from the larger paired, submedian processes. Each of these submedian processes has the inner lateral margin concave, the outer lateral margin convex and denticulate, while the distal margin is notched by a wide V. The fixed immovable branch of the uropoda is small with the distal margin rounded and extends less than half the length of the terminal abdominal segment; the movable outer branch is long, tapering, acuminate, flaring outward a little and strongly upcurved. There is a distinct row of microscopic granules across the posterior margin of the second, third and fourth thoracic segments. On the posterior margins the fifth segment bears two transverse rows of tubercles, one on the posterior margin and one just anterior to the posterior margin; the sixth segment bears two transverse rows of granules similar to those on the fifth segment, except that the granules are much stronger; the seventh thoracic segment also has two similar rows of granules, which are much stronger than those of the sixth segment; the posterior margin of the proximal abdominal segment is also very granulose; the distal abdominal segment has the paired conical tubercles very granulose; the surrounding region more sparsely and finely granulose; the distal margin of the telson and uropoda are denticulated by coarse granulations. Numerous fine setae are present on the dorsal surface of the carapace, these are interspersed among the granules and appear to be more abundant on the posterior margins of the telson and uropoda.