Material examined of Mithrax acuticornis

Locality	Bearings		Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	Latitude N.	Longitude W.									
Florida:	° ′ ″	° ′ ″			°F						
Miami			30					J. B. Henderson	1♂ 1♀	46965	
Gulf Stream off Cape Florida.	2½ miles SSE. of Fowey Rocks Light.		45	rky	70	Mar. 25, 1903	7511	*Fish Hawk*	1 y. 1 ♂	47084 46964	Paper-shell.
Western Dry Rocks, Key West.			25					J. B. Henderson	2♂ 1♀	50390	
Straits of Florida	24 43 00	83 25 00	37				11	*Blake*	3♂ 2♀	3035, M. C. Z.	
North of Dry Tortugas	25 04 30	82 59 15	26	fne. wh. S. brk. Sh.	°C	Mar. 19, 1885	2414	*Albatross*	1♀	15813	
Off Cape Romano	25 50 15	82 41 45	21	sdy	20	Apr. 2, 1901	7124	*Fish Hawk*	1♂	25591	
Do	26 00 00	82 57 30	24	fne. S. bk. Sp. brk. Sh.	°F	Mar. 19, 1885	2413	*Albatross*	2♀	15812	
Off Oyster Bay	26 19 00	83 11 00	27	S. Algae	68	Mar. 21, 1889	5108	*Grampus*	1 y. ♂	15206	
Off Pine Island	26 33 00	83 10 00	28	sdy	66	Apr. 2, 1901	7123	*Fish Hawk*	1♂ 1♀ 1 y.	25592	
Do	26 33 30	83 15 30	27	fne.wh.S.bk. Sp.		Mar. 18, 1885	2411	*Albatross*	1♂	15817	
Off Caseys Pass	27 04 00	83 21 15	26	crs.gy.S.brk. Sh.		do	2409	do	1♀	15819	
Off St. Martin's Reef	28 46 00	84 49 00	26	crs. S. Co		Mar. 15, 1885	2406	do	1♂	15811	
West coast of Florida	26 16 00		20			Apr. 24, 1872		W. Stimpson, *Bache.*	1 small ♂, shedding.	1934, M. C. Z.	Cotype of *Nemausa rostrata.*
Do			19					do	1 young ♀	1935, M. C. Z.	Do.
Yucatan Channel:											
North of Cape Catoche	22 18 00	87 04 00	24	wh. R. Co		Jan. 30, 1885	2365	*Albatross*	13	15818	
Do	22 08 30	86 53 30	25	Co. S		do	2362	do	1 y.	16307	
Do	22 07 30	87 06 00	21	wh. R. Co		do	2363	do	2♂ 1♀	15814	
Off Mujeres Island			12	crs. Co. S				do	1 very young ♂	1936, M. C. Z.	Do.
Porto Rico: Mayaguez Harbor.	Red Buoy, entrance harbor, NE. ½ E., ½ mile.		25–30	S. M. Sh		Jan. 20, 1899	6062	*Fish Hawk*	1 y. ♀	24183	Paper-shell.
Flannegan Passage			27	S. brk. Sh	77.75		142	*Blake*	1♂	3950, M. C. Z.	
Brazil: Off Bahia	*Lat. S.* 11 49 00	37 20 00	40			Jan. 18, 1872	11	*Hassler*	1♂ 3♀ (1 ovig.)	1467, M. C. Z.	

Comparison of Mithrax acuticornis with spinosissimus and cornutus

spinosissimus, young	*acuticornis*	*cornutus*, young
Two well-developed spines on lower margin of orbit between outer spine and antennal segment.	One spine and a shallow lobe, sometimes spine-tipped, on lower margin of orbit between outer spine and antennal segment.	Two well-developed spines on lower margin of orbit between outer spine and antennal segment.
No spine on basal antennal segment at articulation of next segment.	A small, sharp spine on basal antennal segment at articulation of next segment.	A small, sharp spine on basal antennal segment at articulation of next segment.
Carapace without lateral angle; the antero-lateral and postero-lateral margins curve gradually into each other.	Carapace with a lateral angle formed by the meeting of the antero-lateral and postero-lateral margins, and armed with one of the longest marginal spines.	Carapace with a lateral angle formed by the meeting of the antero-lateral and postero-lateral margins and armed with one of the longest marginal spines.
The fifth lateral spine, counting the hepatic as the first, is in line with the gastro-cardiac suture.	The fourth lateral spine is a little behind the line of the gastro-cardiac suture.	The fourth lateral spine is a little behind the line of the gastro-cardiac suture.

MITHRAX (MITHRAX) SPINIPES (Bell) [51]

Plate 136, figs. 3 and 4; plate 262, fig. 5

Pisa spinipes Bell, Proc. Zool. Soc. London, vol. 3, 1835 (1836), p. 171 (type-localities, Galapagos, 16 fathoms (male); St. Elena, 6 fathoms (female); types not extant); Trans. Zool. Soc. London, vol. 2, 1836, p. 50, pl. 9, figs. 6, 6*s*, 6*t*, 6*u*.

Nemausa spinipes A. Milne Edwards, Crust. Rég. Mex., 1875, p. 82.

Mithrax (*Nemausa*) *spinipes* Miers, *Challenger* Rept., Zool., vol. 17, 1886, p. 85.

Diagnosis.—Small. Horns long. Hepatic and first branchial spine single. Two small spinules side by side on anterior mesogastric region.

Description.—Carapace similar to that of *M. acuticornis*, having a lateral angle at which is situated a prominent spine a little below the level of the other marginal spines; as in that species, there are 5 lateral spines besides the orbital, the last and smallest being postlateral; the hepatic and the first branchial spine are single, not double as in *acuticornis*. On the anterior part of the mesogastric region and a little in front of the line of 4 protogastric spines, there are two small spinules side by side instead of a single one, as in *acuticornis*. The spines of the rostrum, orbits, and basal antennal segment correspond to those of *acuticornis*. The small and immature male examined shows several spines on the dorsal surface of the wrist but none on the inner margin and none on the upper edge of the palm. Legs much as in *acuticornis*.

Measurements.—Male (16064), entire length of carapace 13, length from base of rostral horns 11, width without spines 8.2, with spines 10.3 mm.

Range.—From Gulf of California to Galapagos Islands and St. Elena, Ecuador. Depth, 6 to 33 fathoms.

Material examined.—Gulf of California; lat. 24° 55′ 15″ N.; long. 110° 39′ 00″ W.; 33 fathoms; fne. gy. S. brk. Sh.; temp. 64.5°; station 3001, Str. *Albatross;* 1 male immature (16064).

[51] If *Cancer spinipes* Herbst (Naturg. Krabben u. Krebse., vol. I, 1790, p. 239, pl. 17, fig. 94) be a *Mithrax*, then Bell's species needs a new specific name.

MITHRAX (MITHRAX) HOLDERI Stimpson

Plate 138, figs. 1 and 2; pl. 257, fig. 2

Mithrax subspinosus KROYER, MS. labels in Copenhagen Mus.

Mithrax holderi STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 117 (type-locality, Tortugas, 7 fathoms; type not extant).—RATHBUN, Bull. Lab. Nat. Hist. State Univ. Iowa, vol. 4, 1898, p. 259, pl. 3, fig. 2; Bull. U. S. Fish Comm., vol. 20, for 1900, part 2 (1901), p. 69.

Diagnosis.—Elongate, ovate-oblong. Carapace without dense pubescence, but uneven with many areolae and tubercles. A well-marked postero-lateral spine.

Description.—Carapace suboblong, length definitely greater than width, lateral angles far back. Carapace covered in the main with small areolae, each of which is surmounted by from one to several pointed granules or tubercles; the largest of these tubercles are four which form an arch above the posterior margin and one above the postero-lateral branchial spine. The surface has much the appearance of a *Microphrys*. There are only two large antero-lateral marginal spines—one on the swollen hepatic region, and the other at the lateral angle; in front of the latter, a small spine; one of intermediate size on the postero-lateral margin; all are hooked forward at the tip. Rostral horns short, triangular, tips turned inward. The basal segment of antenna bears three spines, the one at the antero-lateral angle longer than the rostral horns and reaching nearly as far forward, a shorter one on orbital margin and a small but sharp one at the base of the next segment. Movable portion of antennae bordered laterally by long hairs. The margin of the orbit has, besides the postorbital and the long preorbital spine, two small ones above and one below.

Chelipeds of moderate size. The merus has an irregular row of spines on upper margin, a few small spines either side, and two tubercles on the lower, outer margin. Carpus sparingly tuberculated; manus smooth. Legs long-hairy, stout, flattened above, the upper surface of merus and carpus bordered by spines, propodus unarmed.

Measurements.—Female (25567), length of carapace, horns included 27; length, horns excluded, 25.3; width of same, spines included, 26.5; width, spines excluded, 23.4 mm.

Variation.—The young are wider anteriorly, and the spines sharper.

Range.—Florida Keys; Greater Antilles; Virgin Islands. Low water to 21 fathoms.

Material examined.—

Ragged Keys, Florida; 1901; J. E. Benedict; 1 mature female (25567).

Cabañas, Cuba; June 8–9, 1914; Henderson and Bartsch, collectors; station 16, *Tomas Barrera* Exped.; 1 young female (48746).

Off Havana, Cuba; May 26, 1893; State Univ. Iowa Exped.; 1 female (Mus. S. U. I.).

Cabo Cruz, Cuba; 2 fathoms; Henderson and Bartsch; 2 young (50532).

Jamaica; 3 to 6 fathoms; 1 large male (Kiel Mus.). From Marine Biol. Lab. Woods Hole; 1 young female (47354).

Ensenada Honda, Culebra Island; February 9, 1899; *Fish Hawk;* 1 very young (24184).

Off Vieques, Porto Rico; Culebritas Lighthouse, N. ¼ E., 7¼ miles; 21 fathoms; Co.; February 8, 1899; station 6089, Str. *Fish Hawk;* 1 young (24207).

St. John; 1 male, 1 female (Copenhagen Mus.).

St. Croix; 1 female (Copenhagen Mus.).

West Indies; received from Copenhagen Mus.; 1 immature female (19697).

Other records.—Tortugas, Florida; low-water mark and 7 fathoms (Stimpson).

MITHRAX (MITHRAX) BAHAMENSIS Rathbun

Plate 137, figs. 1 and 2; plate 259, fig. 1

Mithrax bahamensis RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 267 pl. 38, fig. 1 (type-locality, Andros Island, Bahamas; holotype male, Cat. No. 42513, U.S.N.M.).

Diagnosis.—Elongate, ovate-oblong. Tubercles hidden by a dense pubescence. A small postero-lateral tubercle.

Description.—The carapace in its elongate, oblong-ovate shape resembles that of *holderi.* It is covered with a close, tough pubescence; there is a tuft of hair near the inner angle of the branchial region; another at the hinder end of each protogastric lobe; and a line of hair extending from the rostrum back upon the gastric region. Tubercles of carapace few and not prominent; one epigastric (paired), one protogastric (paired), 5 or 6 dorsal branchial (paired), 4 in a curve concave to the posterior margin. Rostral horns triangular, tips incurved, sharp. Preocular spine stout, acute; postocular spine curved, blunt; two intervening teeth, of which the inner one is minute. Four lateral conical protuberances, the posterior one most prominent, ending in a sharp, hooked spine; hepatic protuberance with an acute tip; the two intermediate protuberances subacute and less prominent.

Three spines on basal article of antenna, the middle one large, curved inward and nearly as advanced as front. Remainder of antenna with lateral fringes of long hair.

Chelipeds a little longer than first pair of legs, pubescent; a row of tubercles on upper margin of merus; 1 or 2 tubercles near proximal end of carpus; manus smooth.

Legs flattened above and fringed on either side with long hair; merus armed with two rows of small spines and tubercles, carpus with two tubercles arranged transversely at the middle, and propodus with one tubercle at the middle.

Color.—In alcohol, reddish brown; chelipeds lighter; fingers pinkish red for their proximal half, tips white.

Measurements.—Male, paratype, length of carapace to tips of horns 18.8, on median line 18, greatest width 16.5, width at base of lateral spines 15.4, width at postocular teeth 11.2 mm.

Material examined.—Andros Island, Bahamas; in sponges; 1888; Frederick Stearns, collector; 5 males (1 is holotype), 1 young female (42513). No other specimens are known.

MITHRAX (MITHRAX) PILOSUS Rathbun

Plate 138, fig. 3; plate 258

Cancer aculeatus HERBST, Naturg. Krabben u. Krebse, vol. 1, 1790, p. 248, pl. 18, fig. B, pl. 19, fig. 104 (type-locality, America; type in Berlin Mus.). Not *C. aculeatus* O. Fabricius, 1780.

Mithrax aculeatus MILNE EDWARDS, Mag. Zool., vol. 2, 1832, class 7, description. Not Rathbun, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 264.—GUNDLACH and TORRALBAS, An. Acad. Habana, vol. 36, 1899 (1900), p. 328; reprint, 1917, p. 16 (not *Cangrejo Dentòn* Parra, 1787, nor *M. verrucosus* Milne Edwards, 1834).

Mithrax pilosus RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 262, pl. 39 (type-locality, Abaco, Bahamas; male, holotype, Cat. No. 16299, U.S.N.M.).

Diagnosis.—Three spines on basal segment of antenna. Three or four spines on propodites of ambulatory legs. Spines on proximal half of upper surface of palm.

Description.—Carapace ovate-orbicular; width without spines greater than length in the old, less than length in the young. The greatest width of the carapace is about midway of its length, measured from rostral sinus. Surface covered with flattened tubercles which are crowded together; from some of these which are larger arise short spines or spiniform protuberances; the longest are 4 in a transverse row on the gastric region and 6 or 8 on each branchial region. Of the marginal spines there are 4 strong antero-lateral, each of which has one or more secondary spines at base; 3 small postero-lateral spines followed by tubercles at the posterior angle. Small specimens have the dorsal surface of carapace, chelipeds and legs, except the greater part of the chelae, covered with a dense tubular pubescence; this disappears with age. Rostral horns small, outer margins nearly parallel, tips hooked inward. Of about the same size and shape are the antero-external spines of the basal antennal segments which are uncommonly divergent. The segment is armed with 2 other spines, smaller, straight, and acute, one on the orbital margin, the other situated on a lower level at the base of the following segment. The margin of the orbit bears 3 spines above, one broad and hooked at outer angle and one below besides those belonging to the antennal segment.

Chelipeds and legs armed with stout spines above; arm with about 5 spines on upper margin and in the distal half with additional spines on either side of this row; 14 or 15 spines on wrist; a few small spines on proximal half of upper surface of palm, the spines tending to form in two rows. Dorsal spines of merus joints of legs arranged in 2 rows distally divergent, a few small ventral spines; about 6 of the spines of the carpus are of large size; about 3 or 4 small spines on proximal half of propodus.

Color.—Light reddish gray with circular spots of an intense red, on carapace, claws and legs (Gundlach).

Measurements.—Male in Copenhagen Museum, length of carapace, horns included, 113.2; width of same, spines excluded, 116; spines included, 124; length of propodus of cheliped 123.3; height of same, 40 mm. Male, holotype, length of carapace, horns included, 28; width of same, spines excluded, 24; spines included, 30; length of cheliped, about 26 mm.

Habitat.—Rather rare on stony bottom in deep places (Gundlach).

Range.—Bahamas and Florida Keys to Venezuela and Panama.

Material examined.—

Abaco, Bahamas; 1886; *Albatross*; 3 males, 1 female (1 male is holotype of *M. pilosus*, Cat. No. 16299, U.S.N.M.).

Cuba; 1 female, large (Berlin Mus.).

St. Thomas; 3 lots of small specimens (Copenhagen Mus.).

Porto Rico; 1899; *Fish Hawk:* Reefs at Guanica; January 29; 1 male (24400). Reefs at Ponce; January 30; 1 male, 1 young (24091). Culebra: February 11; 1 male (24401).

Guadeloupe; 1 male, 2 immature females (Geneva Mus.)

Caracas, Venezuela; 1 male of medium size, 1 female immature (Berlin Mus.).

America; 1 female, type of *Cancer aculeatus* Herbst (Berlin Mus.).

Locality not given; 1 male, very large (Copenhagen Mus.). 1 young female; received from Copenhagen Mus. (19696).

Other records.—Tortugas, Barbados, Aspinwall (Stimpson). Vera Cruz (A. Milne Edwards). St. Bartholomew (Aurivillius).

MITHRAX (MITHRAX) HEMPHILLI Rathbun

Plate 139; plate 259, fig. 2

Mithrax hemphilli RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 263, pl. 37, fig. 2 (type-locality, Indian Key, Florida; holotype female, Cat. No. 15823, U.S.N.M.); Bull. U. S. Fish Comm., vol. 20, for 1900, pt. 2 (1901), p. 69.

Diagnosis.—Infra-orbital and antennal region with two parallel, oblique rows of spines. One spine on propodites of ambulatory legs. Hands smooth.

Description.—Carapace wider than long in large specimens and usually longer than wide in small ones. The surface may be closely paved with tubercles, very unequal in size and elevation and granulate, not smooth as in *M. pilosus;* sometimes, as in the small type-specimen, the tubercles are almost absent from the furrows and lower parts of the carapace. The largest and most prominent tubercles are arranged as follows: One on each epigastric lobe; a transverse row of four on protogastric lobes; three median mesogastric; one urogastric; a line of three on the cardiac region forming a transverse curve concave forward; behind these, one on median line; from seven to eight on branchial region, those most posterior being spinous; four spinous tubercles on intestinal region forming a transverse curve concave to posterior margin; the two tubercles at the extremities of this curve are continuous with a line of granules and tubercles which border the posterior margin. Numerous smaller tubercles and granules are scattered and clustered about the larger tubercles; a row of granules just within and parallel to posterior margin of mesogastric region.

The rostral horns in the immature taper to a point and curve inward, inclosing a suboval sinus open anteriorly; with age, the sharp tips disappear, the rostrum becomes relatively shorter and more truncate. The same change takes place in the preorbital spine and in the most anterior spine of the basal article of the antenna. Four strong, antero-lateral spines, roughened with granules, the last three sinuses bearing a secondary spine; a small, postero-lateral spine just above margin. Outer orbital tooth flattened, tip rounded; two supra-orbital lobules, one well-defined, the other insignificant, on the posterior slope of the preorbital spine; on the lower margin of the orbit are two subequal spines, one of which is on the basal antennal article; there are three other spines on the same article, one just below the first movable segment of the antenna, one (mentioned above) just outside the same segment but not marginal; the four spines form two parallel, oblique rows, the inner row continued on the subhepatic region by four spines or tubercles.

Chelipeds of moderate size, longer in the adult than the first leg, although the merus is not much stouter than that of the leg. Merus armed with 7 or 8 spines on outer or posterior margin, and a row of smaller and more numerous spines within the margin above and below; 3 spines on inner margin; a row of tubercles on lower margin; a shorter, secondary row of tubercles on upper surface; the most distal spines are the longest. Carpus covered with unequal, spaced tubercles, 3 of which, of small size, are on the inner margin. Manus unarmed.

Legs longer and slenderer than in *M. pilosus;* merus armed above with two rows of spines which increase in size toward the distal end

of the segment; carpus with a few spines; a single spine on the propodus midway of its length.

Measurements.—

Locality	Sex	Entire length of carapace	Length without horns	Width with spines	Width without spines
Guadeloupe	♂	34.5	32.5	35.1	32
Do	♀	28	26.3	31	27.3
Abrolhos Islands	♀	25.3	24.2	30	26.3
Culebra	♂	20	18.2	19.8	16.9
Do	♀	20.6	19	20.2	17.3
Pernambuco	♂	17.2	16.2	17.5	16
Indian Key	♀	17.2	15.8	16.6	13.8

Variations.—There is a great range in variation, (1) in the extent of the tuberculation of the carapace, (2) in the size and sharpness of the spines, related partly to age, (3) in the proportions of the carapace. The female from Abrolhos Islands is vastly wider and more completely tuberculated than any other specimen; this may be due to its isolated habitat. The male from Pernambuco has much stumpier rostral horns than any other specimen near its size.

Range.—Florida Keys to Rio de Janeiro, Brazil.

Material examined.—

Indian Key, Florida; 1885; H. Hemphill; 1 female, immature, holotype (15823).

Ensenada Honda, Culebra, Porto Rico; February 9, 1899; *Fish Hawk;* 2 males, 1 female (24206).

Guadeloupe; 1 male, 1 female (Geneva Mus.); labeled "*tuberculatus*".

Rio Formoso, Pernambuco, Brazil; 1876–1877; R. Rathbun; 1 male (19956).

Abrolhos Islands, Brazil; December 27, 1887; *Albatross;* 1 female (21948).

Rio de Janeiro; 1 female (Geneva Mus.).

MITHRAX (MITHRAX) ORCUTTI, new species

Plates 140 and 141

Type-locality.—Puerto Angel, Oaxaca, Mexico; 1910; C. R. Orcutt; 1 mature female, holotype; Cat. No. 47110, U.S.N.M.

Diagnosis.—A tubercle near proximal end of outer surface of palm. Basal antennal segment without a row of spines parallel to the marginal row. No spine on propodites of ambulatory legs.

Description.—Coarsely pilose. Carapace, including spines, a little longer than wide. While the surface is not closely paved with granules and tubercles as in *pilosus* and *hemphilli*, yet they are numerous and very unequal and the granules are higher than in those species.

The spines of the dorsum are arranged about as they are in *hemphilli;* the notable differences are: The posterior marginal spines of the intestinal region are more prominent and are not continuous with the spines at the extremity of the curved row above. The rostral horns are longer than in the allied species, and the tips curve inward, and are acutely pointed. The orbital teeth or spines are blunt-pointed, the one at the outer base of the preorbital spines is minute or obsolescent. Of the 4 antero-lateral spines, which also are blunt, only the first has a secondary spine on its anterior base; at the middle of each of the succeeding sinuses there is a small and insignificant spine or tubercle. The first or hepatic spine is on a lower level than the others. The fourth spine, at the lateral angle of the carapace, is further forward than in *hemphilli;* between it and the large postero-lateral spine there is a smaller, slenderer spine. On the subbranchial and subhepatic regions there is a row of 7 or 8 spines extending forward from the lateral angle of the carapace to the angle of the buccal cavity. On the basal antennal segment, the spine at the antero-external angle is the largest and is nearer the margin than is the corresponding one in *hemphilli;* besides, there is a smaller spine on the orbital margin and one at the base of the next segment; this last spine is at the end of a tuberculated ridge which borders the antennular fossa.

Chelipeds of male stout, longer than first ambulatory leg; merus with two rows of long spines above and numerous tubercles elsewhere; carpus armed with high, granulated knobs, much as in *hemphilli;* hands smooth except for a large tubercle on outer surface near proximal end and in the middle of its height; sometimes there is also a granule adjacent in the same horizontal line. Legs stout; merus armed above with 7 or 8 spines in two rows and at the distal end a single spine between those rows, below one or two small spines; 4 or 5 spines on carpus; propodus unarmed.

Color.—Crimson predominating, mixed with white; outer surface of chelipeds crimson with small white dots; abdomen about equally crimson and white, mottled.

Measurements.—

Locality	Sex	Total length	Median length	Total width	Width without spines
Panama	♂	61	56	60.2	57.7
Do	♀	67	59.4	65.8	58.4
Puerto Angel	♀	(1) 54.3	51	54.6	48.5
Mazatlan	♂	34.8	31.5	33.8	29.3

[1] Rostrum incomplete.

Range.—From Mazatlan, Mexico, to Panama.

Material examined.—Mazatlan, Mexico; A. Agassiz: 2 males (2102, M. C. Z.).

Puerto Angel, Oaxaca, Mexico; 1910; C. R. Orcutt; 1 female holotype (47110).

Mexico; T. B. Wilson collection: 1 female (Phila. Acad.).

Panama: Captain Field; 1 male, 2 females (Phila. Acad.).

Remarks.—This is undoubtedly very near *M. armatus*. In *armatus*, the palm is entirely smooth, according to Saussure, who reiterates the statement; and two of the large lateral spines are postero-lateral, according to his figure, instead of the fourth spine being at the widest part of the carapace.

MITHRAX (MITHRAX) ARMATUS Saussure

Plate 262, fig. 6

Mithrax armatus Saussure, Rev. et Mag. de Zool., ser. 2, vol. 6, 1853, No. 8, p. 418 [2], pl. 13, fig. 1 (type-locality, Mazatlan, Mexico; type in Geneva (?) Mus.).—A. Milne Edwards, Crust. Rég. Mex., 1875, p. 101.

Diagnosis.—Size medium. Carapace without lateral angle, but with 5 lateral spines. Dorsum tuberculate. Horns little divergent.

Description (after Saussure).—Body covered with stiff hairs. Carapace, exclusive of rostrum, as wide as long, rhomboid, a little rounded behind. Rostral horns elongate, slightly divergent, tips curving inward, outer margin rugose. Orbits bordered by strong spines, the antennal spine long, acute, recurved at the tip, rather remote from the orbit; supraorbital spine stout and blunt; besides, on the outer border there are 2 tubercles separated by small fissures. Lateral margins of the carapace armed with 5 long spines, the anterior of which has a smaller spine joined to it on the inner side; fifth spine postlateral. Numerous small spines on the inferior portions of the carapace. Grooves outside the gastric and cardiac regions strong. Entire carapace covered with small rounded tubercles and some larger ones disposed in regular order (see figure).

Manus of female long, smooth. Legs very spinous above, spines long, arranged in 2 rows; carpal joints without spines.

Color.—Obscure yellow.

Measurements.—Female, holotype, total length of carapace 1¾ French inches (47.3 mm.), length of rostral horns 3¼ lines (7.3 mm.), greatest width of carapace 1 7/12 French inches (42.8 mm.). (Saussure.)

Locality.—Mazatlan, Mexico. Known from the type-specimen only.

MITHRAX (MITHRAX) VERRUCOSUS Milne Edwards

Plate 144

?Cangrejo Dentòn PARRA, Descripcion de diferentes piezas de historia natural, 1787, p. 136, p. 51, fig. 1.

Mithrax verrucosus MILNE EDWARDS, Mag. Zool., vol. 2, 1832, class 7, pl. 4 (colored) and explanation (type-locality, under stones in Robert Bay, Martinique; type in Paris Mus.).—RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 265, and synonymy; not Proc. Washington Acad. Sci., vol. 2, 1900, p. 142.

?Mithrax trispinosus KINGSLEY, Proc. Boston Soc. Nat. Hist., vol. 20, 1879, p. 148 (type-locality, Florida; type not extant).

Mithrax aculeatus RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 264. Not *M. aculeatus* (Herbst) Milne Edwards.

Mithrax verrucosus, variety, RATHBUN, Ann. Inst. Jamaica, vol. 1, 1897, p. 9.

Mithrax plumosus RATHBUN, Bull. U. S. Fish Comm., vol. 20, for 1900, pt. 2 (1901), p. 67 (type-locality, Puerto Real, Porto Rico; holotype, Cat. No. 23775, U. S. N. M.).

Diagnosis.—Size medium to large. Dorsum closely paved with flat granules. Margins spinous. Wrist nearly smooth above, 3 tubercles on inner edge.

Description of fully developed male.—Cervical suture very deep. Carapace covered with flattened and closely crowded granules; nearly naked, although the granules are covered with small pits; a few dorsal spines on outer part of branchial region; spines of front and orbit truncate. Rostral horns short, separated by a deep sinus. Preorbital spine directed a little outward; 4 other spines on the orbital margin besides those on the antennal segment; in all, 3 spines on the broad basal segment of the antenna, the middle tooth the most advanced. On the antero-lateral margin 8 spines in pairs, the anterior spine of each pair the smaller, the spines of each of the first 2 pairs more or less united at base; a small postero-lateral spine. Below the lateral margin a row of about 9 spines.

Chelipeds stout; 6 sharp spines on outer margin of merus; a row of 6 spines on outer half of upper surface and 1 or 2 spines on inner half; inner margin of cheliped armed with blunt spines or lobes, one on the ischium, 4 on the merus, the distal 2 of which are at either end of a truncate lobe, and 3 or sometimes 2, on the carpus; dorsal surface of carpus smooth or nearly so, may be a little tuberculate toward proximal end; palm unarmed, elongate, a little swollen; fingers gaping, a large tooth on the dactyl near middle of gape, edges of the large spoon-shaped tips faintly crenulate, 2 bunches of hair inside the spoon.

Legs covered with coarse hair; merus and carpus spiny.

Color.—Vinous red (Desbonne). Color largely concealed by hairiness. Carapace very dark dull red, the pincers olive above and lighter olive below, tips claret-colored, teeth white; under side of

body maroon flecked with white and yellow (Henderson, note on male, Cat. No. 46036).

Measurements.—Male (15075), length of carapace including rostrum 51.2, width without spines 58.3, with spines 65 mm.

Age and sex variations.—The above description applies to 2 lots of males of good size from Florida (15075 and 42130), while a single male only 26 mm. long, from Swan Islands, in the western Caribbean Sea, north of Honduras, agrees with them except as to the development of the chelae. A large number of specimens in the collection, comprising all the females and young and the undeveloped males (with the exception of 15074), differ from the adult male type as follows: The surface of the carapace is densely covered with hair. The rostral horns of the females and undeveloped males are shorter and further apart, while the horns of the young specimens are longer and sharper. The spines of the inner margin of the cheliped are slenderer and sharper, especially noticeable at the distal angle of the merus where in place of the truncate lobe in the old male there are from 1 to 3 sharp spines. The dorsal surface of the carpus is more or less spinous. The extreme proximal end of the palm is spinulous and hairy above.

Individual variation.—A male of medium size (17206) and an adult female (4171) have no spinules on the manus. They are both thin-shelled specimens with hair on carapace very short and hair on legs so scanty as to make the spines conspicuous.

A male of large size (46036) but with undeveloped chelipeds has no spinules on the manus, while two similar males (46975) have rudiments of spinules.

Habits.—Lives near the shore where it hides in holes in the rocks covered with madrepores; it is nocturnal, seeking its food only at night when it may be easily caught by using a torch (Desbonne).

Range.—From South Carolina to Fernando Noronha, Brazil.

Material examined—

Charleston, South Carolina; 1852; L. Agassiz; 1 male (2100, M. C. Z.).

Green Turtle Cay, Bahamas; E. A. Andrews; 1 female (20707).

Abaco Island, Bahamas; 1886; *Albatross;* 1 young (16301).

Miami, Florida; G. M. Gray; 1 male (42130).

Indian Key, Florida; H. Hemphill; 2 males, 7 females (14081).

Knights Key, Florida; H. Hemphill; 2 males, 11 females (14073).

Big Pine Key, Florida; H. Hemphill; 3 males, 6 females (14030); 3 males (15075).

Sand Key reef, Florida; J. B. Henderson; 3 young (46879). May 11, 1911; 3 males, 2 young females (46975). May, 1913; 2 males (46036).

Key West, Florida; H. Hemphill; 20 males, 14 females, 1 young (13820).

Key West Harbor, Florida; 1884; Edward Palmer; 3 young (15810).

Tortugas reef, Florida; J. B. Henderson; 1 young female (46963).

Florida: J. B. Henderson; 1 male (45714). G. Wurdemann; 1 young (50376).

Cabañas, Cuba; caught by copper-sulphating on reef; June 8–9, 1914; station 16, *Tomas Barrera* Exped. (Henderson and Bartsch); 1 male, 1 female, 2 young (48664).

Cape San Antonio, Cuba; caught by copper-sulphating on reef; *Tomas Barrera* Exped. (Henderson and Bartsch); 1 female (48653).

Swan Islands; February, 1887; C. H. Townsend; 1 male (15074).

Jamaica: T. H. Morgan; 1 male (17206). 1896; Kingston Harbor; F. S. Conant; 1 young male (19589).

San Domingo; 1879; W. M. Gabb; 1 female (4171).

Porto Rico; 1899; *Fish Hawk:* Boqueron; January 25; 1 young female (24099). Reefs at Ponce; January 30; 1 male, 3 females, 1 young (24088). Ponce; January 31; 2 young (24100). Playa de Ponce Reef; February 1; 4 young (24098). Arroyo; February 4; 1 young (24101). On Lighthouse Reef, Arroyo; February 3; 1 young (24102). Caballo Blanco Reef; February 7; 2 females (24089). Porto Real, Vieques Island; January 27; 1 female (holotype of *M. plumosus*), 1 young (23775). Ensenada Honda, Culebra Island; February 11; 4 young (24097). Fajardo; February 17; 2 females (24090).

St. Thomas: 1884; *Albatross;* 3 young (16191). French Bay; ½ to 2½ fathoms; July 5, 1915; Clarence R. Shoemaker; 1 male (50375); gift of Carnegie Institution.

Guadeloupe: Desbonne, collector; 1 male (Geneva Mus.). Saussure, collector; 1 specimen (Geneva Mus.).

Caracas Bay, Curaçao; in corals and under stones; 1920; C. J. van der Horst; 1 young male, 1 female (Amsterdam Mus.), 1 young male (56861).

Spanish Water, Curaçao; in *Porites porites;* May 5, 1920; C. J. van der Horst; 1 young male (Amsterdam Mus.).

Spanish Bay, Curaçao; among stones in the surf; May 11, 1920; C. J. van der Horst; 1 young female (56864).

Fernando Noronha Island, Brazil; 1875–1877; R. Rathbun; Hartt Explorations; 1 male, 1 female (19963).

MITHRAX (MITHRAX) BELLII Gerstaecker

Plates 142 and 143

Mithrax ursus BELL, Proc. Zool. Soc. London, vol. 3, 1835 (1836), p. 171, Galapagos Islands (not *Cancer ursus* Herbst, 1788); Trans. Zool. Soc. London, vol. 2, 1836, p. 52, pl. 10, figs. 2, 2*c*, 2*d*, 2*e*, and 3.—A. MILNE EDWARDS, Crust. Rég. Mex., 1875, p. 103.

Mithrax bellii GERSTAECKER, Arch. f. Naturg., vol. 22, pt. 1, 1856, p. 112; name substituted for *M. ursus* Bell, not (Herbst); (type-locality, that given by Bell, namely, Galapagos Islands; type not extant).

Diagnosis.—Size large. Dorsum closely paved with flat granules. Projections of margin lumpy. Wrist tuberculate above, five tubercles on inner margin.

Description.—The adult is almost devoid of hair; the carapace is convex, broadly ornate, a little broader than long. Surface covered with flattened granules and very unequal tubercles, so closely crowded that they form a continuous pavement. Margins thick, projections coarsely rounded. Rostrum with two thick, rounded horns separated by a V-shaped space, and two pairs of dorsal tubercles. The knob at the angle of the basal antennal article is curved, larger than either rostral horn and on a higher level. Preorbital lobe tuberculiform, not prominent. Orbital margin with two other, smaller tubercles above, one, not prominent, at outer angle, and one below, besides a submarginal tubercle or blunt spine on the basal antennal article, which is conspicuous in dorsal view. Just behind and between the orbits there are two longitudinal rows of 2 or 3 tubercles each, and further back a transverse, sinuous line of five tubercles. On the lateral margin are six tubercles, the first and second large and bearing an accessory, anterior tubercle, the first hepatic, the second largest of all, the third is largest of the simple tubercles, the fourth the smallest, the sixth is postlateral. Further back on the postlateral margin there is a row of minor tubercles. On the subbranchial, subhepatic, and suborbital regions there is a row of tubercles some of which are visible in a dorsal view. Pterygostomian ridge tuberculate.

On the anterior margin of the merus of the outer maxilliped there is a strong, depressed spine, pointing obliquely inward. Chelipeds of male strong; arm tuberculate above, two blunt spines or tubercles on inner margin and six of the same on outer margin; wrist covered with low knobs, inner margin with a row of five knobs; hands elongate, arcuate above, concave below; fingers moderately gaping, tips with edges finely crenulate, a strong tooth near base of dactyl, edge of fixed finger finely denticulate part way in the gape. Legs stout, three principal articles tuberculate above, especially on the margins; of dactyls dark colored for nearly a third their length.

Abdomen of male very wide, last segment with concave sides.

Young.—The young presents such a different aspect from the adult that it might easily be mistaken for another species. The carapace is narrower; the width may be less than the length. The body and legs, but not the chelae, are everywhere covered with a furry hair. The protuberances are all sharp-pointed; the rostral horns curve toward each other; the pair of spines at the base of the horns are nearly as long as the horns and are divergent, while the next pair is very small.[52]

Color.—Adult, deep purplish brown, young, light brown (Bell).

Habitat.—Sandy mud (Bell).

Measurements.—Male (25672), entire length of carapace 63.6, width 65.4 mm. Young female (33386), entire length of carapace 21.7, width 20.7 mm.

Range.—Galapagos Islands, shore to a depth of 6 fathoms (Bell). Chile (Miers).

Material examined.—Chatham Island, Galapagos Islands; shore; January 8, 1905; *Albatross;* 1 young female (33386).

Black Bight, Albemarle Island, Galapagos Islands; Stanford Univ.; 1 male (25672).

Eden Island, off Indefatigable Island; in rock pools; April 6, 1923; Williams Galapagos Exped.; 1 young male (57563).

Galapagos Islands; *Hassler Exped.*; 2 young males (1966, M. C. Z.).

MITHRAX (MITHRAX) BRAZILIENSIS Rathbun

Plate 147, fig. 1

Mithrax braziliensis RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 268, pl. 36, fig. 2 (type-locality, Mar Grande, Bay of Bahia, Brazil; holotype, Cat. No. 19952, U.S.N.M.); Proc. Washington Acad. Sci., vol. 2, 1900, p. 143.

Mithrax verrucosus RATHBUN (not Milne Edwards), Proc. Washington Acad. Sci., vol. 2, 1900, p. 142.

Diagnosis.—Size small. Carapace nearly smooth above, four antero-lateral spines or spines and tubercles. Horns several times broader than long.

Description.—Carapace broader than long, ovate, rather evenly convex, and in the fully developed specimen nearly smooth dorsally, the regional sulci being faint except at the middle of the carapace. Rostrum very short and broad, the anterior margin of each lobe about three times as long as the depth of the median emargination. In the very young, the sinus is much wider and the lobes correspondingly narrower. Preorbital lobe large, blunt, not projecting, being less advanced than any of the three lobes of the antennal segment. Lobes of orbital margin eight, including two small, shallow, supraorbital lobules, one at the outer angle and two below,

[52] Rathbun, Mem. Mus. Comp. Zoöl., vol. 35, 1907, p. 74.

besides two on the antennal segment. Antero-lateral projections four, all acute and spiniform in the younger specimens, but in the old, the first or hepatic spine becomes a large tubercle, and the next spine becomes blunt. In the old there are two faint epigastric tubercles near together, two distant, protogastric tubercles, also faint, three of the same on the cardiac region forming a triangle pointing backward; a tubercle above the base of each leg of the last pair; two stronger, postlateral tubercles, one above the other, which is marginal. In the young and in some larger specimens also, the carapace is much rougher, showing numerous flattened tubercles or granules on the dorsal surface, a spinule in each antero-lateral interspace, while a spine takes the place of the postlateral marginal tubercle.

Chelipeds in the old male much longer and stouter than the legs; outer margin of merus armed with six or seven spines, inner margin with two tubercles; upper surface with three tubercles; carpus nearly smooth, two or three obscure denticles on inner margin, and in undeveloped specimens two dorsal tubercles near proximal end; palms smooth, widening distally; fingers gaping.

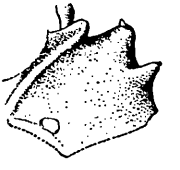

FIG. 123.—MITHRAX BRAZILIENSIS, MALE (19953), BASAL ARTICLE OF ANTENNA, ×7

Legs with two rows of spines on merus and carpus.

Color.—A rich, dark crimson.

Measurements.—Large male (Geneva Museum), entire length of carapace 23, width without spines 25.2, with spines 28.2 mm. Largest carapace (2101), entire length 29.4, width without spines 34.4, with spines 38 mm.

Range.—Brazil, from Bay of Bahia to Rio de Janeiro.

Material examined.—

Mar Grande, Bay of Bahia, Brazil; 1876–1877; Richard Rathbun, Hartt Explorations; 1 male holotype (19952).

Mamanguape stone reef, Brazil; June 20, 1899; A. W. Greeley, collector; Branner-Agassiz Exped.; 1 young (25755).

Pernambuco stone reef at Ilha de Nogueira; A. W. Greeley, collector; Branner-Agassiz Exped.; 1 young (M. C. Z.).

Rio Formoso, Pernambuco; 1876–1877; Richard Rathbun, Hartt Explorations; 1 male, 3 females (19953).

Maceio coral reef, Alagoas, Brazil; A. W. Greeley, collector; Branner-Agassiz Exped.: July 22, 1899; 1 male (25757). July 23 and August 3, 1899; 2 young (25756).

Brazil; A. W. Greeley, collector; 1 female (25758). Rio de Janeiro; 1 large male (Geneva Mus.).

Locality not known; 1 carapace, very large (2101, M. C. Z.).

MITHRAX (MITHRAX) PYGMAEUS Bell

Plate 262, figs. 1–4

Mithrax pygmaeus Bell, Proc. Zool. Soc. London, vol. 3, 1835 (1836), p. 172 (type-locality, Panama, 10 fathoms, sand; type not extant); Trans. Zool. Soc. London, vol. 2, 1836, p. 55, pl. 11, figs. 3, 3*f*–3*h*.

Diagnosis.—Antennae long and slender. Legs slender, largely smooth. Rostral lobes short, rounded.

Description.—Carapace depressed, subovate, regions rather distinct, surface smooth, lateral margin armed with two rows of spines, the upper row of six beginning at the outer orbital angle, the lower row of about nine, partly submarginal, beginning at the lower orbital tooth and meeting the first row at the postero-lateral angle. Frontal lobes short, broad, margins slightly arcuate, or subtruncate, sinus V-shaped. Orbits with a minute preocular tooth and two small teeth above, one at outer angle and one below. Eyes large, prominent. Basal article of antennae very broad, with two marginal teeth; movable portion cylindrical, nearly half as long as body. For maxillipeds and abdomen of male, see figures 2 and 4, plate 262.

Chelipeds nearly twice as long as carapace; arm and wrist with a few minute tubercles; hand robust, smooth; dactylus with a large tubercle in the middle of the gape. Legs slender, shorter than cheliped, having a few spinules on merus and carpus, propodus smooth.

Color.—Pale brownish above, reddish beneath; hands red brown.

Measurements.—Length and width of carapace of type male 3 lines (7.6 mm.). Male (2041, M. C. Z.), length of carapace 10.3, width with spines 11.5, without spines 11 mm.

Material examined.—Pearl Islands, Bay of Panama; April, 1875; S. W. Garman; 1 male, 2 females (2041, M. C. Z.); 1 male (55117), received from Mus. Comp. Zoöl.

MITHRAX (MITHRAX) HISPIDUS (Herbst)

Plates 145 and 146; plate 147, fig. 3

CORAL CRAB

Cancer hispidus Herbst, Natur. Krabben u. Krebse, vol. 1, 1790, p. 245 (by error, 247), pl. 18, fig. 100 (type-locality, not given; type in Berlin Mus.).

Maia spini-cincta Lamarck, Hist. Nat. Anim. sans Vert., vol. 5, 1818, p. 241 (type-locality, Antilles; type in Paris Mus.).

?Maja spini-cincta Say, Journ. Acad. Nat. Sci. Philadelphia, vol. 1, 1818, p. 458.

?Mithrax spinicinctus Desmarest, Dict. Sci. Nat., vol. 28, 1823, p. 264; Consid. sur les Crust., 1825, p. 150, pl. 23, fig. 1.

Mithrax hispidus Milne Edwards, Mag. de Zool., vol. 2, 1832, cl. 7, p. (13); Hist. Nat. Crust., vol. 1, 1834, p. 322.—A. Milne Edwards, Crust. Rég. Mex., 1875, p. 93, pl. 21, fig. 1–1*b*.—Miers, Journ. Linn. Soc. London, Zool., vol. 14, 1879, p. 673, pl. 13, figs. 7 and 8.—Rathbun, Proc. U. S. Nat.

Mus., vol. 15, 1892, p. 265 (part; *pleuracanthus* excluded).—VERRILL, Trans. Conn. Acad. Arts and Sci., vol. 13, 1908, p. 404, text-fig. 40, pl. 23, figs. 3 and 4; pl. 24, fig. 1.

Mithrax.....DESBONNE and SCHRAMM, Crust. Guadeloupe, 1867, p. 8, pl. 2, figs. 4 and 5.

Mithrax depressus A. MILNE EDWARDS (part), Crust. Rég. Mex., 1875, p. 96, not pl. 20, figs. 4–4*c* (specimens from Woman Key; 7 cotypes in M. C. Z.).

Diagnosis.—Three antero-lateral branchial spines, the anterior one of which is bifid, and a postero-lateral spine. Rostral sinus distinctly U-shaped, as wide, or nearly as wide, as either horn. Two spines on anterior margin of arm.

Description.—Carapace swollen, considerably wider than long, smooth, except for some low, rounded prominences chiefly toward the outer margin of the branchial region. Gastric tubercles very faint. Front wide; horns short, obtuse, interspace U-shaped, as wide as either horn. Preorbital angles blunt, slightly produced. Basal joint of antenna with two teeth, inner one nearly reaching line of rostrum, the other smaller, on orbital border; besides, the orbit has four tubercles on margin, two superior, much smaller than external or inferior tubercle. Lateral margin armed with five spiniform teeth; the first obtuse, often bifid at extremity; the second longer, sharp and double, curving forward; third and fourth more slender and about the same length; fifth postero-lateral, much smaller, and situated higher up on carapace; in a transverse oblique line with this spine are two tubercles or a spine and a tubercle. Subhepatic region with two tubercles; a number of tubercles, some of them pointed, are on the subbranchial and pterygostomian regions. Arm with four or five spines on upper margin; two on inner margin; and a few tubercles on the upper surface. Wrist smooth; inner margin evenly rounded. Hand smooth; fingers narrowly gaping; a broad, low tooth near the base of the dactylus. In young specimens the tubercles of the carapace are more protuberant.

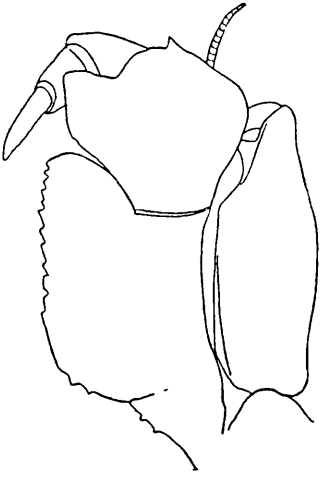

FIG. 124.—MITHRAX HISPIDUS (17962), MAXILLIPED, × 7.6

Color.—Larger specimens nearly uniform deep brownish red or terra cotta above, brighter on chelipeds, darker on legs (due to brown hairs); legs often with brighter red bands at joints; under parts of body mostly white or bluish white; legs red, specked with pale yellow. (Verrill.)

Measurements.—Male, Brazil (Copenhagen Mus.), total length of carapace 102.2, width without spines 124, with spines 146, length of propodus of cheliped 129, width of same 46.3 mm.

Variations.—A male from the Abrolhos Islands (21949) has the first branchial spine unusually developed and divided into two nearly equal spines. The other Brazilian specimens in the collection show the same tendency in a lesser degree. No. 13937, a male, unfortunately without indication of locality, is remarkably rough, all the protuberances of the carapace being well marked, most of them acute; the rostral horns are very narrow and far apart.

Range.—Delaware Bay (Say); off Charleston Harbor, South Carolina (a young male, Gibbes); Georgia (Gibbes); Bahamas, Miami, and Florida Keys to São Paulo, Brazil (Moreira). Bermuda. Shallow water to 30 fathoms.

Material examined.—

Bahamas; 1859; Dr. H. Bryant; 1 fragmentary (53061); from Boston Soc. Nat. Hist.

Green Turtle Cay, Bahamas; E. A. Andrews; 1 male, 1 young (20706).

Miami, Florida; G. M. Gray; 1 male, 1 female (42131).

Cape Florida, Florida; G. Wurdemann; 4 young (1958, M. C. Z.).

Between Salt Pond Key and Stock Island, Florida; 1884; Edward Palmer; 1 female (9282).

Woman Key, Florida; William Stimpson, collector; 7 young, cotypes of *M. depressus* (1960, M. C. Z.); 1 young, labeled "*pleuracanthus*" by A. Milne Edwards (1959, M. C. Z.).

Dry Tortugas, Florida; 1917; W. H. Longley; 1 ovigerous female (returned to sender).

Florida; G. Wurdemann; 1 large male, 2 small, male and female (2123, M. C. Z.).

Florida Keys, Florida; May, 1913; 1 male (46040).

Kingston Harbor, Jamaica: 1893; R. P. Bigelow; 1 male (17962). 1896; F. S. Conant; 1 young female (19586).

Caracas Bay, Curaçao; in sponge; May 3, 1920; C. J. van der Horst; 1 immature male (Amsterdam Mus.).

Off Cape St. Roque, Brazil; lat. 6° 59′ 30″ S.; long. 34° 47′ 00″ W.; 20 fathoms; brk. Sh.; temp. 79° F.; December 16, 1887; station 2758, *Albatross;* 1 young (21950).

Plataforma, Bahia, Brazil; 1876–1877; Richard Rathbun, Hartt Explorations; 1 male (19951), 1 ovigerous female (40606).

Bom Fim, Bahia, Brazil; stone reef; 1876–1877; Richard Rathbun, Hartt Explorations; 1 male (19950).

Porto Seguro, Brazil; Hartt and Copeland, Thayer Exped.; 1 male (1953, M. C. Z.), variety.

Off Abrolhos Islands, Brazil; 30 fathoms; 1872; U. S. C. S. S. *Hassler;* 1 young female (1993, M. C. Z.); "*Mithraculus coronatus*" (A. Milne Edwards).

Abrolhos Islands, Brazil; December 27, 1887; *Albatross;* 1 male (21949), variety.

Rio de Janeiro, Brazil; received December 1, 1863; G. N. Davis; 1 male, 1 female (1954, M. C. Z.), variety.

Brazil; 1 very large male (Copenhagen Mus.).

Bermuda; 1876–1877; G. Brown Goode; 1 male (41523).

Bermuda; T. H. Bean; 1 male, 1 female (21605).

Locality not given: One female, type (Berlin Mus.). One male, unusually rough (13937). From Bureau of Fisheries; 1 female (32237).

MITHRAX (MITHRAX) CARIBBAEUS Rathbun

KNOBBED CRAB

Plates 148 and 149

Mithrax hispidus Benedict, Johns Hopkins Univ. Circ., vol. 11, No. 97, Apr., 1892, p. 77.—Rathbun (part), Proc. U. S. Nat. Mus., vol. 15, 1892, p. 265; Bull. U. S. Fish Comm., vol. 20 for 1900, pt. 2 (1901), p. 67 (specimen from Guanica).

Mithrax depressus Rathbun (part), Bull. U. S. Fish Comm., vol. 20 for 1900, part 2 (1901), p. 68 (specimens from Hucares).

Mithrax caribbaeus Rathbun, Proc. Biol. Soc. Washington, vol. 33, 1920, p. 23 (type-locality, St. Thomas; holotype, Cat. No. 50363, U.S.N.M.); Univ. Iowa Studies Nat. Hist., vol. 9, 1921, p. 83, pl. 3.

Diagnosis.—Two parallel, transverse, or nearly transverse rows of three tubercles or tubercles and spines on postero-lateral region of carapace; at least three of these are of good size. Rostral sinus U-shaped, about as wide as each horn. Two stout spines on anterior margin of arm; the proximal one may be bifid. Crenulation or tuberculation of prehensile edges of fingers persisting in the old.

Description.—This species is very closely related to *M. hispidus*, which it approaches in its large size. Rostral horns longer than in *hispidus*, and a little less truncate. Carapace a little narrower, approaching the shape of *pleuracanthus*. This species differs from all its allies in the arrangement of tubercles or tubercles and spines on the postero-lateral region. There is a postero-lateral spine in smaller specimens which becomes a tubercle in older ones. This forms the outermost unit of a transverse row of 3, which is subparallel to another anterior row of 3 tubercles. Anterior margin of arm provided with 2 conical spines; the only exceptions are the holotype which is unusually large and has the proximal spine bifid and the smallest specimen (16192) in which the proximal spine of the right side is missing.

The chelae of the large specimen differ from those of *hispidus* of similar size in having the palm shorter and the fingers longer than in

that species. The prehensile edges are crenulated in the gape as well as along the meeting edges, while in *hispidus* the gaping edges are entire except for the large, crenulated tooth of the dactylus.

Measurements.—Male, holotype, total length of carapace 66.3, length on median line 63.5, width without spines 71.3, with spines 78.4, length of propodus of cheliped 69.4, width of same 26 mm.

Variation.—One male specimen from Jamaica (43009) shows a difference in the postero-lateral tubercles of the two sides; on the left side only, the large tubercle obliquely in front of the postero-lateral spine is missing.

Range.—West Indies; northern coast of South America.

Material examined.—

Cuba: On reef flat, between Cayo Hutia and the little Cayo, NE. of Light; 1914; *Tomas Barrera* Exped. (Henderson and Bartsch); 1 young (48729). Bahia Honda; 2 to 12 fathoms; M. Co.; June 4–5, 1914; station 15, *Tomas Barrera* Exped. (Henderson and Bartsch); 1 young female (48728). Havana; May 1, 1871; Ramon N. Forns; 1 male (2099, M. C. Z.).

Jamaica: Montego Bay; July 15, 1910; C. B. Wilson; 1 young (43011). 8 miles E. of Montego Bay; coral reef; July 20, 1910; C. B. Wilson; 2 males (43009). Kingston Harbor; 1896; F. S. Conant; 1 male (50002). Jamaica: T. H. Morgan; 1 male, 1 female (17207). 1910; E. A. Andrews; 1 young (43010).

Haiti: Doctor Weinland; 1 male (328, M. C. Z.). From the bottom of the sea near the Caimites; April 20, 1865; P. R. Uhler; 1 young male (2159, M. C. Z.).

Porto Rico; *Fish Hawk:* Guanica; January 28; 1 male (24209). Hucares; February 13; 2 males (24213).

St. Thomas: December, 1871; U. S. C. S. S. *Hassler;* 1 male, 1 female (1952, M. C. Z.), 1 male, 1 female (exhibition case, M. C. Z.). In harbor, from piles near town; July 7, 1915; C. R. Shoemaker; 1 large male, holotype (50363); received from Carnegie Institution. From piles; 1915; C. R. Shoemaker; 2 young (50367).

Barbados; 1918; Barbados-Antigua Exped. Univ. Iowa; 2 females (Mus. S. U. I.).

Dutch West Indies (exact locality not given); 1905; J. Boeke; 1 male (42963).

Curaçao: 1884; *Albatross;* 1 young female (16192). Caracas Bay; April 19, 1920; C. J. van der Horst; 1 young male (Amsterdam Mus.). Spanish Water; from *Porites porites;* April 13, 1920; C. J. van der Horst; 1 young (56868).

Venezuela: Porlamar, Margarita Island; July 7, 1895; Lieut. Wirt Robinson, U. S. A.; 1 male (18820), "knobbed crab; common."

MITHRAX (MITHRAX) PLEURACANTHUS Stimpson

Plate 150

Mithrax pleuracanthus Stimpson, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 116 (type-localities, Key West, 2–5 fathoms; Tortugas, 5 to 6 fathoms, and St. Thomas; types not extant).—A. Milne Edwards, Crust. Rég. Mex., 1875, p. 95, pl. 20, figs. 3–3 *f* (Guadeloupe).—Rathbun, Bull. U. S. Fish Comm., vol. 20 for 1900, pt. 2 (1901), p. 68.

Mithrax depressus A. Milne Edwards (part), Crust. Rég. Mex., 1875, p. 96, pl. 20, figs. 4–4 *c* (type-localities, Guadeloupe and Woman Key; figured cotype from Guadeloupe in Paris Mus.; the cotypes from Woman Key are in M. C. Z. and are young *hispidus*).—Rathbun, Bull. U. S. Fish Comm., vol. 20 for 1900, pt. 2 (1901), p. 68.

Mithrax hispidus Rathbun, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 265 (part).

Diagnosis.—Of the four lateral protuberances of the carapace, the last is spiniform, the others tuberculated: second branchial tubercle reduced in size. A small postero-lateral tubercle. Rostral sinus V-shaped in the young, U-shaped in the old.

Description.—The form of the carapace resembles that of the two preceding species; the third or posterior branchial spine is longer than the first, however, and the second spine shorter than the first; there are several tubercles about the base of each lateral spine. Tubercles of carapace well marked. There is a small postero-lateral tubercle; above it and further in there is a large tubercle which is one of a row of two arranged almost transversely. Rostral horns shorter and wider than in *hispidus* or *caribbaeus*, and interspace narrower and inclined toward the triangular; in the young, always triangular. The arm of the cheliped bears usually either a simple spine or a spine with a tubercle on its proximal slope.

Color.—Carapace yellowish white, with blotches of bright red; the 2 largest red spots over branchial areas; a median spot on cardiac area; a pair situated farther back; another small pair behind orbits, another beneath orbits; legs yellowish white, blotched or barred with red; chelae light red with pale tips. (Verrill, for *depressus*.)

Measurements.—Largest specimen, male (46815), total length of carapace 36.3, width without spines 38.2, with spines 43, length of propodus of cheliped 31.8, width of same 11.8 mm.

Variations.—In the young the rostral horns are wider behind and flatter than in the adult; in one of the largest males (46791), the rostral sinus is rounded behind so that it appears almost U-shaped.

In a small ovigerous female (50364), the large tubercle above the postero-lateral margin has a sharp point, giving it a spinous appearance, but its position is too high up to correspond to the spine of *hispidus*.

Range.—From North Carolina and the Bahamas to Gulf of Mexico and Caribbean Sea. Shallow water to 28 fathoms.

Material examined.—See table, pages 412-417.

Material examined of Mithrax pleuracanthus

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
North Carolina:	° ′ ″	° ′ ″			°C						
Fishing grounds, off Beaufort.	34 20 00	76 49 00	13.5	Co. S. Sh		Sept. 6, 1913	7943	*Fish Hawk*	2♂ 4♀	51103	
	Course E. one mile										
Do	Course NE. from buoy. 1 mile.		15.5	smooth		Aug. 12, 1914	8217	do	1♀	51016	
Do								do	3	51084	
Off Cape Fear	33 42 45	77 31 00	17	S. P		Oct. 20, 1885	2616	*Albatross*	4 y	11223	
Do	33 37 30	77 36 30	14	crs. yl. S. brk. Sh.		do	2617	do	5 y	11221	
Do	33 37 15	77 35 30	17	crs. yl. S. brk. Sh.		do	2618	do	7	11207	
Do	33 38 00	77 36 00	15	crs. yl. S. brk. Sh. rotten Co.		do	2619	do	1♂	11230	
South Carolina: Blackfish Banks, off Charleston.						Mar. 8, 1880		R. E. Earll	2♂ 1 brk	5760	
Bahamas: Green Cay						1903		B. A. Bean	1 y	31058	From Geogr. Soc., Baltimore.
Do						June 30, 1903		Bean and Riley	2 y	31059	Do.
Florida:											
Indian Key								H. Hemphill	1♂	15076	
Lower Metacumbe Key			(1)	Grass		1885		do	1♂	15077	
Key Vaccas			(2)					do	1♀	15806	
			Feet								
Channel Key Lake	1¾ miles E. of Channel Key.		10	S. G. R		Jan. 29, 1903	7442	*Fish Hawk*	1♀	46803	
Hawk Channel	1¾ miles S. ¾ E. of Pigeon Key.		18	S. G	23.5	Jan. 27, 1903	7426	do	1 y	46863	
Do	3⅛ miles N. ¾ E. of Sombrero Lt.		11.5	rky		do	7427	do	2♀ (1 ovig.) 1 y	46801	
Do	½ mile SE. by S. of SE. end of Duck Key.		14	rky		do	7429	do	4♂ 4♀ (2 ovig.)	46802	A small male was found in a finger sponge.
			Fathoms								
Do	1½ miles E. of Tea Table Key.		2.5	barry		Feb. 19, 1903	7466	do	1 ovig. ♀	46804	
Off Duck Key	Duck Key, N., 1.25 miles.		2.75	Co.S.Grass Sh		Dec. 20, 1912	4	do	2♂	50444	
Grecian Shoals	4¼ miles W. by N. of Elbow Reef Beacon.		2.75			Feb. 19, 1903	7467	do	1♀ y	46864	

Summerland Keys						Dec. 6, 1906		B. A. Bean	1♂	33135	
Off Key West, inside the reef.	E. Martello Tower to Key West Light, 36°; to Sand Key Light, 52° 36′.	5.25	co. S. G	20		Feb. 13, 1902	7277	*Fish Hawk*	7 y	46792	
Do	Key West Light to E. Channel Bar Buoy, 71° 53′; to Beacon "A," 74° 46′.	5.25	co. S. G	20		do	7278	do	1♂ 6 y 1 y	46793 46862	
Key West								C. T. Maynard	2♂ 1♀	53052	From Boston Soc. Nat. Hist.
Gulf of Mexico, off Northwest Channel.	24 42 50 | 81 53 38	7	Co	19		Feb. 24, 1902	7288	*Fish Hawk*	1♀	46791	
Do	24 42 30 | 81 55 52	7.25	Co	20		do	7293	do	1♂ 2♀	28784 46795	
West Channel, entrance to Key West.	Midchannel Buoy bearing W. by S. ¼ S., distant ½ mile.	7.75	co. S	20		Feb. 13, 1902	7271	do	1 y	46861	
Off Boca Grande	Boca Grande Light, N.NE. ¾ E., 24½ miles to NE. ¼ N., 20 miles.	12.5		°F 68.5		Jan. 2, 1913	7796	do	1 y. ♀	56223	
Eastern Dry Rocks						1884		Edward Palmer	1♀	13853	
Dry Tortugas		16						J. B. Henderson	1 y. ♂	50391	
Off Cape Sable	25 00 55 | 81 22 15	4	rky			Dec. 19, 1902	7372	*Fish Hawk*	1♂	46842	
Do	25 01 00 | 81 25 30	4.5	speckled S. Sh			do	7373	do	1♂ 1 ovig. ♀	46798	
Do	25 07 05 | 81 25 50	4.5	gy. S. G			Dec. 18, 1902	7360	do	2 ovig. ♀	46796	
Do	24 58 05 | 81 28 30	5	rky			Dec. 19, 1902	7375	do	1♂ 1♀	46799	
Do	25 07 10 | 81 29 00	5	rky. Co			Dec. 18, 1902	7361	do	2♂ 3 ovig ♀	46797	
Do	E. end of Sawyer Key bearing S. ¼ W., 2¼ miles.	4.75	rky			Dec. 22, 1902	7390	do	2♂ 5♀ 6 y	46800	
Do						Dec. 17, 1902		do	1 ovig. ♀	46790	
North of Dry Tortugas	25 04 30 | 82 59 15	26	fne. wh. S. brk. Sh.			Mar. 19, 1885	2414	*Albatross*	1 y. ♀	18918	
Off Cape Romano	25 50 15 | 82 41 45	21	sdy	°C 20		Apr. 2, 1901	7124	*Fish Hawk*	1♂ 1 y	25590	
West of Marco	26 00 00 | 82 57 30	24	fne. S. bk. Sp. brk. Sh.			Mar. 19, 1885	2413	*Albatross*	4 y	15080	
Marco								H. Hemphill	2♂ 1♀	6983	
Oyster Bay								do	1 y. ♀	15079	
Off Charlotte Harbor	26 33 00 | 83 10 00	28	sdy	19.1		Apr. 2, 1901	7123	*Fish Hawk*	4♂ 2♀	25589	
Sarasota Bay									1♂	53063	From Boston Soc. Nat. Hist.; J. S. Kingsley collection.
Highland section	27 49 30 | 83 00 00	7	Co. hrd	14.6		Jan. 28, 1902	7257	*Fish Hawk*	4♂ 1♀	46791	
Do	27 55 30 | 82 51 30	3	hrd. S. brk. Sh.	15.8		do	7249	do	1 y	46860	
Do	27 55 30 | 83 11 30	13	Co. R	15.2		do	7253	do	3♂	46841	

[1] Below low tide.

[2] Low tide.

Material examined of Mithrax pleuracanthus—Continued

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
Florida—Continued.	° ′ ″	° ′ ″			°C						
Anclote section	Anclote Light bearing E. ⅛ N., distant 21½ miles.		12.5	R. Co. S	17.2	Mar. 28, 1901	7106	*Fish Hawk*	1♂ 2♀ 3 y	25588	
Do	28 01 30	83 08 00	11	rky	13.5	Jan. 23, 1902	7234	do	4♂ 7♀	46839	
Do	28 08 00	82 57 00	5.5	sdy. brk. Sh	13	do	7229	do	1 y	46858	
Do	28 08 30	83 10 00	10	rky. C	13.5	do	7231	do	1♂ 1♀	46838	
Do	28 19 30	83 01 00	6.25	rky. G	12.5	Jan. 24, 1902	7239	do	1♀	46832	
Do	28 19 45	83 06 30	8.5	rky. G	13	do	7240	do	1 y	46859	
Do	28 20 15	83 12 15	10.25	S. G	13.5	do	7241	do	1♂	46840	
Do						do	(3)	do	1♂ 1♀	46973	
					°F						
Do	Anclote Light, E. ⅛ S., 14 miles.		8.5	Co	63.95	Jan. 11, 1913	20	do	2♂ 1♀ 1 y	50445	
					°C						
St. Martins section	28 26 00	83 02 30	7.5	rky. Co	13	Jan. 15, 1902	7215	do	1♂ 2♀	46830	
Do	28 26 30	83 08 00	10	sdy. grassy	13.6	do	7216	do	1♂ 2 y	46831	
Do	28 34 30	83 15 45	7.5	rky. sdy	13	do	7220	do	1 y	46855	
Do	28 34 45	83 08 00	5.75	Co. R. G	12.5	do	7221	do	7♂ 6♀	46836	
Do	28 35 30	83 02 30	3	sdy. grassy	12	do	7222	do	1 y ♀	54779	
Do	28 41 00	83 15 15	8.5	rky	13.5	Jan. 17, 1902	7226	do	2♂ 1♀ 1 y	46837	
Do	28 42 30	83 09 45	7	S. brk. Sh. G	12.2	do	7225	do	1 y	46857	
Do	28 45 30	83 00 00	5	S. brk. Sh. G	11.7	do	7224	do	1 y	46856	
Do	28 47 30	84 37 00	24	Co. brk. Sh		Mar. 15, 1885	2407	*Albatross*	2 y	15805	
Off northwest end St. Martins Reef.	Near 28 50 00	Near 83 00 00				1887		Lieut. J. F. Moser, U. S. N.	7 y	13044	
North Key section	28 47 45	83 28 00	11.5	R. Sh	17	Nov. 28, 1901	7186	*Fish Hawk*	1 y	54778	
Do	28 47 55	83 16 30	8	rky. grassy	17	Dec. 9, 1901	7211	do	2♂ 2♀ 2 y	46974	
Do	28 50 15	83 23 15	10	R. Co. Sh	17	Nov. 28, 1901	7187	do	1♂	46827	
Do	28 52 45	83 07 00	5.75	rky	16.1	Dec. 9, 1901	7209	do	3♂ 8♀ 4 y	46961	
Do	28 54 00	83 30 00	11	R. Co. S	17	Nov. 28, 1901	7185	do	1 y	46852	
Do	28 55 00	83 28 10	10.5	R. Co	17	do	7184	do	2 y	54776	
			Feet								
Do	28 56 00	82 55 00	19			Apr. 3, 1887		Lieut. J. F. Moser, U. S. N.	1♂	13063	

							Fathoms							
Do	28	57	30	82	58	00	3	rky	15.5	Dec. 9, 1901	7207	*Fish Hawk*	2 y	46854	
Do	29	00	00	83	18	45	5.75	rky. Co	15.3	Nov. 28, 1901	7182	do	1 ♀	46826	
Do	29	02	30	83	14	00	4.25	sdy	14.8	do	7181	do	2 ♂	46825	
Cedar Keys										Feb., 1887		Lieut. J. F. Moser, U. S. N., U. S. C. S. S. *Bache*.	1 y, ♂	12474	
									° *F*						
Off Cedar Keys	Cedar Keys Light, N. ¾ E., 2 1¾ miles.						5.75	Co	63.45	Jan. 11, 1913	21	*Fish Hawk*	1 ♀	50463	Encrusted with bryozoan and serpulid.
									° *C*						
Pepperfish Key section	29	13	15	83	32	30	7.25	rky	17.2	Nov. 21, 1901	7165	do	1 y	46851	
Do	29	18	00	83	37	00	8	rky	18	do	7161	do	4 ♂ 6 ♀ 6 y	46824	
Do	29	19	30	83	46	00	10	S. Co	18.3	Nov. 20, 1901	7158	do	2 ♀ 1 y	46822	
Do	29	21	00	83	32	00	6.75	rky	16.7	Nov. 21, 1901	7160	do	1 ♂ 3 y	46823	
Do	29	30	50	83	31	40	3.25	sdy	22	Nov. 5, 1901	7145	do	1 y	46850	
Do	29	32	10	83	29	50	3	sdy	21.8	do	7144	do	1 y	46849	
Deadmans Bay section	29	24	30	83	49	30	10	R. Co	17	Dec. 6, 1901	7202	do	1 y	46853	
Do	29	32	00	83	58	30	10.5	Co	22.5	Nov. 7, 1901	7154	do	1 ♀	46821	
Do	29	35	20	83	56	00	9.5	S. Co	23	do	7153	do	3 ♂ 3 ♀	46820	
Do	29	39	30	83	53	10	7.5	S. Co	21.5	do	7152	do	2 ♂ 2 ♀ 2 y	46819	
Do	29	43	40	83	49	45	5.25	Co	20.5	do	7151	do	1 ♂ 3 ♀ 1 y	46818	
Do	29	48	05	83	46	40	4	Co	19.5	do	7150	do	1 ♂	46817	
Aucilla section	29	34	00	84	07	20	10.5	R. Co	17.6	Dec. 5, 1901	7195	do	1 ♂ 3 y	46828	
Do	29	38	30	84	04	00	9.5	R. Co	16.5	do	7196	do	1 ♂	46829	
Do	29	44	09	84	06	30	7	R. Co	16.5	do	7193	do	4 ♂ 2 ♀	46835	
Do	29	45	48	83	57	30	7	S. Co	21	Nov. 6, 1901	7149	do	1 ♂	46816	
Do	29	48	10	83	55	15	5	S. Co	21	do	7148	do	1 ♂ 2 ♀ 3 y	46815	
Do	29	49	00	84	06	15	6	R. Co	15	Dec. 5, 1901	7192	do	2 ♂ 3 ♀ 3 y	46834	
Do	29	52	10	83	51	47	3	S. Co	20	Nov. 6, 1901	7147	do	2 ♂	46814	
Do	29	54	00	84	06	00	4.5	R. Co. Sh	14	Dec. 5, 1901	7191	do	1 ♂	46833	
									° *F*						
Off Carrabelle	Carrabelle Light, N. by W., 14⅔ miles.						10		60.2	Jan. 16, 1913	24	do	1 ♂	50446	
Do	Carrabelle Light, NW. ½ N., 16 miles.						10.25		60.2	do	23	do	2 ♂	50447	
Pensacola												Silas Stearns	1 ♂	4501	Received May 31, 1882.
Do												do	1 ♂ 1 ♀	9372	From fish stomach.
Southern coast, United States.										1880		U. S. Fish Comm.	3 ♂ 4 ♀	5780	
Yucatan Channel: North of Cape Catoche, Mexico.	22	08	30	86	53	30	25	Co. S		Jan. 30, 1884	2362	*Albatross*	1 y	55782	

[3] Station 7211 or 7212.

Material examined of Mithrax pleuracanthus—Continued

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
Cuba:	° ′ ″	° ′ ″			°F						
Bahia Honda						June 7, 1914		*Tomas Barrera* Exped.; Henderson and Bartsch.	1♂ 2♀	48672	
On reef Lavesos Italienos, opposite Cayo Lavesos.			2-3	Co. S. R.		June 2, 1914	14	do	2 y	48724	
Cayo Arenas			2			May 12, 1914	3	do	1♂ 2 y	48725	
Porto Rico:											
Off Puerto Real	Punta Guaniquilla, S. ¼ E., 2 miles.		8.5	Co. S.		Jan. 25, 1899	6074	*Fish Hawk*	1 y	24128	
Off Vieques Island	Point Mula Lighthouse, E. ½ N., 11¼ miles.		6	Co		Feb. 8, 1899	6096	do	6 y	24130	
Do	Point Mula Lighthouse, S. SW., ⅜ W., 5¾ miles.		14	Co. S.		do	6085	do	1 y 1♂ 3 y	24127 24169	
Off Culebra Island	Culebritas Lighthouse, N. NE., 5¾ miles.		16	Co		do	6090	do	1 y. ♀	24124	
Do	Culebritas Lighthouse, NE., 5¼ miles.		15	Co		do	6093	do	1 y. ♂	24125	
Off Humacao	Village of Hucares, N. ½ W., 3 miles.		12.5	Co		do	6098	do	2 y 1 y	24129 24168	
Do	Village of Hucares, NW. ¾ W., 2¼ miles.		9.5	Co		do	6099	do	1 y	24123	
St. Thomas						1884		*Albatross*	28	7651	
South side Buck Island, 3 miles from St. Thomas; from fish pot.						July 6, 1915		C. R. Shoemaker	3♂ 2♀	50366	From Carnegie Institution.
South of Buck Island, about 3 miles from St. Thomas; from fish pot.						July 8, 1915		do	2♂ 5♀ (1 ovig.)	50365	Do.
Buck Island						July 30, 1915		do	1 ovig. ♀	50364	Do.
Off St. Thomas	Sail Rock, W. by N. ½ N., 6 miles.		20-23	Co		Feb. 6, 1899	6079	*Fish Hawk*	1 y	24122	
Do	Sail Rock, NW. ½ W., 4 miles.		20	Co		do	6080	do	1 y. ♀	24126	

St. Martin: Grootе Bai									(2 y.	Leiden Mus. 42975.
									(1 y.	
Simsons Bay Lagoon									1♂	Leiden Mus. 16193.
Caribbean Sea: Old Providence.									1 y. ♂	
Curaçao: St. Joris Bay			1	rky						Leiden Mus.
Rifwater			1	muddy					2 y.	
Do.			(+)	muddy					1♂	do.
									1♀	do.

+ Shallow.

MITHRAX (MITHRAX) TORTUGAE Rathbun

Plate 147, fig. 2

Mithrax tortugae RATHBUN, Proc. Biol. Soc. Washington, vol. 33, 1920, p. 23 (type-locality, Tortugas; type, Cat. No. 50442, U.S.N.M.).

Diagnosis.—No spine nor tubercle on postero-lateral margin, but a tubercle above the margin. Rostral sinus V-shaped, horns very wide. Two tubercles or blunt spines on anterior margin of arm.

Description.—Carapace wider than in the three preceding species; the marginal hepatic and the prominent first branchial lobe rectangular, their anterior margins transverse, their posterior margins longitudinal, the branchial lobe having a very short hooked spine at the angle. Second branchial lobe or spine low, conical; third spine slender, hooked; from it a line of two tubercles runs obliquely transversely backward on the carapace. No spine nor tubercle on the true postero-lateral margin. Rostral horns short, broad, subtruncate; sinus V-shaped.

Two blunt spines or tubercles on anterior or inner margin of arm, the distal one larger. Tubercles of wrist very low.

Otherwise as in *M. pleuracanthus* which it most nearly resembles.

Color.—A specimen preserved in formalin has regular patches on the carapace which are finely dotted with dull crimson. Chelipeds closely spotted and finely mottled with the same. Merus of legs incompletely banded with a brighter crimson, with some small spots of the same shade on the succeeding segments especially at articulations.

Measurements.—Female, holotype, total length of carapace 19.7, width without spines 22.1, with spines 24.3 mm.

Range.—Bahamas; Florida Keys; Curaçao.

Material examined.—

Abaco Island, Bahamas; 1886; *Albatross;* 1 young female (16302).

Dry Tortugas, Florida; W. H. Longley; 1 immature female, holotype (50442).

Caracas Bay, Curaçao; in coral; April 2, 1920; C. J. van der Horst; 1 young (Amsterdam Mus.).

MITHRAX (MITHRAX) TUBERCULATUS Stimpson

Plate 151, figs. 1 and 2

Mithrax tuberculatus STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 7, 1860, p. 189 (type-locality, Cape St. Lucas, Lower California; cotypes, Cat. No. 1228, M. C. Z., and Cat. No. 23178, U.S.N.M.). Probably not *M. tuberculatus* Aurivillius, K. Svenska Vet.-Akad. Handl., Stockholm, vol. 23, 1889, p. 57 (St. Barthelemy, 1 meter).

Diagnosis.—Two rounded lobes and a spine on antero-lateral margin. Carapace very granulate. Two or three tubercles on anterior margin of arm.

Description.—Carapace covered with granulate tubercles; interspaces smooth (non-granulate), punctate; marginal projections granulate. Rostral horns short, broader than long, truncate, extremity granulate, interspace nearly V-shaped. Preorbital lobe subrectangular, followed by two small, supra-orbital tubercles; outer orbital tooth small, projecting outward, little advanced. Antero-lateral margin furnished with two large lobes, the first hepatic, the second branchial and more prominent, and a curved spine at the lateral angle; a much smaller postero-lateral spine. Of the dorsal tubercles two pairs are behind the rostral horns, followed by a transverse row of 5; about 7 large tubercles on the branchial region, and 2 side by side on the intestinal region. Small, low tubercles on the cardiac and mesogastric regions, and single granules on the posterior and postero-lateral margins.

Basal antennal article subtriangular, with a broad, curved, pointed, apical tooth, less advanced than the rostrum, and a small tooth on outer margin. Outside of this there is another suborbital tooth on the carapace. Pterygostomian ridge tuberculate.

Merus of cheliped tuberculate, 2 or 3 tubercles on inner edge, 5 on outer edge. Carpus granulate. Hand smooth. Fingers little gaping, feebly crenulate and denticulate within, but with a tooth on the dactylus in old specimens. Legs thick, subcylindrical, nearly naked, short-spinous or granulate above in double series, tomentose below.

Color.—Dried specimens are cream-colored, mottled with carmine. In old specimens the carmine predominates. (Stimpson.)

Measurements.—Type male, length of carapace 34.8, greatest width 42.4 mm. (Stimpson.) Male (Panama), total length 13.3, total width 15 mm.

Range.—West coast of Mexico (from Cape St. Lucas) to Panama.

Material examined.—

Cape St. Lucas: John Xantus, collector; received from Mus. Comp. Zoöl.; two males, one female, cotypes (23178), 13 males, 13 females (1 ovig.), cotypes (1228, M. C. Z.).

Panama; Captain Field; 1 male (Phila. Acad.).

MITHRAX (MITHRAX) SINENSIS Rathbun

Plate 151, figs. 3 and 4; plate 260

Mithrax sinensis RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 266, pl. 38, fig. 2 (type-locality, Gulf of California, 17 fathoms, *Albatross* station 3002; holotype, Cat. No. 16065, U. S. N. M.).

Diagnosis.—Three spines on basal segment of antenna. Three antero-lateral branchial prominences, subacute, scarcely spinous. Three or four tubercles on anterior margin of arm.

Description.—Carapace ovate, a little longer than broad, covered with low tubercles some of which bear one or two granules; cervical and cardiac groove deep. Edge of marginal prominences granulate. Rostral lobes short, broad, arcuate, separated by a narrow U-shaped sinus. Besides the preorbital lobe, the orbit has 2 small teeth above, a well-marked outer lobe and 2 strong teeth below, outside the antenna. Antero-lateral protuberances behind the orbit 4, the last one at the lateral angle, simple and acute, the others lobiform with subacute tips, but subdivided into 2 or 3; the first or hepatic lobe is the most prominent, the next lobe is the widest. A postlateral tubercle is present. In a dorsal view, a row of subbranchial spines is partially visible.

Basal antennal joint tridentate, all the teeth visible from above, the 2 outer teeth subequal, the one at the outer angle well behind the rostrum, the tooth at base of second joint small. Two subhepatic granules.

Chelipeds of adult male much longer and heavier than legs. Merus tuberculous and spinous, 3 or 4 spines along the inner margin, 5 or 6 along the outer, 2 rows of spines or tubercles on upper surface, one row on outer surface. Carpus granulate. Manus smooth, inflated. Fingers short, stout, gape of male short, a small, acute tooth near base of dactyl, both fingers crenulate, the propodal finger throughout, the dactyl from tip to tooth. Legs furnished with fine, scattered hairs and above, with spines.

Color.—In alcohol reddish; hands of a deeper hue.

Measurements.—Male (21951), length of carapace 13, width between tips of lateral spines 12.4, width across subbranchial regions 12.9 mm.

Range.—Gulf of California. Depth, 7 to 17 fathoms.

Material examined.—See table, page 420.

MITHRAX (MITHRAX) LAEVIMANUS Desbonne

Plate 261

Mithrax laevimanus DESBONNE, in Desbonne and Schramm, Crust. Guadeloupe, 1867, p. 7, pl. 1, figs. 1 and 2 (type-locality, Guadeloupe; cotype in Paris Mus.).

Mithrax lævimanus A. MILNE EDWARDS, Crust. Rég. Mex., 1875, p. 94, pl. 21, figs. 2–2 *b*.

Material examined of Mithrax sinensis

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	° ′ ″	° ′ ″									
Gulf of California, Mexico: San Esteban Island	25 02 15	110 43 30	17	S. Sh		1911		*Albatross*	1♂	55700	
Off San José Island, Lower California.						Mar. 17, 1889	3002	do	1♂	16065	Holotype.
Off Santa Cruz, Lower California.	24 22 30	110 19 30	8	brk. Sh		Apr. 30, 1888	2824	do	3♂ 3♀	21951	
Do	24 22 15	110 19 15	7	brk. Co		do	2825	do	1♀	21952	
Off Cerralvo Island, Lower California.	24 12 00	109 55 00	9.5	Sh		do	2826	do	1♂	21953	
Do	24 11 45	109 55 00	10	Sh		do	2827	do	1♂ 1♀	21954	
Do	24 11 30	109 55 00	10	Sh		do	2828	do	2♂ 2♀	21955	

Diagnosis.—Three spines on basal article of antenna. Lateral spines of carapace simple. A tubercle on inner margin of wrist.

Description.—Resembles *M. hispidus;* the carapace smooth, and having only a few rounded prominences, but narrower; the front also is narrower and much more produced. Preorbital projections rounded. The basal article of antenna bears three blunt spines, one below insertion of next article, one stronger at antero-external angle, the third equally large at antero-internal angle. Orbital border with only three tubercles. Lateral margins armed with five almost cylindrical spines, which are simple and directed almost forward; the first and fifth are smallest; the fifth is post-lateral. Three strong projections on branchial regions. Wrist with a large tubercle on inner margin; otherwise the feet resemble those of *M. hispidus.* Sternal plastron deeply hollowed anteriorly for seventh abdominal segment; sixth abdominal segment very wide in its anterior part. Merus of outer maxillipeds longer and much less deeply cut at its inner angle than in *M. hispidus.*

Color.—Carapace a violet brown; claws and feet spotted with a wine-colored violet (Desbonne). The spots persist indefinitely in the preserved specimen.

Measurements.—Male, type, length of carapace with rostrum 71, width without spines 76; distance across front and orbits 22 mm. (Desbonne).

Range.—Porto Rico; Guadeloupe.

Material examined.—

Porto Rico; Gundlach, collector; 1 small male (Cat. No. 4790, Berlin Mus.).

Guadeloupe; 1 male (Paris Mus.).

MITHRAX(?) LEUCOMELAS Desbonne

Mithrax leucomelas DESBONNE, in Desbonne and Schramm, Crust. Guadeloupe, 1867, p. 11 (type-locality, Guadeloupe; type not extant).

Diagnosis.—Carapace, one-fourth longer than wide, without spines or lateral angle.

Description (translated from Desbonne).—Carapace depressed, rugose, without spines, a little longer than wide, subtriangular; antero-lateral borders slightly denticulated: lateral and posterior angles of the carapace rounded, not spinous. Rostrum very small, horizontal, bifid. Orbits directed forward and outward, a spine on the outer border and two on the inner border (one superior and the other inferior). The eyes fold in a postforaminal cavity. The inner antennae are directed forward and separated by a spiniform prolongation. The outer antennae have the first segment well developed, fused with the front and forming part of the walls of the orbits. Abdomen composed of seven articles in both sexes.

Chelipeds equal, a little more developed than the legs and one and one-fourth times as long as the carapace; naked and smooth. Fingers broad, gaping, ending in a deep spoon with sharp and denticulated edges and a bunch of hairs at the bottom. First leg same length as cheliped, the other three legs successively diminish in length; dactyls with 4 or 5 spines below.

Color.—White and black in large spots.

Measurements.—Type (sex not given), length of carapace 20, width 16 mm.

Habitat.—On the rocky shores of Guadeloupe; found at Moule (rare).

Remarks.—Nothing is known of this species except the original description by Desbonne. Schramm himself could not find the specimens described.

MITHRAX, species indeterminable

Locality.—Valparaiso Bay, Chile; 25 fathoms; C. E. Porter, collector; one specimen in too poor condition for determination or description, the genus alone being certain. Specimen returned to sender.

Subgenus MITHRACULUS

Carapace with conspicuous, smooth, oblique, branchial sulci. Rostral horns very short, shorter than wide, truncate. Minor teeth of orbit tuberculiform, inconspicuous.

MITHRAX (MITHRACULUS) SCULPTUS (Lamarck)

Plate 152

Cancellus rugosus, pedibus hirtis PETIVER, Pteri-graphia Americana, 1715, No. 368, pl. 20, fig. 6.

Araneus marinus SEBA, Thesaurus, vol. 3, 1758, p. 49, pl. 19, figs. 22 and 23.

Maia sculpta LAMARCK, Hist. Anim. sans Vert., vol. 5, 1818, p. 242 (type-locality not given; type in Paris Mus.?); ed. 2, 1838, p. 436.

Mithrax sculptus MILNE EDWARDS, Mag. de Zool., vol. 2, 1832, pl. 5; Hist. Nat. Crust., vol. 1, 1834, p. 322.—RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 271, and synonymy.—GUNDLACH and TORRALBAS, An. Acad. Habana, vol. 36, 1899 (1900), p. 330, text-fig.; reprint, 1917, p. 17, pl. [4], fig. 9.

Mithraculus coronatus WHITE, List Crust. Brit. Mus., 1847, p. 7 (part); not *Cancer coronatus* Herbst.

Mithrax minutus SAUSSURE, Mém. Soc. Phys. de Genève, vol. 14, 1857, p. 425, pl. 1, fig. 1 (type-locality, Antilles; type in Geneva Mus.).

Mithraculus sculptus STIMPSON, Amer. Journ. Sci., vol. 29, 1860, p. 132.—A. MILNE EDWARDS, Crust. Rég. Mex., 1875, p. 105, pl. 20, fig. 2.

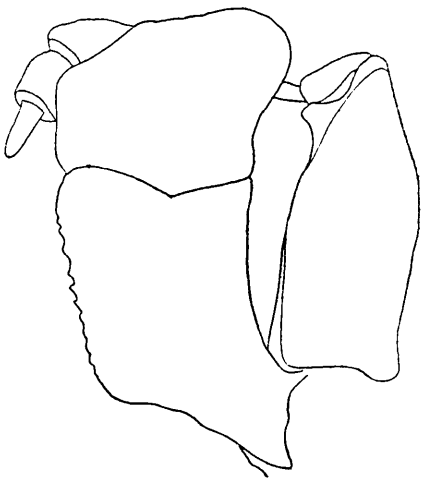

FIG. 125.—MITHRAX (MITHRACULUS) SCULPTUS, MALE (14058), MAXILLIPED, × 11.8

Diagnosis.—Posterior two-thirds of carapace nodose. Four antero-lateral lobes. Wrist smooth, non-dentate. Color greenish or bluish.

Description.—Carapace broader than long, with arcuate margins. Front broad, little advanced, formed of two shallow lobes separated by a narrow notch. Inner orbital angles obtuse and slightly produced. The orbital border bears three tubercles—one small superior, one external, the other inferior. Basal article of antenna very wide, much expanded outwardly, forming a part of floor of orbit; its antero-external angle is tuberculiform and scarcely more advanced than superior inner orbital angle. Posterior two-thirds of the carapace nodose; branchial regions crossed by oblique sulci, the intervening elevations being broken up into irregular lobulations. Antero-lateral margins cut into four rounded lobes, which in the young are more or less pointed. Carapace and chelipeds naked and shining.

Chelipeds enlarged in the male; the arm has two spiniform tubercles in front; carpus smooth and round; hand compressed; dactylus as long as palm; fingers widely gaping, each provided with a large tooth, that is near the base in the dactylus, but in the middle of the gape in the pollex; in the female the fingers gape less and are without large

teeth; tips widely spooned. Ambulatory legs somewhat spinous and covered with a brush-like coating of stout and slender setae.

Color.—Olive green, sage green, or bluish green; tips of fingers and legs white. "Back pale olive green, growing darker forward; claws and under part of body rich uniform olive green. Tips of pincers whitish. Raised places on back darker than the depressions. Legs covered with whitish mud, hairs yellowish." (Henderson).

Measurements.—Male (15208), entire length 23, width 26.4 mm.

Habitat.—On sand, shell, grass and mud bottom. Abundant on coral reefs. Under stones at low tide.

Range.—Bahamas and Miami, Florida, to the Abrolhos Islands, Brazil; to a depth of 30 fathoms.

Material examined.—

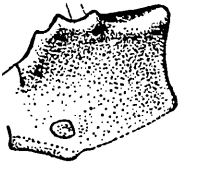

FIG. 126.—MITHRAX (MITHRACULUS) SCULPTUS, MALE (14058), BASAL ANTENNAL ARTICLE, × 5

Bahamas; 1859; Dr. H. Bryant; 1 ovigerous female (53069), received from Boston Society of Natural History.

Green Turtle Cay, Bahamas; E. A. Andrews; 2 males (20709).

Abaco Island, Bahamas; 1886; *Albatross;* 1 male (16304).

New Providence Island, Bahamas; 1886; *Albatross;* 7 males, 4 females (16310).

Nassau, Bahamas; 1886; *Albatross;* 1 young (11412).

Miami, Florida; G. M. Gray; 1 male (42133).

Cape Florida, Florida; 1884; Edward Palmer; 4 males, 5 females, 2 young (13892).

Biscayne Bay, Florida; 1901; J. E. Benedict; 6 specimens (25565).

Ragged Key, Florida; on coral reef; May, 1913; J. B. Henderson; 1 male, 1 female (46047).

Key Largo, Florida; 1 fathom; grass; H. Hemphill; 1 male (14050).

Rodriguez Creek, Florida; 1884; Edward Palmer; 2 males, 1 female (13900).

Indian Key, Florida; H. Hemphill; 10 males, 3 females, 1 young (14058).

Key Vaccas, Florida; on banks, low tide; H. Hemphill; 1 male (15087).

Knights Key, Florida; H. Hemphill; 8 males, 2 females (15085).

Off Sombrero, Florida; April 2; William Stimpson; 1 male, 3 females (young) (1987, M. C. Z.); "*M. coronatus*" (A. Milne Edwards).

Big Pine Key, Florida; H. Hemphill; 1 male (15086).

Bird Key, Florida; April 8, 1889; *Grampus;* 13 males, 18 females (15208).

Key West, Florida: H. Hemphill; 150 specimens (13816). Low tide, under stones; H. Hemphill; 1 ovigerous female (46966). 1884;

Albatross; 1 male, 1 female (16303). J. S. Kingsley collection; 5 males, 5 females (53058); received from Boston Society of Natural History. William Stimpson; 1 young male (1989, M. C. Z.).

Woman Key, Florida; William Stimpson: 2 females (1970, M. C. Z.). 2 males, 1 female (young) (1988, M. C. Z.); "*M. coronatus*" (A. Milne Edwards).

Gulf Stream, Florida; dredged, 15 fathoms; April 19; William Stimpson; 1 young male (1986, M. C. Z.); "*M. coronatus*" (A. Milne Edwards).

Sand Key Reef, Florida; May, 1911; J. B. Henderson; 1 male (46967).

Bush Key, Tortugas; June, 1921; Paul Bartsch; 8 males, 8 females (7 ovigerous), 1 young (56217).

Dry Tortugas, Florida: 1884; Edward Palmer; 9 males, 18 females (13891), 25 specimens (13564). J. S. Kingsley collection; 2 males, 1 female, 3 young (53066); received from Boston Society of Natural History. Growing on corals in moat; T. W. Vaughan; 1 male (50004).

Dry Tortugas Reefs, Florida; J. B. Henderson; 1 female (46874), 2 males, 4 ovigerous females (46968).

Belize, British Honduras; Harry J. Huwe, S. J.; 1 male (50952).

Spanish Caye, British Honduras; common among the corals; W. A. Stanton, S. J.; 1 male, 1 female (22597).

Swan Islands, Caribbean Sea; February, 1887; C. H. Townsend; 2 males, 1 female (13984).

Old Providence Island, Caribbean Sea; 1884; *Albatross;* 1 male, 1 female (16199).

Cuba; 1914; *Tomas Barrera* Exped. (Henderson and Bartsch): Cape San Antonio; May 25; 1 male (48704). Reef, Cape San Antonio; caught by copper sulphating of reef; 1 specimen (48705). Ensenada de Cajon, off Cape San Antonio; May 22; 1 female (48703). Reef Lavesos, opposite Cayo Lavesos; coral sand and rock; June 2; station 14; 3 males, 1 female (48706). Bahia Honda; 2 to 12 fathoms; mud and coral; June 4; station 15; 1 male (destroyed). Cabañas; June 8 and 9; station 16: Sand, shell, grass to mud bottom; 10 males, 3 females (48662); caught by copper sulphating on reef; 1 male (48767). Esperanza; May 11; stations 1 and 2; 7 males, 23 females (48656).

Mariano beach, Havana, Cuba; M. S. Roig; 1 male (53344).

Jamaica: March 1–11, 1884; *Albatross;* 4 males, 1 female (15821). 1910; E. A. Andrews; 2 males (43067).

Bogue Islands, Jamaica; from sponge on mangrove roots; August 10, 1910; C. B. Wilson; 1 female (43071).

Montego Bay, Jamaica; July 12, 1910; C. B. Wilson; 3 males, 1 female (43070).

Montego Bay Point, Jamaica; June 28, 1910; E. A. Andrews; 1 male, 1 female, 1 young (43068).

Umbrella Point, Jamaica; on coral rocks; July 14, 1910; E. A. Andrews; 1 male, 2 females (1 ovigerous) (43069).

Boqueron Bay, Porto Rico; January 25–28, 1899; *Fish Hawk;* 1 male, 7 young (24402).

Guanica Bay, Porto Rico; January 28, 1899; *Fish Hawk;* on coral reef; 2 males, 3 females (24403).

Reefs at Guanica, Porto Rico; January 29, 1899; *Fish Hawk;* 5 males, 8 females (24404).

Ponce reefs, Porto Rico; January, 30, 1899; *Fish Hawk;* 8 males, 1 female, 2 young (24405).

Ponce, Porto Rico; January 30 to February 1, 1899; *Fish Hawk;* 6 males, 7 females (24406).

Playa de Ponce Reef, Porto Rico; February 1, 1899; *Fish Hawk;* 8 males, 7 females, 2 young (24407).

Arroyo, Porto Rico; February 3, 1899; *Fish Hawk;* on Lighthouse Reef; 1 male, 1 female, 2 young (24408).

Arroyo, Porto Rico; February 3 and 4, 1899; *Fish Hawk;* 3 males, 3 females (24409).

Caballo Blanco Reef, Vieques Island, Porto Rico; February 7, 1899; *Fish Hawk;* 1 male (24410).

Ensenada Honda, Culebra Island, Porto Rico; February 9 to 11, 1899; *Fish Hawk;* 50 males, 50 females, 10 young (24411); 1 male (46875).

Fajardo, Porto Rico; February 17, 1899; *Fish Hawk;* 4 males, 5 females (24212).

St. Thomas; 1884; *Albatross;* 95 specimens (7650).

St. Thomas; 1915; C. R. Shoemaker; gift of Carnegie Institution: From piles; 1 female (50383). French Bay; ½ to 2½ fathoms; July 5; station 6; 2 males, 1 female (50381, 53759). Gregerie Bay; 1½ to 2¾ fathoms; July 7; station 7; 5 males, 4 ovigerous females, 1 young (50384). Drift Bay, Water Island; 1½ to 2½ fathoms; July 15; station 11; 1 male (50382).

Antigua; 1918; Barbados-Antigua Expedition, Univ. Iowa: English Harbor; 1 male (Mus. S. U. I.). Pillars of Hercules; 14 males, 6 females (4 ovigerous) (Mus. S. U. I.).

Barbados; May 8, 1890; W. H. Brown, U. S. Eclipse Expedition to Africa; 2 females (14885).

Barbados; 1918; Barbados-Antigua Expedition, Univ. Iowa: Under sea anemone; 3 males, 1 female (Mus. S. U. I.). Pelican Island; 4 males (Mus. S. U. I.).

Curaçao; rifwater; ½ fathom; March 3. 1905; J. Boeke; 1 female (Leiden Mus.).

Aruba, Curaçao; 1905; J. Boeke: Paarden Bay; 1 fathom; coral rocks; March 8; 1 male, 1 young (Leiden Mus.). Lagoon; shallow water; among algae; August 8; 1 young (42974).

Caracas Bay, Curaçao; 1920; C. J. van der Horst; 3 males, 1 female (Amsterdam Mus.).

Spanish Port, Curaçao; April 10, 1920; C. J. van der Horst; 1 male (56866).

Brazil; off the Abrolhos Islands; 30 fathoms; 1872; U. S. C. S. S. *Hassler;* 1 young female (1990, M. C. Z.); "*M. coronatus*" (A. Milne Edwards).

MITHRAX (MITHRACULUS) CORYPHE (Herbst)

Plate 153

Cancer coronatus Herbst, Natur. d. Krabben u. Krebse, vol. 1, 1785, p. 184, pl. 11, fig. 63 (type-locality not given; type not extant). Not Seba, Thesaurus, vol. 3, 1758, pl. 22, fig. 6; nor *Cancer coronatus* Molina, 1782.

Cancer coryphe Herbst, Natur. d. Krabben u. Krebse, vol. 3, pt. 2, 1801, p. 8 (type-locality not given; type not extant).

Mithraculus coronatus White, List Crust. Brit. Mus., 1847, p. 7 (part).—A. Milne Edwards, Crust. Rég. Mex., 1875, p. 106, pl. 20, fig. 1.

Mithrax sculptus Desbonne and Schramm, Crust. Guadeloupe, 1867, p. 9. Not *M. sculptus* Lamarck.

Mithrax (*Mithraculus*) *coronatus* Miers, Journ. Linn. Soc. London, vol. 14, 1879, p. 667.

Mithrax coronatus Miers, *Challenger* Rept., Zool., vol. 17, 1886, pp. 87 and 89.

Mithrax coryphe Rathbun, Ann. Inst. Jamaica, vol. 1, 1897, p. 11.

Diagnosis.—Carapace a third wider than long, everywhere nodose. Three antero-lateral lobes. Wrist nodose.

Description.—Carapace very wide, about one-third wider than long. Rostrum small, with 2 truncate teeth separated by a V-sinus. Behind the horns 2 sharp granules. Gastric and cardiac regions roughened by a few, regularly placed nodules. Branchial regions crossed obliquely by 3 deep furrows, forming 3 oblique elevations; the two anterior are entire or nearly so, the posterior broken into 2 rounded nodules. Antero-lateral margins armed with 3 smooth, round, widely-spaced lobes. A small lobe on postero-lateral margin. The inner infra-orbital lobe is more advanced than the supra-orbital. Basal antennal joint subtriangular, a small, marginal lobe just outside base of antenna.

Chelipeds massive; arm bilobed on inner margin, 4- or 5-lobed on outer margin, a few tubercles on upper surface and one at distal end of lower surface; wrist obscurely nodose; palm broad; fingers deflexed, widely gaping in the old, a single tooth near base of dactyl, edges of spooned tips crenulate. Legs more or less rough and fringed with coarse setae; merus joints of first two legs armed with two teeth below; carpus joints of first three legs spinous above.

Color.—Very prettily and finely mottled green and white. Underside chiefly white. Lower part of chelipeds white. Dactyls of legs salmon pink with white tips.

Measurements.—(21957), entire length of carapace 20, width 26.6 mm.

Habitat.—In cavities of corals, rocks, and sponges; on sand, shell, grass to mud bottom.

Range.—Bahamas and Miami, Florida to São Paulo, Brazil. Shallow water to 30 fathoms.

Material examined.—

Abaco Island, Bahamas; 1886; *Albatross:* 1 male, 2 females (1 ovigerous) (11374).

Miami, Florida; G. M. Gray; 1 male (42134).

Off Biscayne Key, Florida; 16–34 feet; May 29, 1912; Paul Bartsch; 1 male, 1 female (45628).

Indian Key, Florida; H. Hemphill; 2 males, 1 female (15083).

Key West, Florida: 1885; H. Hemphill; 6 males, 8 females (15082). C. T. Maynard; 1 ovigerous female (53059); from Boston Society of Natural History. J. S. Kingsley collection; 1 male, 1 ovigerous female (53070); from Boston Society of Natural History.

Sand Key Reef, off Key West, Florida; May, 1911; J. B. Henderson; 1 male (46962).

Cuba; 1914; *Tomas Barrera* Expedition, Henderson and Bartsch: On reef flat between Cayo Hutia and the little Cayo northeast of light; 1 male (48766). Cabañas; Sand, shell, grass to mud bottom; June 8 and 9; 5 males (48663), caught by copper sulphating on reef; 2 males (48764, 48765).

Jamaica: T. H. Morgan; 1 female (17210). Kingston Harbor; 1896; F. S. Conant; 1 male (19588).

Puerto Real, Porto Rico; January 27, 1899; *Fish Hawk;* 1 young female (24394).

Boqueron Bay, Porto Rico; January 28, 1899; *Fish Hawk:* on coral reef; 1 male (24393).

Reefs at Ponce, Porto Rico; January 30, 1899; *Fish Hawk;* 1 male, 2 females (24395).

Playa de Ponce reef, Porto Rico; February 1, 1899; *Fish Hawk:* 3 males, 7 females, 1 young (24396).

Arroyo, Porto Rico; February 3, 1899; *Fish Hawk;* 3 males, 2 females (24202).

Ensenada Honda, Culebra Island, Porto Rico; February 9, 1899; *Fish Hawk;* 1 male, 1 young (24398).

St. Thomas: 1884; *Albatross;* 12 specimens (16200). French Bay, ½ to 2½ fathoms; July 5, 1915; station 6; 2 males, 1 ovigerous female (50387, 53760).

Antigua; 1918; Barbados-Antigua Expedition, Univ. Iowa: Pillars of Hercules; 6 males, 7 females (4 ovigerous) (Mus. S. U. I.). Fort Barclay; July 9; 1 male (Mus. S. U. I.).

Barbados; 1918; Barbados-Antigua Expedition, Univ. Iowa; Pelican Island; 2 males, 1 female (Mus. S. U. I.); tide pool, May 11, 1 male, 2 ovigerous females (Mus. S. U. I.). Barbados; on shore, and from coral head, and under sea anemones; 3 males, 11 females (5 ovigerous), 1 young (Mus. S. U. I.).

Coral reef, Colon, Panama; May 2, 1911; Meek and Hildebrand, Smithsonian Biological Survey; 1 ovigerous female (44186).

Cartagena, Colombia; Colegio de San Pedro Apostol; 1 male (53411).

Caracas Bay, Curaçao; April and May, 1920; C. J. van der Horst; 1 male, 3 young (56375), 2 males, 2 young (Amsterdam Mus.).

West Point, Curaçao; May 14, 1920; C. J. van der Horst; 3 young (Amsterdam Mus.).

Balata Bay, Huevos Island, Trinidad; January 29; W. O. Crosby; 1 young female (55699).

Brazil; 1876–1877; Richard Rathbun, Hartt Explorations: Fernando Noronha; 1 male, 1 female (19948). Pernambuco; 1 male (41426). Rio Formoso, Pernambuco; 1 male, 1 female (19947). Mar Grande, Bahia; 2 males (19949).

Brazil; 1899; A. W. Greeley, Branner-Agassiz Expedition: Rio Goyanna stone reef; 2 males (Stanford Univ.). Pernambuco stone reef, at Ilha de Nogueira; July 10; 3 males (25762). Boa Viagem stone reef; 2 females (Stanford Univ.). Maceio coral reef, Alagôas; July 22, 23, 26; 11 males, 4 females (25763).

Abrolhos Islands, Brazil; December 27, 1887; *Albatross;* 8 males, 6 females (21957).

Ilha Victoria, São Paulo, Brazil; 1906; Fr. Günther; 1 male (47831), received from H. von Ihering.

MITHRAX (MITHRACULUS) DENTICULATUS Bell

Plate 154, figs. 2 and 3

Mithrax denticulatus Bell, Proc. Zool. Soc. London, vol. 3, 1835 (1836), p. 172 (type-locality, Galapagos Islands, under stones; type not extant); Trans. Zool. Soc. London, vol. 2, 1836, p. 54, pl. 11, fig. 2.—Nobili, Boll. Mus. Zool. Anat. Comp. R. Univ. Torino, vol. 16, 1901, No. 415, p. 31.

Mithraculus denticulatus White, List Crust. Brit. Mus., 1847, p. 7.—A. Milne Edwards, Crust. Rég. Mex., 1875, p. 109, pl. 23, fig. 4.

Diagnosis.—Carapace nearly half wider than long. Two lobes and one spine on antero-lateral margin. Two lobes of basal antennal segment equally advanced. Inner edge of wrist laminate.

Description.—General shape same as in *M. coryphe.* Rostrum similar. Tubercles immediately behind rostral horns larger than in

coryphe. Five of the smallest gastric tubercles form a transverse row. Oblique branchial grooves deep, but more longitudinal than in *coryphe*. Antero-lateral projections consisting of two lobes followed by a spine at the lateral angle; all are hooked forward at the tip. A postlateral spine is followed by two dorsal tubercles in the same line. Anterior edge of basal segment of antenna deeply bilobed, lobes equally advanced with the rostrum.

Chelipeds wider than in *coryphe;* arm with only one lobe, which may be feebly bilobed, on inner margin, 4 spines on outer margin, and on distal half two or three tubercles above and one below; 6 well-marked tubercles on dorsal surface of wrist and 2 on inner edge, which is laminate; manus short and high; immovable finger horizontal; interdigital sinus triangular; a tooth at proximal two-fifths of dactylus, prehensile edges crenulate at the tips. Legs very rough with spines above and furnished with coarse setae; merus joints with from 1 to 3 tubercles below, of last pair with tubercles also on posterior surface.

Color.—Plumbeous, passing into fuscous (Bell).

Measurements.—Male (3209), entire length of carapace 13, width including spines 19 mm.

Range.—Lower California to Ecuador.

Material examined.—

Cape St. Lucas; John Xantus; 1 male, 1 young female (1241, M. C. Z.).

Panama; Capt. J. M. Dow; 2 males, 1 female (3209).

Perico Island, Panama; October 26, 1904; *Albatross;* 1 male, 1 female (33388), 1 male (M. C. Z.).

MITHRAX (MITHRACULUS) NODOSUS Bell

Plate 155

Mithrax nodosus Bell, Proc. Zool. Soc. London, vol. 3, 1835, p. 171 (type-locality, Galapagos Islands; type not extant); Trans. Zool. Soc. London, vol. 2, 1836, p. 53, pl. 11, figs. 1–1*b*.

Mithraculus nodosus White, List Crust. Brit. Mus., 1847, p. 7.—A. Milne Edwards, Crust. Rég. Mex., 1875, p. 108, pl. 23, figs. 5–5*d*.

Mitraculus ruber Cano, Boll. Soc. Nat. Napoli, ser. 1, vol. 3, 1889, p. 185. Not *Mithraculus ruber* Stimpson.

Diagnosis.—Three large lobes on antero-lateral margin. Posterior part of carapace eroded. Inner edge of cheliped (to middle of manus) laminate.

Description.—Allied to *M. coryphe*. Carapace narrower, rostral teeth narrower and more deeply separated; the pair of tubercles behind them subacute; 7 small, gastric tubercles in 2 transverse rows of 2 and 5; inner supra-orbital angles narrow, lobiform, prominent; outer angles not dentiform nor pronounced; 3 antero-lateral lobes larger than in *coryphe*, the first one close to the orbital angle; a

small, acute, postero-lateral tooth. Carapace along the posterior and postero-lateral borders granular and eroded. Oblique grooves on the branchial region shallower than in *coryphe*.

A low tubercle on the basal antennal segment directly behind the insertion of the next segment. The merus of the outer maxilliped appears very short, being overlaid by a prolongation of the inner two-thirds of the ischium.

Inner margin of arm of cheliped very thin and sharp, unilobate; outer margin bilobate, the lobes coarse, like those of the carapace; a tubercle on upper surface. Wrist rough with tubercles, its inner edge produced, thin, truncate and entire. Hand high, upper edge proximally sharp; immovable finger horizontal; gape in the adult male moderate; a single tooth at the basal two-fifths of the dactylus; crenulation of finger tips feeble.

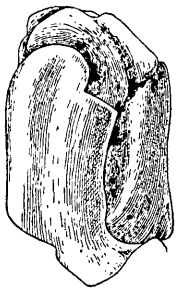

FIG. 127.—MITHRAX (MITHRACULUS) NODOSUS, MALE (25673), MAXILLIPED, × 5.4

Legs coarsely spinose; from each spine proceeds a tuft of coarse setae; tufts of slenderer setae elsewhere.

Color.—Brown above; hands dark plumbeous; it is paler beneath (Bell).

Measurements.—Male (25673), entire length of carapace 23.2, width 29.4 mm.

Habitat.—Under stones at low water (Bell).

Range.—Galapagos Islands; Chile (Miers).

Material examined.—

James Island, Galapagos Islands; *Hassler*; 5 males, 4 females (1983, M. C. Z.).

Albemarle Island, Galapagos Islands; 1898–1899; Hopkins Stanford Galapagos Expedition: Black Bight; January 9; 2 males (Stanford Univ.). Tagus Cove, on reef north of Tagus Hill; March 16; 1 male, 1 female, 1 young (25673), 2 males, 1 female, 1 young (Stanford Univ.).

Chatham Island, Galapagos Islands; Dr. W. H. Jones, U. S. N.; 1 male, cast shell (13873).

Hood Island, Galapagos Islands; April 7, 1888; *Albatross;* 1 female (21959).

Charles Island, Galapagos Islands: April 8, 1888; *Albatross;* 1 female (21958). *Hassler;* 3 males (1 soft shell), 3 females (1981, 1982, M. C. Z.).

Duncan Island, Galapagos Islands; April 13, 1888; *Albatross;* 2 females (21960).

MITHRAX (MITHRACULUS) FORCEPS (A. Milne Edwards)

Plate 156

Mithraculus forceps A. Milne Edwards, Crust. Rég. Mex., 1875, p. 109, pl. 23, fig. 1 (type-locality, Guiana; type in Paris Mus.).

Mithraculus hirsutipes Kingsley, Proc. Boston Soc. Nat. Hist., vol. 20 1879, p. 147 (type-locality, Key West, Florida; type not extant).

Mithrax forceps Miers, *Challenger* Rept., Zool., vol. 17, 1886, pp. 87 and 88.—Rathbun, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 269.

Mithrax hirsutipes Miers, *Challenger* Rept., Zool., vol. 17, 1886, p. 87.

Mithrax forceps hirsutipes Verrill, Trans. Conn. Acad. Arts and Sci., vol. 13, 1908, p. 409, text-fig. 42, pl. 24, figs. 4–6.

Diagnosis.—Ridges between sulci of carapace little subdivided. Four acute antero-lateral spines or teeth. Wrist smooth above. Color reddish or yellowish.

Description.—Carapace similar in shape to that of *M. sculptus*, comparatively smooth, large specimens with scattered punctures, small ones deeply sculptured. Three grooves run diagonally backward from near first, second, and fourth sinuses of lateral margin; of the intervening ridges thus formed, the two anterior are less broken up into lobules than in *M. sculptus*. Six or seven depressed tubercles along margin and on posterior part of branchial region, two or three along outer margin of hepatic region, and two pairs on frontal region directly behind lobes of rostrum. Median notch of front broadly V-shaped. Antero-lateral teeth four, acute, slender, separated by broad rounded sinuses, the first the shortest and in large specimens subacute, the remainder sharp and directed forward, the second usually the longest and largest. Sometimes a small postero-lateral tooth.

Arm with five spines or spiniform tubercles on upper (posterior) margin, two on upper face just within margin; on the inner (anterior) margin two prominent teeth. Carpus smooth, sometimes unarmed, often with a short spine or tubercle on inner margin anterior to inner angle, giving appearance of a double tooth. Fingers widely gaping in male; dactylus with a large tooth one-third distance from proximal end, or instead a few minute teeth; the pollex may have from one to three small teeth or tubercles in the middle. Ambulatory legs distinctly spiny and fine-hairy.

Color.—Chestnut or terra-cotta or uniform yellowish-brown, varying to dull yellow and to greenish-brown. Often there is a wide, pale yellow, median dorsal stripe, especially in the young, where also the legs are often banded. (Verrill.)

Habitat.—On rocky shores and reefs in crevices and living under stones and dead corals; also exposed, between tides and in shallow water. (Verrill.)

Measurements.—Male (25448), entire length 21, width 24.6 mm.

Range.—From Cape Hatteras, North Carolina, via Gulf of Mexico to Rio de Janeiro, Brazil. Bermuda. Shallow water to 30 fathoms.

Material examined.—See table, pages 434-437.

MITHRAX (MITHRACULUS) RUBER (Stimpson)

Plate 157

Mithraculus ruber STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 118 (type-locality, reef at Cruz del Padre, Cuba; type not extant).

Mithraculus nudus A. MILNE EDWARDS, Crust. Rég. Mex., 1875, p. 110, pl. 23, fig. 2 (type-locality, Guadeloupe; cotypes in Paris Mus.).

Mithrax ruber MIERS, *Challenger* Rept., Zool., vol. 17, 1886, p. 87.

Mithrax nudus MIERS, *Challenger* Rept., Zool., vol. 17, 1886, p. 87.

Diagnosis.—Dorsal sulci shallow. Three antero-lateral protuberances, all blunt in the old, the last one sharp in the immature. A small lobe on outer margin of basal antennal joint. One lobe on inner margin of arm.

Description.—Carapace of moderate width; surface naked (pubescent in the young), polished, and uneven. A few rounded prominences are on branchial region; some small depressed tubercles are arranged in transverse rows on gastric region, and larger ones occur on cardiac and branchial regions. The lateral protuberances are four, the first two blunt, the last two blunt in the old, sharp and spiniform in the immature, the third largest and most produced, the fourth postlateral; a tubercle on anterior slope of the second tooth, a spine in the interval between second and third. Frontal horns very short, thickened, upturned, blunt; interspace narrow, V-shaped. Behind the horns two small acute prominences. Margin of orbit thickened, especially the preorbital lobe; a small tooth on upper margin; outer angle very slightly projecting. Basal antennal joint rather narrow, with two lobes, one large and thick at antero-external angle and further advanced than preorbital lobe, the other small, on outer margin. Chelipeds strong; arm with a single lobe at proximal end of anterior margin, four spines on posterior margin, and two spines on upper surface; wrist almost smooth, its inner angle proximally situated and smoothly rounded. Hand with parallel margins; immovable finger convex beneath; fingers denticulate except at base; the movable finger in the full-grown male bears a strong tooth near its proximal third; fingers gaping. Ambulatory legs spinous and densely hairy, with fine and coarse hairs; merus of first three pairs with a tubercle on lower margin.

Color.—Carapace chestnut-red with some bluish posteriorly (Stimpson).

Measurements.—Female (24096), entire length 13, width 15.8 mm. The male type of *nudus* was much larger, 19 by 24 mm.

Range.—From Cuba to Barbados and Curaçao.

Material examined.—

Cabanas, Cuba; 2 to 25 fathoms; sand, shell, grass to mud bottom; June 8–9, 1914; station 16, *Tomas Barrera* Expedition, Henderson and Bartsch, collectors; 1 young (48748).

Mayaguez, Porto Rico; January 23, 1899; *Fish Hawk:* on coral reef; 1 male (24131).

Playa de Ponce Reef, Porto Rico; February 1, 1899; *Fish Hawk;* 2 young (24095).

Arroyo, on Lighthouse Reef, Porto Rico; 1899; *Fish Hawk;* 1 female, 1 young (24096).

St. Thomas; 1915; Clarence R. Shoemaker; gift of Carnegie Institution: French Bay; ½ to 2½ fathoms; July 5; station 6; 1 male (50380). Gregerie Bay; ½ to 2¾ fathoms; July 7; station 7; 1 young female (50379). St. Thomas Harbor; taken from sponges; July 11; 1 male, 2 females (50377). Drift Bay, Water Island; ½ to 2½ fathoms; July 15; station 11; 1 young (50378).

English Harbor, Antigua; shore; 1918; Barbados-Antigua Exped., Univ. Iowa; 1 female (Mus. S. U. I.).

Guadeloupe; 1 male, 1 female (Geneva Mus.). Two specimens, cotypes (Paris Mus.).

Barbados; 1918; Barbados-Antigua Exped., Univ. Iowa: Pelican Island, Barbados; 1 male, 1 young female (Mus. S. U. I.). Needham Point; May 18; 4 males, 1 immature female (Mus. S. U. I.). Off Needham Point; 84 fathoms; rocky; station 20; 2 males, 3 females (Mus. S. U. I.). Okra Reef; May 13; 6 males, 6 females, all small (Mus. S. U. I.). Barbados; some from coral heads; 13 males, 6 females (3 ovigerous), 3 young (Mus. S. U. I.).

Caracas Bay, Curaçao; C. J. van der Horst: In *Maeandrina;* April 7, 1920; 1 male, 3 young (56373). In sponge; May 3, 1920; 1 ovigerous female (56376).

MITHRAX (MITHRACULUS) AREOLATUS (Lockington)

Plate 154, fig. 1

Mithrax areolatus LOCKINGTON, Proc. California Acad. Sci., vol. 7, 1876 (1877), p. 71 [9] (type-localities, Port Escondido and San José Island, both in the Gulf of California; types not extant).

Mithraculus areolatus? STREETS and KINGSLEY, Bull. Essex Inst., vol. 9, 1877, p. 104.

Mithraculus areolatus KINGSLEY, Proc. Boston Soc. Nat. Hist., vol. 20, 1879, p. 146.

Mitraculus areolatus CANO, Boll. Soc. Nat. Napoli, ser. 1, vol. 3, 1889, p. 186.

Diagnosis.—Carapace deeply areolate. Three antero-lateral teeth, first and second obtuse, third slender and acute. Wrist prominently tuberculate.

Material examined of Mithrax (Mithraculus) forceps

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
North Carolina:	° ′ ″	° ′ ″			°F						
Off Cape Hatteras	35 21 00	75 21 30	16	gy. S. brk. Sh.		Oct. 19, 1884	2280	*Albatross*	4 y	41027	
Off Beaufort			30			Aug. 27, 1913		*Fish Hawk*	1	51002	
Fishing grounds, off Beaufort.	34 20 00 (Course E. 1 mile)	76 49 00	13.5	Co. S. Sh		Sept. 6, 1913	7943	do	5♂ 7♀	51105	
Do	34 21 30 (Course N. 1 mile)	76 50 30	13.75	Co. S. Sh		do	7944	do	7	51020	
25 miles E. SE. Lookout Lightship.						July 28, 1915		do	1 cheliped	50448	
Near Fishing Banks						Aug. 4, 1915		do	1♂	50454	
Off Cape Fear	33 42 45	77 31 00	17	S. P		Oct. 20, 1885	2616	*Albatross*	4	16211	
Do	33 38 00	77 36 00	15	gy. S. brk. Co.		do	2623	do	1♂ 1♀	11224	
Do	33 37 15	77 35 30	17	ers. yl. S. brk. Sh.		do	2618	do	2♂ 7 y	14017	
South Carolina:											
Near Charleston			1–12			Mar. 20, 1880		R. E. Earll	2♂ 1♀	3159	
15 miles southeast of Charleston.						Mar. 23, 1880		do	2♂ 1♀	5062	From a piece of coral.
									2♂	5823	
Florida:											
Miami								G. M. Gray	1♂	42132	
			Feet								
Off Biscayne Key			16–34			May 29, 1912		P. Bartsch	2 y	46873	
Cape Florida						1884		E. Palmer	1♀ 1 y	13928	
Biscayne Bay						1901		J. E. Benedict	1♂ 1♀	25566	
Ragged Keys						1901		do	1♂	25568	
Rodriguez Creek						1884		E. Palmer	2♂	16048	
Indian Key, along shore			low tide					H. Hemphill	2♂ 2♀	16046	
			Feet								
Hawk Channel	3⅛ miles N. ¾ E. of Sombrero Light.		11.5	rky		Jan. 27, 1903	7427	*Fish Hawk*	2♂	46942	
Do	1 mile N. NW. ½ W. of East Washerwoman.		16	rky		do	7428	do	1♂ 1♀	46943	
Do	½ mile SE. by S. of SE. end of Duck Key.		14	rky		do	7429	do	1♂ 1 ovig. ♀	46944	

		Fathoms								
Off Duck Key	Duck Key, N., 1¼ mile.	2.75	Co. Sh	69.5	Dec. 20. 1912	4	do	1♂	50449	
				°C						
Off Key West	Key West Light to E. Channel Bar Buoy, 71° 53′, to Beacon "A", 74° 46′.	5.25	co. S. Grs	20	Feb. 13, 1902	7278	do	2♂ 1♀	46872	
Key West					1885		H. Hemphill	{5 y 4♂ 2♀	15078 16047	
Do							H. E. Webster	1 y ♀	55698	From Boston Soc. Nat. Hist.
Do							C. T. Maynard	1♂	53060	Do.
West Channel, entrance to Key West.	Mid-channel Buoy bearing W. by S., ½ mile.	7.75	co. S	20	Feb. 13, 1902	7271	*Fish Hawk*	1 ovig. ♀	46939	
Off Northwest Channel	24 42 30 | 81 55 52	7.25	Co	20	Feb. 24, 1902	7293	do	2♂ 2♀	46911	
				°F						
Off Boca Grande	Boca Grande Light, N. NE., ⅜ E., 24½ miles, to NE. ¼ N., 20 miles.	12.5		68.5	Jan. 2, 1913	7796	do	6♂ 2♀	56224	
Eastern Dry Rocks					1884		E. Palmer	12♂ 11 ♀	16049	
Dry Tortugas							Lieut. Jacques	1♂ 1 y	53076	From Boston Soc. Nat. Hist.
				°C						
Off Cape Sable	E. end of Sawyer Key, S. ¼ W., 2¼ miles.	4.75	rky	22.5	Dec. 22, 1902	7390	*Fish Hawk*	1♂ 1 ovig. ♀ 2 y.	46940	
Off Charlotte Harbor	26 33 00 | 83 10 00	28	sdy	19.1	Apr. 2, 1901	7123	do	1♂	25593	
				°F						
Off Sarasota Bay, at anchor.	Sarasota Point, NE. by E., 9¼ miles.	(1)		65	Jan. 5, 1913	7801 (15)	do	1♂	56222	
				°C						
Highland section	27 49 30 | 83 00 00	7	hrd. & Co	14.6	Jan. 28, 1902	7257	do	1♂ 2♀	46938	
Do	27 55 30 | 83 11 30	13	Co. R	15.2	do	7253	do	2♂	46937	
Anclote section	28 08 30 | 83 10 00	10	rky. Co	13.5	Jan. 23, 1902	7231	do	2♂ 1♀	46812	
Do	28 01 30 | 83 08 00	11	rky	13.5	Jan. 23, 1902	7234	do	3♂ 4♀	46813	
Do	28 19 30 | 83 01 00	6.25	rky. Grs	12.5	Jan. 24, 1902	7239	do	8♂ 4♀ 1y	46936	1 with Rhizocephalid parasite.
Do					do	(2)		2♂	46805	
				°F						
Do	Anclote Light, E. ⅛ S., 14 miles.	8.5	Co	63.95	Jan. 11, 1913	20	do	1♂ 3♀	50455	
				°C						
St. Martins section	28 26 00 | 83 02 30	7.5	rky. Co	13	Jan. 15, 1902	7215	do	1♂ 1♀	46870	
Do	28 26 30 | 83 08 00	10	sdy. grassy	13.6	do	7216	do	2♂	46871	
Do	28 34 45 | 83 08 00	5.75	Co. R. G	12.5	do	7221	do	1♂ 4♀	46811	
North Key section	28 52 45 | 83 07 00	5.75	rky	16.1	Dec. 9, 1901	7209	do	1♂ 11♀	46810	
Do	28 54 00 | 83 30 30	11	R. Co. S	17	Nov. 28, 1901	7185	do	1 y	46868	
Do	28 55 30 | 83 02 00	4	rky	15.3	Dec. 9, 1901	7208	do	1♂	46848	

[1] Off beach.

[2] Station 7241 or 7242.

Material examined of Mithrax (Mithraculus) forceps—Continued

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
Florida—Continued.	° ′ ″	° ′ ″			°C						
North Key section	29 00 00	83 18 45	5.75	rky. Co	15.3	Nov. 28, 1901	7182	*Fish Hawk*	1♂ 1♀	46845	
Do	29 02 30	83 14 00	4.25	sdy	14.8	do	7181	do	1♀	46867	
					°F						
Off Cedar Keys	Cedar Keys Light, N. ¾ E., 21¾ miles.		5.75	Co	63.45	Jan. 11, 1913	21	do	1♂ 2 y	50450	
					°C						
Pepperfish Key section	29 18 00	83 37 00	8	rky	18	Nov. 21, 1901	7161	do	6♂ 8♀	46844	
Do	29 19 30	83 46 00	10	S. Co	18.3	Nov. 20, 1901	7158	do	2♂ 2♀ (1 ovig.)	46843	
Do	29 21 00	83 32 00	6.75	rky	16.7	Nov. 31, 1901	7160	do	1♀	46866	
Deadmans Bay section	29 32 00	83 58 30	10.5	Co	22.5	Nov. 7, 1901	7154	do	1♀	46865	
Do	29 32 30	83 50 00	9	R. Co	16.6	Dec. 6, 1901	7201	do	4♂ 4♀	46847	
Do	29 35 20	83 56 00	9.5	S. Co	23	Nov. 7, 1901	7153	do	6♂ 3♀	46809	
Do	29 39 30	83 53 10	7.5	S. Co	21.5	Nov. 7, 1901	7152	do	3♂ 2♀ 1 y	46808	
Do	29 43 40	83 49 45	5.25	Co	20.5	do	7151	do	7♂ 3♀	46807	
Aucilla section	29 44 09	84 06 30	7	R. Co	16.5	Dec. 5, 1901	7193	do	1♂ 1♀	46869	
Do	29 49 00	84 06 15	6	R. Co	15	do	7192	do	1♂ 2♀	46846	
Do	29 52 10	83 51 47	3	S. Co	20	Nov. 6, 1901	7147	do	1♂ 1♀	46806	
					°F						
Off Carrabelle	Carrabelle Light, NW. by N., 16 miles.		10.25		60.2	Jan. 16, 1913	23	do	1 y. ♀	50453	
Do	Carrabelle Light, N. by W., 14⅝ miles.		10		60.2	do	24	do	1 y. ♀	50452	
Southern States						1880		U. S. Fish Comm.	1♂	16061	
Caribbean Sea: Old Providence Island.						1884		*Albatross*	2	9130	
Porto Rico:											
Mayaguez Harbor						Jan. 20, 1899		*Fish Hawk*	1♂	24175	
Off Gallardo Bank	Tangent of Morillos de Cabo Rojo, E. SE. ¾ E., 9⅛ miles.		10	Co. S		Jan. 26, 1899	6076	do	1 y	24173	
Off Vieques Island	Point Mula Lighthouse, S. SW. ⅜ W., 5¾ miles.		14	Co. S		Feb. 8, 1899	6085	do	1♂ 1 y	24176	
Do	Culebritas Lighthouse, NE. ½ N., 10 miles.		15	Co		do	6091	do	1 y. ♀	24174	
Do	Culebritas Lighthouse, NE. ⅜ E., 7¼ miles.		16	Co		do	6092	do	3♂ 3♀ 5 y	24177	
Do	Point Mula Lighthouse, E. ½ N, 11¼ miles.		6	Co		do	6096	do	2♂ 3♀ 3 y	24179	

Off Culebra Island	Point Mula Lighthouse, SW. ¼ S., 10½ miles.		15.25	Co. S		do	6087	do	1♂ 1♀	24178	
Do	Culebritas Lighthouse, NE., 5¼ miles.		15	Co		do	6093	do	2♂ 2♀	24182	
Off Humacao	Village of Hueares, N. ½ W., 3 miles.		12.5	Co		do	6098	do	2♂ 4♀	24181	
Do	Village of Hucares, NW. ¾ W., 2¼ miles.		9.5	Co		do	6099	do	3♂ 4♀ 1y	24180	
St. Thomas						1884		*Albatross*	8	16197	
3 miles from St. Thomas, in fish pot.						July 8, 1915		C. R. Shoemaker	3♂ 1♀	50451	From Carnegie Institution.
Drift Bay, Water Island			0.5-2.5			July 15, 1915	11	do	1♂ 1♀	50392	
Barbados						1918		Barbados-Antigua Exped., Univ. Iowa.	2♂ 3y	Mus. S. U. I.	
Off Needham Point			84	rky		do	20	do	1 ovig. ♀	Mus. S. U. I.	
Curaçao:											
Fink Bay (New Port)			(3)	Co		July 18, 1905		J. Boeke	1♂	Leiden Mus.	
Curaçao						1884		*Albatross*	13	16198	
Do						Feb. 10–18, 1884.		do	1♂	19342	Color, green.
Spanish Water						Apr. 17, 1920		C. J. van der Horst.	3♂ 3♀ ovig	56855	
Aruba: Lagoon			(3)	Algae		Aug. 8, 1905		J. Boeke	1 ovig. ♀	Leiden Mus.	
Venezuela: Cumana								Capt. Couthouy	7♂ 1♀	1971, M.C.Z.	
Trinidad								W. O. Crosby	5♀ (3 ovig.)	53062	From Boston Soc. Nat. Hist.
Brazil:											
Natal, Rio Grande do Norte.						1899		Branner-Agassiz Exped.	2♂	Stanford Univ.	
Pernambuco stone reef at Ilha de Nogueira.						July 10, 1899		do	1♂	25759	
Rio Formoso, Pernambuco.						1876–1877		R. Rathbun, Hartt Explorations.	4♂ 2♀	19954	
Maceio coral reef, Alagôas.						July-Aug., 1899.		Branner-Agassiz Exped.	4♂ 6♀	25760	
Brazil						1899		do	1♂	25761	
Plataforma, Bahia						1876–1877		R. Rathbun, Hartt Explorations.	3♂ 1♀	19955	
Abrolhos Islands						Dec. 27, 1887		*Albatross*	2♂	21956	
Rio Janeiro									1	Geneva Mus.	
Bermuda						1876–1877		G. Brown Goode	60	43045	
Hungry Bay								F. G. Gosling	2♂ 2♀	25448	

[3] Shallow water.

Description (after Kingsley).—Carapace naked, depressed, deeply areolate, areolations less broken than in *M. sculptus*, punctate; a transverse row of five tubercles on the gastric region and two more acute ones on the outer posterior portion of each branchial region, two prominent tubercles at the base of the rostrum, one on each side of the median line. Rostrum short, outer margin of horns arcuate, inner straight. Orbits with one distinct fissure above, inner angle prominent, rounded; outer angle also rounded but less prominent; external hiatus a round opening. Antero-lateral margin with 3 teeth besides the external angle of the orbit; first and second teeth stout, prominent, obtuse, the second the larger; third tooth slender, acute, hooked forward; a small acute tooth on the postero-lateral margin behind the lateral angle. A tubercle on the subhepatic region beneath the first tooth of the antero-lateral margin. An oblique row of rounded tubercles running backward from the palatal region. Basal joint of antenna with two short blunt teeth.

Chelipeds small; posterior margin of merus 4-toothed, upper surface with one tooth, inner margin with a single rounded tubercle; carpus prominently tuberculate; hand smooth, inflated, cristate above at the base, a small depressed tubercle on the outer surface at the articulation with the carpus; fingers moderately gaping, denticulated at the extremity, a basal tooth on the dactylus in both sexes, but larger in male. Legs with spinous tubercles on the basal joints, becoming obsolete on the distal joints; dactyli strongly arcuate.

Color.—In spirits, light red (Lockington). Carapace and legs ochraceous yellow (Cano).

Measurements.—Male, cotype, length 16, width 18.5 mm. (Lockington); male, length 11, width 13.5 mm. (Kingsley); female, length 11.7, width 15 mm. (Kingsley).

Range.—San Diego, California; Gulf of California (type-locality); Pearl Islands, Bay of Panama (Cano).

Material examined.—San Diego, California (locality supposedly correct); 1 young specimen, dried (53961); gift of San Diego Society of Natural History.

MITHRAX (MITHRACULUS) CINCTIMANUS (Stimpson)

Plate 158

Mithraculus cinctimanus STIMPSON, Amer. Journ. Sci., vol. 29, 1860, p. 132 (*nomen nudum*); Ann. Lyc. Nat. Hist. New York, vol. 7, 1860, p. 186 (type-localities, Tortugas and St. Thomas; types not extant).—A. MILNE EDWARDS, Crust. Rég. Mex., 1875, p. 112, pl. 23, fig. 3.

Mithrax affinis DESBONNE in Desbonne and Schramm, Crust. Guadeloupe, 1867, p. 10 (type-locality, Guadeloupe; cotype in Paris Mus.).

Mithrax cinctimanus MIERS, *Challenger* Rept., Zool., vol. 17, 1886, p. 87.

Diagnosis.—Carapace longer than broad. Four antero-lateral teeth, either acute or tuberculiform. Two teeth on anterior margin of basal antennal joint.

Description.—Carapace longer than broad and covered, especially on posterior two-thirds, with small, rounded lobules or tubercles. Branchial regions obliquely sulcate. Rostral horns short, rather narrow, and widely separated. Inner angle of orbit prominent, acute. Antero-lateral margin with four small teeth, often tuberculiform, sharp-pointed in the old. Basal joint of antenna very broad, with an antero-external spine, barely exceeding upper preorbital tooth, and a tooth behind the next segment.

Arm tuberculous, two or three spiniform teeth on inner margin, outer margin tuberculous; wrist nearly smooth, two or three tubercles on inner margin; palm dilated; fingers gaping; a tooth on dactylus near its base; sometimes a smaller one on pollex near spoon; spoon-shaped tips long, crenulated. Ambulatory legs a little rough, sparsely hairy, hairs fine and chiefly on last three joints.

Color.—Yellowish, with a large brown spot covering a large part of the cardiac region. Claws and feet spotted with brown and white; often the dark shade forms a broad band on the hand, whence the specific name.

Measurements.—Female (13897), entire length of carapace 20.5, width 19.7 mm.

Range.—Bahamas and Florida Keys to West Indies and Curaçao.

Material examined.—

Green Turtle Cay, Bahamas; E. A. Andrews; 1 male (20708).

Cape Florida, Florida; 1884; Edward Palmer; 1 female (15084).

Biscayne Bay, Florida; 1901; J. E. Benedict; 1 male, 1 female (25564).

Elliotts Key, Florida; 1901; J. E. Benedict; 1 male (25570).

Carysfort Reef, Florida; 1884; Edward Palmer; 1 female (13897).

Rodriguez Creek, Florida; 1884; Edward Palmer; 1 male (14429).

Harbor Key, Florida; J. S. Kingsley collection; 1 male, 1 ovigerous female (53047); from Boston Society of Natural History.

North of Knight's Key Channel, Florida; 2 miles NE. by E. of Basin Bank; 8½ feet; rocky; January 22, 1903; station 7417, *Fish Hawk;* 1 female (46878).

Salt Pond Key, Florida; 1884; Edward Palmer; 1 male (14439).

Key West, Florida: 1885; H. Hemphill; 40 specimens (13830), 1 young (16062). 1884; *Albatross;* 4 males, 9 females (16194).

Eastern Dry Rocks, Florida; 1884; Edward Palmer; 1 male (14437).

Jamaica; T. H. Morgan; 1 specimen (17208).

Harris Point, west of Montego Bay, Jamaica; July 16, 1910; E. A. Andrews; 1 male (43007).

Umbrella Point, near Montego Bay, Jamaica; July 15, 1910; E. A. Andrews; 1 ovigerous female (43008).

Kingston Harbor, Jamaica; 1893; R. P. Bigelow; 1 male (17963).

Guanica Bay, Porto Rico; on coral reef; January 28, 1899; *Fish Hawk;* 1 male, 1 female (24203).

St. Thomas; 1884; *Albatross;* 4 specimens (16195).

Mosquito Bay, St. Thomas; 2 fathoms; July 21, 1915; station 12, Clarence R. Shoemaker; 1 male (50374), gift of Carnegie Institution.

Groote Bai, St. Martin; among stones and algae; August, 1905; J. Boeke; 1 ovigerous female (42977).

Simsons Bay Lagoon, St. Martin; shallow water; on coral rocks, inside sponges; September 7, 1905; J. Boeke; 1 male, 1 ovigerous female (Leiden Mus.).

English Harbor, Antigua; shore; 1918; Barbados-Antigua Exped., Univ. Iowa; 1 immature female (Mus. S. U. I.).

Curaçao; 1884; *Albatross;* 2 males, 1 female (16196).

Spanish Water (lagoon), Curaçao; shallow water, among madrepores; July 7, 1905; J. Boeke; 1 male (Leiden Mus.).

Spanish Water, Curaçao; from *Porites porites;* 1920; C. J. van der Horst; 1 male (56859).

Caracas Bay, Curaçao; from coral; April 7, 1920; C. J. van der Horst; 1 female (56856).

Genus TELEOPHRYS Stimpson

Teleophrys STIMPSON, Amer. Journ. Sci., ser. 2, vol. 29, 1860, p. 133; type, *T. cristulipes* Stimpson.

Allied to *Mithrax*, but distinguished by the character of the orbits which have the superior and exterior margins entire or nearly so; there may be traces of two superior fissures. Carapace ovate. Basal segment of antenna narrower than in typical *Mithrax*, armed with a tooth at the antero-external angle. Merus of outer maxilliped broader than ischium, and notched at internal angle for reception of palpus. Legs cristate.

Restricted to America.

KEY TO THE SPECIES OF THE GENUS TELEOPHRYS

A¹. Carapace broader than long. Legs cristate on upper, but not on lower surface.

B¹. A tooth at middle of outer margin of basal article of antenna. Three antero-lateral branchial spines. No lobe on posterior (outer) surface of propodus of legs. Second movable article of antennae long. cristulipes, p. 441.

B². No tooth at middle of outer margin of basal article of antenna.

C¹. Two (or sometimes one) antero-lateral branchial spines. A lobe on posterior (outer) surface of propodus of legs_____ tumidus, p. 442.

C². Three antero-lateral branchial tubercles, the posterior one may be acute. No lobe on posterior (outer) surface of propodus of legs. Second movable article of antennae short_____ pococki, p. 443.

A². Carapace distinctly longer than broad. Legs cristate on upper and lower surfaces_____ornatus, p. 444.

Analogous species on opposite sides of the continent: *pococki* (Atlantic); *cristulipes* (Pacific).

TELEOPHRYS CRISTULIPES Stimpson

Plate 159, figs. 1, 2 and 7; plate 262, fig. 7

Teleophrys cristulipes Stimpson, Ann. Lyc. Nat. Hist. N. Y., vol. 7, 1860, p. 190 [62], pl. 2, fig. 2 (type-locality, Cape St. Lucas; cotype, Cat. No. 1226, M. C. Z.; the specimen mentioned by Pocock is probably also a cotype).—A. Milne Edwards, Crust. Rég. Mex., 1875, p. 113, pl. 19, figs. 2–2*e* (*Mithrax*, subgenus *Mithraculus*, section *Teleophrys*).—Rathbun, Proc. U. S. Nat. Mus., vol. 38, 1910, p. 536, pl. 46, fig. 2 (after Stimpson); part: Cape St. Lucas specimen only.

?*Mithrax cristulipes* Miers, *Challenger* Rept., Zool., vol. 17, 1886, p. 87.

Mithrax cristulipes Rathbun, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 273 (part: Pacific coast specimens only).

Diagnosis.—Front (in advance of fronto-orbital sinus) twice as broad as long. Three (exceptionally four) antero-lateral, branchial, marginal spines. Only one lobe on the propodus of ambulatory legs, exclusive of those on the articulating margin. Third (or second free) article of antenna long and slender.

Description.—Carapace a little broader than long, triangular in front, laterally and posteriorly rounded. Surface sparingly granulate and tuberculate. Gastric and cardiac regions moderately protuberant, the former crossed at the middle by a row of four small tubercles, the outer pair a little in advance of the inner pair. Branchial region, deeply separated from the hepatic and armed with three subequal, curved, acute spines on its antero-lateral margin; occasionally a smaller, additional spine is inserted; a marginal hepatic spine; a small spine on postero-lateral margin; above it a large, posteriorly-flattened, blunt tubercle; a small tubercle toward the inner angle of the region.

Rostral horns very small, triangular, blunt; interspace triangular. Preorbital angle elevated and with a dimple near the tip; upper margin of orbit with a small V-shaped emargination continued backward by a furrow. Antennae two-thirds as long as carapace, basal article with a small tooth on its outer margin besides the large one at the antero-external angle; on the carapace just outside the base of this article there is a tubercle. The second movable article is long and slender, fully three times as long as its greatest or distal width.

Inner distal margin of merus of maxilliped oblique. Feet rather broad, naked above, and covered with lamelliform spines or short, leaflike crests, often somewhat imbricated. Chelipeds with the crests on merus and carpus less developed than on the ambulatories; a prominent, bilobed crest on inner margin of merus and of carpus; two long undivided crests on outer surface of carpus; hands very high, compressed, cristate above, less so below, smooth except for a conical tubercle at proximal end, considerably below the middle; surface covered with brownish spots, in alcohol. Fingers of adult male widely gaping, narrow, subcylindrical, tips excavate, crenulate; a

tooth on dactyl just behind middle of gape; between this tooth and the tip one or two minute, acute teeth, and on the fixed finger three or four such teeth. On the ambulatory legs the merus, carpus and propodus are lobed on their distal margins; the merus and carpus have several dorsal lobes, somewhat biserially arranged, while the propodus has but one dorsal lobe, near its middle; this article diminishes rapidly in length from first to last leg, and is nearly twice as long in first as in last. The distal half of the dactylus is strongly curved; a few small spinules beneath; horny tip long, light-colored.

Measurements.—Male (46079), total length of carapace 8.7, width of same with spines 10, without spines 9.3 mm.

Range.—From Cape St. Lucas, Lower California, Mexico, to Panama. Miers[53] gives "California," probably an error for "Lower California."

Material examined.—

Cape St. Lucas, Lower California; John Xantus; 3 males, 6 females (3 ovigerous), cotypes (1226, M. C. Z.).

Manzanillo, Colima, Mexico; on drifted pile; July 17, 1913; C. R. Orcutt; 4 males, 2 females (46079).

Pearl Islands, Bay of Panama; S. W. Garman; 3 males, 3 females (1994, M. C. Z.).

TELEOPHRYS TUMIDUS (Cano)

Plate 159, figs. 8 and 9

Mitraculus tumidus Cano, Boll. Soc. Nat. Napoli, ser. 1, vol. 3, 1889, p. 186, pl. 7, fig. 7 (type-locality, Payta, Peru; type in Naples Mus.).
Mithrax tumidus Rathbun, Proc. U. S. Nat. Mus., vol. 38, 1910, p. 575.
Teleophrys cristulipes Rathbun, Proc. U. S. Nat. Mus., vol. 38, 1910, p. 536 (part; not pl. 46, fig. 2).

Diagnosis.—Front (in advance of fronto-orbital sinus) less than twice as broad as long. One or two antero-lateral, branchial, marginal spines. A lateral, as well as a dorsal, lobe on the posterior surface of the propodus of the ambulatory legs. Third (or second free) article of antenna short and stout.

Description.—Compared to *T. cristulipes*, the carapace is relatively longer, the lateral angle more pronounced, so that the carapace is less rotund and more triangular; the surface has more granules and fewer tubercles and spines. The crescentic branchial elevation either side of the cardiac region is wider and more swollen. There are only two antero-lateral marginal spines, one at the lateral angle and one in front of it, which is exceptionally replaced by a tubercle. The anterior branchial spine and the hepatic spine of *cristulipes* are replaced by tubercles. The postero-lateral spine is of good size; in front of it is a tubercle which with the three marginal spines forms a parallelogram.

[53] *Challenger* Rept., Zool., vol. 17, 1886, p. 87.

Front more triangular than in *cristulipes;* the space between the horns is a narrow slit. Upper margin of orbit with two slight emarginations. Outer margin of basal article of antenna subentire and nondentate, although posteriorly it curves outward slightly in a shallow lobe. Second free article short and stout, less than twice as long as its greatest or distal width.

Inner distal angle of merus of maxilliped deeply notched.

Chelipeds less rough than in *cristulipes.* The tubercle at the proximal end of the palm is higher up or nearer the middle. The fingers of the well-developed male, while similar to those of *cristulipes* are a little less slender, and taper gradually from base to tip; in *cristulipes* they are of more even width throughout. The ambulatory legs are stouter than in *cristulipes,* especially the propodus; this article has a lobe on the posterior surface as well as on top; the dactylus is shorter, stouter and more curved than in the allied species.

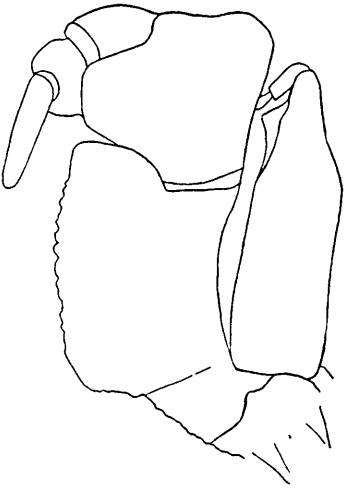

FIG. 128.—TELEOPHRYS TUMIDUS (40466 MAXILLIPED, × 13.5

Measurements.—Male (40466), total length of carapace 17.8, width of same with spines 19, without spines 18.2 mm.

Range.—Galapagos Islands; northern Peru.

Material examined.—

Reef north of Tagus Hill, Tagus Cove, Albemarle Island, Galapagos Islands; March 16, 1899; Stanford Galapagos Expedition; 1 male (25678).

Payta, Peru; U. S. C. S. S. *Hassler;* 5 males, 2 females (1 ovigerous) (1995, M. C. Z.); 1 male, 1 female (55119).

Bay of Sechura, about half way between Bayovar and Matacaballa, Peru; dredged; April 10, 1907; R. E. Coker, collector; received from Peruvian Government; 1 male, 1 female (40466).

TELEOPHRYS POCOCKI Rathbun

Plate 159, figs. 5 and 6

Mithrax (*Teleophrys*) *cristulipes* POCOCK, Journ. Linn. Soc. London, Zool. vol. 20, 1890, p. 508.

Mithrax cristulipes RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 273, (part: Brazilian specimens).

Teleophrys cristulipes RATHBUN, Proc. Washington Acad. Sci., vol. 2, 1900, p. 143; Proc. U. S. Nat. Mus., vol. 38, 1910, p. 536 (part: Brazilian specimens).

Teleophrys pococki RATHBUN, Proc. U. S. Nat. Mus., vol. 64, art. 14, 1924, p. 5 (type-locality, Maceio coral reef, Alagoas, Brazil; holotype, male, Cat. No. 25765).

Diagnosis.—Only one antero-lateral spine on carapace. An obscure tooth at middle of outer margin of basal antennal article. Tubercle on palm large. No lobe on posterior surface of propodus of ambulatory legs.

Description.—Resembling *cristulipes* in shape of carapace and chelae. The carapace is smoother, the granules and tubercles fewer and much depressed; the marginal protuberances are mostly tubercles, one hepatic, three branchial (antero-lateral) of which the second and third are nearer together than first and second, second smallest, third longest, directed nearly forward; a large tubercle is above the postero-lateral margin. Front less deeply bifid than in *cristulipes*. The upper distal margin appears entire but a slight depression takes the place of a notch. Preorbital tooth short, tip arcuate, not dimpled. Basal antennal article more triangular than in the allied species, its anterior tooth very short and blunt, outer tooth obsolescent; second movable article about twice as long as wide.

Merus of maxillipeds with an oblique inner distal margin.

Chelipeds stout; the carpus has two distant lobes on inner margin and only one unbroken ridge on outer surface. Palm dark colored except at distal end, fingers with a broad, reddish band across the middle. The tubercle at proximal end of palm is situated as in *cristulipes* but is larger and sublaminar. Legs slenderer than in *cristulipes*, the last two articles resembling in shape those of that species, having no lateral lobe but a minute dorsal lobe.

Measurements.—Largest male (25765), greatest length of carapace 7.3, greatest width 7.7 mm. Largest female (Amsterdam Mus.), greatest length 9.3, greatest width 11.3 mm.

Range.—Curaçao; Brazil, from Fernando Noronha Island (Pocock) to Alagoas.

Material examined.—

Caracas Bay, Curaçao; 1920; C. J. van der Horst: From a stone on shore; April 30; 1 ovigerous female (Amsterdam Mus.). In sponges; May 3; 1 male (56374), 1 male (Amsterdam Mus.).

Rio Formoso, Pernambuco, Brazil; 1876–1877; R. Rathbun, Hartt Explorations; 1 male, 1 female (19957).

Maceio coral reef, Alagoas, Brazil; July 23 and 26 and August 3, 1899; A. W. Greeley, Branner-Agassiz Exped.; 4 males (1 is holotype), 3 females (25765).

TELEOPHRYS ORNATUS Rathbun

Plate 159, figs. 3 and 4; plate 262, figs. 8 and 9

Mithrax sp., Miers, *Challenger* Rept., Zool., vol. 17, 1886, p. 89, pl. 10, figs. 3, 3*a*–3*b*.—Rathbun, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 273.

Teleophrys ornatus Rathbun, Bull. U. S. Fish Comm., vol. 20 for 1900, part 2, 1901, p. 65, text-fig. 11 (type-locality, Mayaguez Harbor, 4 to 6 fathoms; holotype, Cat. No. 23774, U.S.N.M.).

Diagnosis.—Carapace distinctly longer than broad. Two large tubercles on the intestinal region, one on each side of the median line. A very large branchial spine near lateral angle. Legs cristate on posterior as well as anterior margins.

Description.—Carapace longer than broad; two median tubercles, one gastric, one cardiac; a stout, suberect spine on branchial region near postero-lateral angle; an oblique row of three very small spines on lateral branchial margin, the posterior one situated below the others; a tubercle on hepatic margin; lateral margin also granulate; two large tubercles above posterior margin; a few other tubercles and tufts of hair scattered on carapace. Rostral teeth small, separated by a sinus; preorbital lobes smooth, rounded, prominent; two faint emarginations in upper margin of orbit. Basal article of

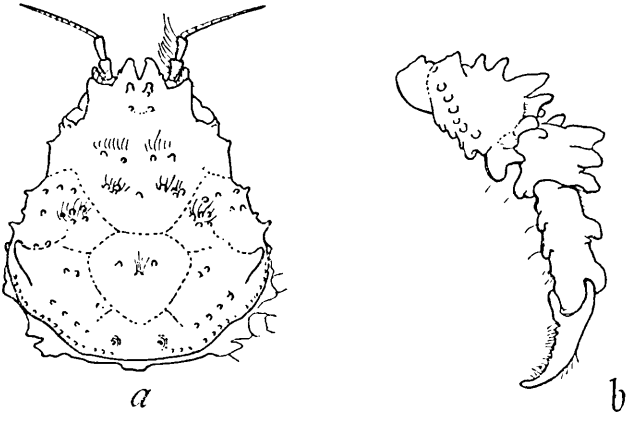

FIG. 129.—TELEOPHRYS ORNATUS, FEMALE (23774), CARAPACE 5.6 MM. LONG. *a*. CARAPACE, DORSAL VIEW. *b*. AMBULATORY LEG. (AFTER RATHBUN.)

antenna with an antero-external tooth and a tuberculiform tooth on outer margin. Inner distal margin of merus of maxilliped oblique.

Chelipeds with the thin, upper margin of merus cut into laminate lobes, wrist ornamented with about five similar lobes; hand smooth, tapering distally, the gaping fingers of the young male each armed with three tubercles on the inner edge, the proximal one largest. Chelipeds of female very feeble, fingers gaping very little and only at base. Legs with a single margin, above and below, of irregular laminate lobes on merus, carpus and propodus; the inferior lobes of the propodus are a little above the margin on outer surface; no additional lobe on that surface; dactylus strongly curved, posteriorly denticulate.

Measurements.—Egg-bearing female, holotype, length of carapace 5.6, width 4.7 mm.

Color (Miers).—In spirit, light reddish brown above, white below; a longitudinal band of white along middle of carapace on dorsal surface.

Range.—Yucatan Channel and West Indies; Fernando Noronha, Brazil. Depth, 4 to 24 fathoms.

Material examined.—

Yucatan Channel, off Cape Catoche, Mexico; 24 fathoms; wh. R. Co.; Jan. 30, 1885; station 2365, *Albatross;* 1 young female (16052).

Mayaguez Harbor, Porto Rico; 4 to 6 fathoms; Co.; temp. 68° F.; Jan. 20, 1899; station 6065, *Fish Hawk;* 1 ovigerous female, holotype (23774).

St. Croix, West Indies; 1 female (Copenhagen Mus.).

Additional record.—Fernando Noronha, Brazil; 7 to 20 fathoms; H. M. S. *Challenger;* 1 male (Brit. Mus.).

Genus COELOCERUS A. Milne Edwards

Coelocerus A. MILNE EDWARDS, Crust. Rég. Mex., 1875, p. 84; type, *C. spinosus* A. Milne Edwards.

Carapace swollen, spinose; rostrum in the form of a gutter open below, the lateral margins folding under, and the extremity bifid; orbit with a narrow buttonhole fissure above and below; preocular angles spiniform; postocular cup squarish, strongly produced laterally. Basal antennal segment thick, outer-inferior margin bidentate, outer-superior margin, bordering the orbit, also bidentate; movable portion inserted below the involuted portion of the rostrum. Ocular peduncles stout. Merus of outer maxillipeds a little dilated at outer angle, deeply cut at inner angle for insertion of palp. Ambulatory legs short, first pair not much longer than second.

Contains only one species.

COELOCERUS SPINOSUS A. Milne Edwards

Plate 263; plate 264, figs. 1 and 2

Coelocerus spinosus A. MILNE EDWARDS, Crust. Rég. Mex., 1875, p. 85, pl. 18, figs. 2–2 *b* (type-locality, off Florida, 19 fathoms; holotype, young male, Cat. No. 1989, M.C.Z.).

Coelocerus grandis RATHBUN, Proc. U. S. Nat. Mus., vol. 16, 1893, p. 79, pl. 5 (type-locality, Gulf of Mexico, 35 fathoms; holotype, adult female, Cat. No. 9694, U.S.N.M.).

Diagnosis.—Orbits prominent; rostrum ascending, involuted; median spines 6; lateral spines 5.

Description.—Covered everywhere, except on fingers and greater part of ambulatory dactyls, with a short, close pile. Carapace behind the orbits oval-orbicular, much swollen, armed with a definite number of conical, subacute spines, between the spines closely punctate. Median spines 6, 2 gastric, 1 genital, 2 cardiac, 1 intestinal; a lateral gastric spine (paired) in advance of median spines.

Lateral marginal spines 5, arranged in an arc, the first or hepatic spine the strongest; a dorsal hepatic spine (paired); 6 dorsal, branchial spines (paired), of which 4 form 2 rows of 2 each longitudinally placed, one row near the cardiac region, and the other 2 spines, fifth and sixth, are larger and in transverse line with the third marginal spine; 1 spine above each post-lateral margin and in a transverse line with the median intestinal spine. The supraocular eave has a strong antero-lateral spine and a small post-lateral one which overlaps the postocular cup; this cup is very prominent, has a strong outward pointing spine and, at lateral angle of orbit, a shallow tooth. Between the orbits there is a deep longitudinal depression; rostrum ascending; tip with a broad, shallow bifurcation.

Anterior tooth of basal antennal segment massive. Immediately behind the segment there is a spine pointing downward, another at the buccal angle; 2 very strong, blunt, pterygostomian spines.

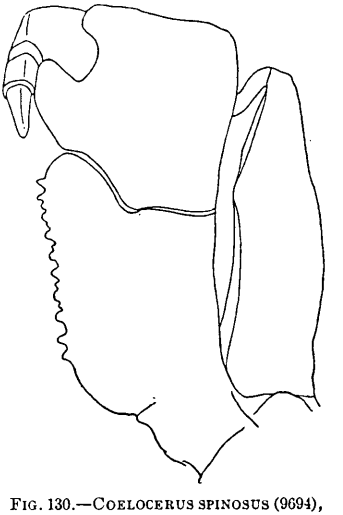

FIG. 130.—COELOCERUS SPINOSUS (9694), MAXILLIPED, × 2.33

Chelipeds of female no longer than next leg; merus with 2 tubercles above near either end besides a short terminal spine; a few sharp tubercles on carpus; palms diminishing in width distally. Legs with a short terminal spine on the merus.

First two segments of female abdomen each armed with a median spine, second segment also with two lateral lobes, third with a median lobe.

The young have proportionally much longer spines.

Measurements.—Adult female (9694), length of carapace without rostrum 98, width without spines 87, with spines 95, length of cheliped about 104 mm. Adult female (2107, M. C. Z.), length of carapace to extremity of rostrum 113.2, width without spines 82, with spines 88 mm.

Range.—Gulf of Mexico; 13 to 35 fathoms.

Material examined.—

East of Delta of Mississippi River; lat. 29° 24′ 30″ N.; long. 88° 01′ 00″ W.; 35 fathoms; yl. S. bk. Sp.; Mar. 4, 1885; station 2388, *Albatross;* 1 adult female (9694).

Highland section, Florida; lat. 27° 55′ 30″ N.; long. 83° 11′ 30″ W.; 13 fathoms; Co. R.; temp. 15.2° C.; January 28, 1902; station 7253, *Fish Hawk;* 1 young female (47097).

West Florida; 19 fathoms; William Stimpson; 1 young male, soft shell, holotype (1989, M. C. Z.).

Florida; 1 large female (2107, M. C. Z.).

Genus STENOCIONOPS (Leach MS.) Desmarest

Stenocionops (Leach MS.) DESMAREST, Dict. Sci. Nat., vol. 28, 1823, p. 266; Consid. Gén. Crust., 1825, p. 153; type, *Maia taurus* Lamarck, Latreille, 1818=*Cancer furcatus* Olivier, 1791.—GUÉRIN, Encyc. Méth., Entom., vol. 10, 1825, p. 484.

Pericera LATREILLE, Encyc. Méth., Entom., vol. 10, 1825, p. 699; type, *Cancer fuscatus* [slip for *furcatus*] Olivier; Cuvier's Règne Anim., ed. 2, vol. 4, 1829, p. 58 (subgenus).—RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 243, and synonymy.

Carapace subpyriform, rather convex, with dorsal surface uneven, tuberculated or spinous; lateral margins armed with a series of long spines; preocular spine well developed. Rostrum composed of two strong spines which are not deflexed and are divergent from base; orbits tubular, not strongly projecting; eyes small, retractile within orbits. Basal antennal joint considerably enlarged, armed with one or two small distal spines or tubercles not visible in a dorsal view. The merus of outer maxillipeds with distal margin truncate, antero-internal angle emarginate, antero-external angle rounded or subacute. Chelipeds in adult male well developed; palm elongate and subcylindrical or somewhat compressed, not dilated or enlarged; fingers either without any or with a moderate intermarginal hiatus at the base when closed. Ambulatory legs moderately elongated, with joints subcylindrical, without spines; dactyli nearly straight. Abdomen in male distinctly seven-jointed.

Distributed on the east coast of America from Cape Hatteras, North Carolina, to Rio de Janeiro, Brazil; on the west coast from Lower California to Galapagos Islands. West Africa (Miers).

KEY TO THE SPECIES OF THE GENUS STENOCIONOPS

A¹. Hepatic region not enlarged nor produced beyond the general outline of the carapace; armed with not more than one large spine.
  B¹. Rostral horns divergent throughout or at least for their basal half.
    C¹. Marginal spines behind orbit more than three.
      D¹. Dorsum almost unarmed except for a median intestinal spine. **furcata**, p. 449.
      D². Dorsum armed with spines.
        E¹. Fewer than eight median spines---------- **furcata coelata**, p. 450.
        E². Eight median spines---------- **ovata**, p. 459.
    C². Marginal spines behind orbit three.
      D¹. Carapace widest between tips of anterior branchial spines. **spinimana**, young, p. 457.
      D². Carapace more triangular, usually widest between tips of posterior branchial spines---------- **triangulata**, p. 461.
  B². Rostral horns curved, convex to each other, contiguous in the middle. **contigua**, p. 451.

A². Hepatic region enlarged and produced separately from the curve of the branchial region.

B¹. Median spines of carapace 12 or 13. Marginal hepatic spines 3.
spinimana, adult, p. 457.

B². Median spines of carapace 9 or 10. Marginal hepatic spines 2.

C¹. Median spines 9; none on posterior margin. Rostro-orbital region occupying less than one-fourth of total length of carapace.
macdonaldi, p. 460.

C². Median spines 10; one on posterior margin. Rostro-orbital region occupying more than one-fourth of total length of carapace.
spinosissima, p. 455.

ANALOGOUS SPECIES ON OPPOSITE SIDES OF THE CONTINENT

Atlantic	Pacific
furcata	*contigua*
spinimana	*macdonaldi*

STENOCIONOPS FURCATA (Olivier)

DECORATOR CRAB; MACCA CRAB (JAMAICA FISHERMEN)

Plates 160 and 161

Horned Crab HUGHES, Natural History of Barbados, 1750, p. 266, pl. 25, fig. 3.

Cangrejo Cornudo PARRA, Descripcion de diferentes piezas de Historia Natural, 1787, p. 135, pl. 50, figs. 2 and 3.

Cancer furcatus OLIVIER, Encyc. Méth., Hist. Nat., Insectes, vol. 6, 1791, p. 174 (type-locality not given; type perhaps not extant).

Cancer cornudo HERBST, Natur. Krabben u. Krebse, vol. 3, pt. 4, 1804, p. 6, pl. 59, fig. 6 (type in Berlin Mus., 1896).

Pericera cornuta MILNE EDWARDS, Hist. Nat. Crust., vol. 1, 1834, p. 335; Cuvier's Règne Anim., disciples ed., atlas, pl. 30, fig. 1.—A. MILNE EDWARDS, Crust. Rég. Mex., 1873, p. 51, and synonymy.[54]—MIERS, Journ. Linn. Soc. London, Zool., vol. 14, 1879, pp. 664 and 673, pl. 13, figs. 4 and 5.—GUNDLACH and TORRALBAS, An. Acad. Habana, vol. 36, 1899 (1900), p. 362, text-fig.; reprint, 1917, p. 19, pl. 4, fig. 10.

Chorinus armatus RANDALL, Journ. Acad. Nat. Sci. Philadelphia, vol. 8, 1839, p. 108 (type-locality unknown; type in Mus. Phila. Acad. Nat. Sci.).

Stenocionops furcata RATHBUN, Ann. Inst. Jamaica, vol. 1, 1897, p. 6.

Diagnosis.—Lateral marginal spines 4. Dorsum uneven, nearly smooth. One median spine, intestinal. Horns long, often curved.

Description.—Body and feet covered with a close dark brown felt composed of elongate pointed vesicles; there are also patches of stiff, hooked hairs. Carapace oblong-ovate, not very uneven; a rounded prominence on gastric and on cardiac region; intestinal region with two median projections, the first very small; the other, large, suberect, and curved, overhangs the posterior border. Frontal horns large, very divergent at base; distally often subparallel or even somewhat converging; on each side a superior orbital spine. The lateral margins bear, besides the very sharp external orbital angle, four very large, sharp spines, one hepatic and three branchial. Basal article of antenna armed near the antero-external angle with a

[54] "*Pericera cornuta*" was not cited by Latreille.

spine which does not reach beyond the orbital border and two short spines behind the next article.

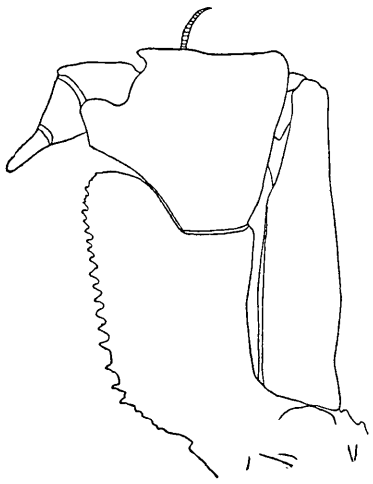

FIG. 131.—STENOCIONOPS FURCATA (43084), MAXILLIPED, × 2.7

The chelipeds attain in the male a considerable size and are nodose; arm spined above; hand long, cylindrical, and granulate. Fingers about half as long as palm, gaping for their basal half; a tooth on dactylus near its base.

Measurements.—Length of large male (Cat. No. 5843) from tip of rostrum to tip of posterior spine, 146.5; width, including spines, 93; length of horn 47.2; length of cheliped, 215 mm.

Variations.—Sometimes (Cat. No. 25233) instead of dorsal tubercles there are a few (10 or 11) sharp spines. In the young the horns are straight and divergent, but less divergent than in the subspecies *coelata;* with age the horns grow proportionally longer and are separated by a smaller angle and their terminal halves may become parallel or even curve inward (5843) or downward (49902).

Range.—From Georgia to Bahia, Brazil. Simon's Bay, Cape Colony (Miers). Shallow water to 35 fathoms.

Material examined.—See table, pages 452–453.

STENOCIONOPS FURCATA COELATA (A. Milne Edwards)

Plate 164

Pericera coelata A. MILNE EDWARDS, Bull. Soc. Philom., ser. 7, vol. 2, 1878, p. 224 (type-localities, 10 miles from the Idolos [error for "Jolbos"] Islands and near Havana, 175 fathoms; types in M. C. Z.).

Pericera caelata A. MILNE EDWARDS, Crust. Rég. Mex., 1879, p. 200, pl. 15*A*, figs. 3–3*c*.

Pericera cornuta (?) and *Pericera*, sp., KENDALL, Bull. U. S. Fish Comm., vol. 9, 1889 (1891), p. 303.

Pericera cornuta caelata RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 244.

Stenocionops furcata coelata RATHBUN, Bull. U. S. Fish Comm., vol. 20 for 1900, part 2 (1901), p. 73.—HAY and SHORE, Bull. Bur. Fisheries, vol. 35, 1915–16 (1918), p. 460, pl. 39, fig. 3.

Diagnosis.—Lateral marginal spines four. From 20 to 25 dorsal spines and tubercles. Horns divergent, straight, or nearly so.

Description.—Differs from the typical form of the species in its more uneven and spinose carapace, the spines and sharp tubercles of

the dorsum (exclusive of the margin) numbering from 20 to 25. Specimens up to a carapace length of 91 mm. have more divergent rostral horns than in typical *furcata* while the only specimens, two in number, above that size have horns less divergent and relatively shorter than in smaller specimens, and resembling except in length those of typical *furcata*. Small and half grown specimens are relatively wider across the orbits.

Measurements.—Length of largest male (33462) from tip of horns to tip of posterior spine 137, length of horn 25.6, width of carapace including spines 110.7, length of cheliped about 315 mm. Length of male (9373) from tip of horns to tip of posterior spine 91, length of horn 25, width of carapace including spines 63.7, length of cheliped 88 mm.

Color.—Dark red (Hay).

Range.—From Beaufort, North Carolina, to Gulf of Mexico and Caribbean Sea, to a depth of 278 fathoms; exceptionally below 50 fathoms.

Material examined.—See table, pages 453–454.

STENOCIONOPS CONTIGUA Rathbun

Plates 162 and 163; plate 266, fig. 2

Pericera contigua RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 247, pl. 32, fig. 2 (type-locality, Gulf of California, station 3005, *Albatross;* holotype, Cat. No. 16067, U. S. N. M.).

Stenocionops contigua RATHBUN, Proc. U. S. Nat. Mus., vol. 21, 1898, p. 577.

Diagnosis.—Rostral horns curved, contiguous. Basal segment of antenna armed with a long spine. Three lateral spines on carapace behind orbit.

Description.—Shape of carapace and hairy coating similar to that of *furcata;* lateral spines behind the orbit three, one hepatic, two branchial. Protuberances of the dorsal surface partially concealed; they are arranged as follows: Three sharp tubercles in a triangle on the gastric region, the posterior one median and highest. On each branchial region two spines or a spine and a tubercle in an oblique line with the postero-lateral marginal spine, and a sharp tubercle close to the postero-lateral border of the cardiac region. Above the posterior margin a median spine, and in front of it and on either side a tubercle which may be sharp. The cardiac region may be either smoothly rounded or surmounted by a sharp spine, and there may be a spine, large in the old near the anterior border of the branchial region. Rostral horns curved, contiguous in the middle, separated at base by a button-hole slit, terminal halves or less moderately divergent. Only one spine on the basal antennal segment, situated on the anterior border and so elongate as to be visible in a dorsal view.

Material examined of Stenocionops furcata

Locality	Bearings		Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	Latitude N.	Longitude W.									
	° ′ ″	° ′ ″			°C						
Georgia: Savannah									1	Buffalo Soc. Nat. Sci.	
Florida						1901		J. E. Benedict	1 ♂	25233	
?Gulf of Mexico									1 ♂	5843	
Jamaica:											
Montego Bay						July, 1910		E. A. Andrews	1 ♀	43086	
Do				Piles of wharf				do	1 ♀	43087	
									2 ♂	43088, 43089	
Do			(1)					C. B. Wilson	1 ♀	43084	
Do				Coral reef				do	1 ♀	43085	
Kingston Harbor								F. S. Conant	1 ♀	19583	
Do						1893		R. P. Bigelow	3 ♂ 1 ♀	17985	
Jamaica									1	Buffalo Soc. Nat. Sci.	
Do						1884		*Albatross*	2 ♂ 1 ♀	7670	
Do								T. H. Morgan	1 y	17201	
Porto Rico:											
Mayaguez Harbor	Red buoy entrance, E. SE., ½ mile.		25–30	S. M. Sh	25	Jan. 20, 1899	6062	*Fish Hawk*	2 ♂ 1 ♀	24416	
Off Punta de Melones	Cabo Rojo Lighthouse, S. SE., 5¼ miles.		7.25	C. S. shy	26	Jan. 25, 1899	6072	do	1 y	24172	
Ensenada Honda, Culebra Island.						Feb. 10, 1899		do	1 y	24170	
Off Vieques Island	Point Mula Lighthouse, S. SW. ⅜ W., 5¾ miles.		14	C. S. Sh	25.6	Feb. 8, 1899	6085	do	1 y	24171	
St. Thomas:											
St. Thomas								A. H. Riise	1 ♂	2458	
Do						1884		*Albatross*	2 y	16177	
Do				In fish pot		July, 1915		C. R. Shoemaker	1 ♂ 1 ovig. ♀	49901	Gift of Carnegie Institution.
St. Thomas, outside of harbor.				do		do		do	4 ♂ 2 ♀	49903, 49953, 49954.	Do.
Buck Island, near St. Thomas.						July 23, 1915		do	2 ♂	49902	Gift of Carnegie Institution. Brought in by fishermen.
Dominica: Roseau								A. H. Verrill	1 ♂	32510	

Barbados			35	rky		May 20, 1918	24	Barbados-Antigua Exped., Univ. Iowa.	1♂	Mus. S. U. I.	
Locality not given									1 lge. ♂	Phila. Acad.	Type of *Chorinus armatus* Randall.

[1] Shallow water.

Material examined of Stenocionops furcata coelata

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	° ′ ″	° ′ ″			° C						
North Carolina: Off Beaufort, on fishing grounds.			14					*Fish Hawk*	1♂ 1 y	51018 51068	
South Carolina: Off Long Bay.	33 34 00 to 33 41 00	76 41 00	62–110	S. Sh.	21.9	Dec. 12, 1919	20037	*Albatross*	1 right chela	55695	
Florida:											
Off Miami								J. B. Henderson.	1♂, soft shell, 1♀	47093	
Off Miami, in Gulf Stream.								do	1♀ 1 y	49086	
					° F						
Off Cape Florida, in Gulf stream.	2⅛ miles S. SE. of Fowey Rocks Light.		45	rky	70	Mar. 25, 1903	7511	*Fish Hawk*	1♂ 2 y	47094	
Off Key West	Sand Key Light bearing W. NW., Key West Light bearing N.		60			June 19, 1893	24	Biol. Exped. State Univ. Iowa.	1♂ 1♀	Mus. S. U. I.	
Do	About 1 mile from Light.		5.25			June 26, 1893	44	do	1♂	Mus. S. U. I.	
Do			(1)			do	45, 46	do	1♂ 2♀ 2 y	Mus. S. U. I.	
Dry Tortugas			4					J. B. Henderson.	1 y	47095	
Do			16					do	1♂ 1 y. ♀	47092	
Do			(2)			1893		Biol. Exped. State Univ. Iowa.	1♀	Mus. S. U. I.	
North of Dry Tortugas	25 17 00	82 54 30	27	Sh. S.	67.5	Feb. 18, 1889	5063	*Grampus*	1 y. ♀, soft shell	15276	
Do	25 23 00	82 54 30	26.5	Sh. S.	67	Feb. 26, 1889	5070	do	1 y	16068	
West of Oyster Bay	26 19 00	82 50 00	21	S. Sh. bk. Sp.	66	Mar. 21, 1889	5110	do	1♂	15205	
Do	26 19 00	83 11 00	27	S. Algae	68	do	5108	do	1♂	20107	
North of Dry Tortugas	25 04 30	82 59 15	26	fne. wh. S. brk. Sh.		Mar. 19, 1885	2414	*Albatross*	1♂ 2♀	9847	
West of Cape Romano	26 00 00	82 57 30	24	fne. S. bk. Sp. brk. Sh.		do	2413	do	1♀	15149	

[1] Shallow water.

[2] Dredged.

Material examined of Stenocionops furcata coclata—Continued

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
Florida—Continued	° ′ ″	° ′ ″			° F						
West of Oyster Bay	26 18 30	83 08 45	27	fne. gy. S. bk. Sp. brk. Sh.	-------	Mar. 19, 1885	2412	*Albatross*	1 ♀	15150	
West of Caseys Pass	27 04 00	83 21 15	26	crs. gy. S. brk. Sh.	-------	Mar. 18, 1885	2409	do	1 ♀	15148	
Off Charlotte Harbor	26 33 00	83 10 00	28	sdy	66	Mar. 2, 1901	7123	*Fish Hawk*	1 y	25599	
Pensacola								Silas Stearns	1 ♂ 1 ♀ 1 y	4505	From fish stomach.
									1 ♂ 1 ♀	9373	
? Florida								Bur. Fisheries	1 lge. ♂	33462	
South of Dog Island	28 47 30	84 37 00	24	Co. brk. Sh	-------	Mar. 15, 1885	2407	*Albatross*	3 ♂ 1 ♀	9803	
South of St. George Island.	28 46 00	84 49 00	26	crs. S. Co	-------	do	2406	do	7 y	15146	
South of Cape St. George.	28 45 00	85 02 00	30	gy. S. brk. Co	-------	do	2405	do	3 y	15147	
Southwest of Cape San Blas.	29 11 30	85 29 00	26	S. G. brk. Sh	-------	Feb. 7, 1885	2374	do	1 ♀	15145	
Do	29 14 00	85 29 15	25	Co	-------	do	2373	do	1 ♀	15144	
Do	29 18 15	85 32 00	25	crs. gy. S. brk. Sh.	-------	do	2370	do	1 y	16045	
Alabama: South of Mobile Bay.	29 24 30	88 01 00	35	yl. S. bk. Sp	-------	Mar. 4, 1885	2388	do	2 y	16088	
Mexico:											
Yucatan Channel	22 28 00	87 02 00	27	fne. wh. Co	-------	Jan. 30, 1885	2366	do	3 ♀ 1 y	9592	
Do	22 18 00	87 04 00	24	wh. R. Co	-------	do	2365	do	3 y	16051	
Do	22 07 30	87 06 00	21	wh. R. Co	-------	do	2363	do	2 ♀	15043	
Do	22 08 30	86 49 00	26	wh. Co	-------	do	2360	do	1 ♂	9567	
Do	21 26 30	86 28 40	51		69	1880	XXX	*Blake*	2	4467, M.C.Z.	
Do	16 miles N. of Jolbos Islands, SW. part of Yucatan Bank.		14		-------	1877-78	39	do	1	2848, M.C.Z.	Cotype.
Cuba: Off Havana			175		° C	1877-78	79	do	2	2847, M.C.Z.	Cotypes.
Porto Rico: Off Vieques Island.	Culebrita Lighthouse, NE. by N., 10 miles.		15	Co	26	Feb. 10, 1899	6091	*Fish Hawk*	1 y. ♂	24210	
Off St. Lucia	13 52 00	61 07 00	278		° F	1879	------	Capt. E. Cole	1 ♂	3966, M.C.Z.	
Barbados	13 03 55	59 38 25	106	Co	58	Mar. 5, 1879	277	*Blake*	1	2849, M.C.Z.	

Material examined of Stenocionops contigua

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	° ′ ″	° ′ ″			°F						
West coast of Mexico: Magdalena Bay						1872		U. S. C. S. S. *Hassler.*	[7♂ 2♀ 1♂	1921, M.C.Z. 18512	Received from Mus. Comp. Zool.
Gulf of California	21 11 30	109 55 00	10	Sh		Apr. 30, 1888	2828	*Albatross*	1♂ 2 y	21933	
Do	24 11 45	109 55 00	10	Sh		do	2827	do	1♂ 1♀	21937	
Do	24 12 00	109 55 00	9.5	Sh		do	2826	do	1♂	21936	
Do	24 22 30	110 19 30	8	brk. Sh		do	2824	do	1♂ 2♀	21935	
Do	25 02 45	110 43 30	21	S. Sh. Coral-line.		Mar. 17, 1889	3005	do	1♀	16067	Holotype.
Do	31 21 00	113 49 00	11	S. brk. Sh. G.	67	Mar. 25, 1889	3024	do	2♂	16975	

Chelipeds of medium-sized male a little longer than the carapace and the next pair of legs. In large males the chelipeds are much more elongate. Merus armed with 5 or 6 stout spines above. In small specimens the ambulatory legs diminish fairly regularly in length from the first to the last, but in the larger males the first leg is very much longer than the second.

Measurements.—Largest male (M. C. Z.), length of carapace 72, width 60, length of cheliped about 120 mm. Length of male (21937) to tip of horns 33.8, greatest width 24.8, length of cheliped 37 mm.

Range.—Gulf of California to Magdalena Bay, west coast of Lower California, Mexico. Depth, 8 to 21 fathoms.

Material examined.—See table, page 455.

STENOCIONOPS SPINOSISSIMA (Saussure)

Plate 165, fig. 2; plate 264, figs. 3 and 4; plate 265

Pericera spinosissima Saussure, Rev. et Mag. Zool., ser. 2, vol. 9, 1857, p. 501; Mém. Soc. Phys. Genève, vol. 14, 1857, p. 426 [10], pl. 1, fig. 2 (type-locality, Guadeloupe; holotype in Geneva Mus.).—A. Milne Edwards, Crust. Rég. Mex., 1873, p. 52.

Stenocinops polyacantha Moreira, A Lavoura, Bol. Soc. Nac. de Agric. Brazil, anno 7, 1903, p. 66; reprinted as a separate, 1903, p. 11, 3 text figs.; Arch. Mus. Nac. Rio de Janeiro, vol. 13, 1906, p. 20, pl. 4, fig. 2, pl. 5 (type-localities, SE. and E. SE. of Ilha Rasa, off the entrance of the bar of the bay of Rio de Janeiro, at 10 to 12 miles from the coast in 48, 60, 80, and 100 meters; type in Mus. Nac. Rio de Janeiro).

Diagnosis.—Rostro-orbital region in the adult occupying more than one-fourth of total length of carapace. Median spines of carapace 10; marginal hepatic spines 2.

Description.—Carapace covered with numerous spines in the old. The rostral horns are short, straight and divergent. Median spines 10, of which 4 are gastric, one genital, 2 cardiac, 3 intestinal. A large spine on each protogastric region in line with anterior median spine. A row of 2 or 3 small spines on the frontal region behind each horn. Hepatic region protruding, armed with 2 large anterior marginal spines, and 2 or 3 small dorsal spines. Of the lateral branchial spines it may be said that they are 3, with a row of 3 spines below them, the posterior 2 of which are as large as the marginal spines. A row of 4 branchial spines above the marginal spines, and above the middle 2 of these are 2 more spines; a row of small spines parallels the curve of the cardiac region; behind this a single spine; while a row of 5 or more spines lies above each postero-lateral margin.

The preorbital spine is much shorter than in *cornuta*. The spine near the antero-lateral angle of the basal article of the antenna points forward and is of similar size to the postorbital spine; on the same article there is a strong spine pointing obliquely downward at the insertion of the next article. A spine also near the angle of the buccal cavity; midway between and in line with this spine and the spine near the orbit there is a tubercle (or sometimes a spine).

Merus of chelipeds with a row of 5 spines above and 3 equidistant rows of tubercles; carpus with a few tubercles above. Merus of first ambulatory leg with a row of tubercles on its upper inner side.

The above description was made from a large female from Dominica which is much larger than Saussure's type and has a few more spines; it is about the size of Moreira's *polyacantha*, figured, which has still more spines, but some of the additional spines are represented in the Dominican specimen by spinules.

Measurements.—

	Saussure's type of *spinosissima*	Dominica (32712)	Moreira's type of *polyacantha*
	Female	*Female*	*Male*
Length of carapace, including horns	61	94	97
Width of carapace, including spines	48	75	75
Width of carapace, excluding spines	41	65.5	----------
Length of rostral horns	10	14	about 8

Color.—When the hairs are removed, a flesh-colored rose, fingers violet or brown (Saussure).

Range.—Southern Florida; Haiti, West Indies, to Rio de Janeiro, Brazil. 26 to 60 fathoms.

Material examined.—

Off Sombrero, Florida; 54 fathoms; April 2, 1872, 5th cast; *Bache*, Stimpson; 1 small female (1914, M. C. Z.); identified by A. Milne Edwards.

Charlotte Harbor, Florida; 50 fathoms; April 1, 1872; *Bache*, Stimpson; 1 small female (1915, M. C. Z.); identified by A. Milne Edwards.

Grand Anse, Haiti; P. R. Uhler; 1 ovigerous female (1916, M. C. Z.).

Guadeloupe; 1 male, holotype of *P. spinosissima* (Geneva Mus.).

Soufriere Bay, Dominica; 60 fathoms; A. H. Verrill; 1 female (32712).

STENOCIONOPS SPINIMANA (Rathbun)

Plate 267

Pericera, sp. Smith, Rept. U. S. Commr. of Fisheries for 1885 (1887), p. 627.

Libinia spinimana Rathbun, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 240, pl. 30, adult (type-locality, off Cape Lookout, N. C., 124 fathoms; holotype, Cat. No. 14029, U. S. N. M.).

Pericera atlantica Rathbun, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 247, young (type-locality, off Key West, 45 fathoms; type, Cat. No. 15142, U.S.N.M.).

Stenocionops spinosissima Rathbun (not Saussure), Bull. Lab. Nat. Hist. State Univ. Iowa, vol. 4, 1898, p. 256.—Hay and Shore, Bull. Bur. Fisheries, vol. 35, 1915–1916 (1918), p. 460, pl. 39, fig. 2.

Diagnosis.—Rostro-orbital region in the adult occupying less than one-fourth of total length of carapace. Median spines of carapace 12 or 13. Marginal hepatic spines 3.

Description of adult.—Nearly related to *S. spinosissima* but differs as follows: Carapace more rotund and more spinous, spines shorter; 12 or 13 median spines, 5 gastric, 2 genital, 2 cardiac, 3 intestinal; other dorsal spines numerous; anterior marginal hepatic spines 3; the most anterior of these is small and in the very old (the largest specimen examined) may disappear. Rostral horns tapering regularly to a very slender tip instead of stout throughout; a little more divergent than in *spinosissima*. Basal antennal article more twisted, its antero-external angle more advanced and more elevated; the 2 outer spines subequal.

Chelipeds much rougher than in *spinosissima;* merus and carpus armed with numerous spines; manus rough throughout its length, the short spines (2 rows above, 1 below) of the proximal end becoming spinules or sharp granules distally.

Ambulatory legs sparingly spined, merus joints with a terminal spine above; that of first leg with a longitudinal inner-upper row of 5 or 6 and a ring of about 4 near distal end; that of second leg with a ring of 3 or 4 spines; of third and fourth legs with only 1 or 2 spines besides the terminal one. Three or four small spines on carpus of first leg, 3 spinules or tubercles on carpus of second leg, and only one on carpus of third and fourth legs.

Material examined of Stenocionops spinimana

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
North Carolina:	° ′ ″	° ′ ″			°F						
Off Cape Hatteras	35 10 40	75 06 10	68	gy. M.	71.3	Oct. 19, 1884	2268	*Albatross*	1 y. ♀	7220	
Off Cape Lookout	34 38 30	75 33 30	124	S. R.		Oct. 18, 1885	2602	do	1♂ 2♀	14029	Male is holotype.
Do	34 04 00	76 15 30	69	fne. dk. S.	66	Aug. 14, 1902	7313	*Fish Hawk*	1 y.	51063	Soft shell.
Gulf Stream, 30 miles due S. of Cape Lookout Lightship.			(1)					do	1 y.	51034	
South Carolina: East of	33 34 00 to 33 41 00	76 41 00	62–110	S. Sh.		Dec. 12, 1919	20037	*Albatross*	5♂ 3♀ (1 ovig.)	55441	
Florida:											
Off Key West	24 25 45	81 46 00	45	Co.	75	Jan. 15, 1885	2318	do	1 y. ♀	15142	Holotype of *P. atlantica*.
Do	Sand Key Light bearing W. NW., Key West Light, N.		60			June 19, 1893	24	Biol. Exped. State Univ. Iowa.	1♂ 2 y.	Mus. S. U. I.	
Do	Sand Key Light, W. ½ N., about 6½ miles.		20			June 24, 1893	39	do	2 y. ♂	20019	
Off Sand Key	Sand Key Light, N., about 6 miles.		116			June 19, 1893	28	do	1 y. ♂	Mus. S. U. I.	
East of Cape San Blas	28 42 30	85 29 00	88	gy. M.		Mar. 15, 1885	2403	*Albatross*	1♂	16053	
Alabama: South of Mobile Bay.	29 27 30	87 48 30	30	crs. S. bk. Sp. Sh		Mar. 4, 1885	2390	do	2 y.	16044	About 6 mm. long.

[1] About 50 fathoms

Old.—The old have a longer and thicker pile, especially on the chelipeds, which attain a length more than twice as great as the carapace, and are very stout, palm compressed.

Half grown.—Comparing a half-grown male (16053) with Saussure's figure of a little larger specimen of *spinosissima*, *spinimana* is seen to have the greater number of spines, while both have fewer spines than the full grown of the same species. Median spines of *spinimana* 11, 1 more (gastric) than in *spinosissima*. Large anterior hepatic spines only 2 (as in *spinosissima*) but with a small spine or spinule where the innermost large spine occurs in the old.

Young.—Besides the eight specimens above described, all those in the National Museum are very small and immature and present a very different appearance, as at least half of the spines which are evident later are undeveloped. The hepatic region is not enlarged nor produced (in this respect resembling typical *Stenocionops*) and bears only one large marginal spine and a very small one in front of it. There are only 2 large spines on the branchial margin, as in *S. contigua;* one small spine on the postero-lateral margin; 2 or 3 spines high up on the branchial region. Surface of basal antennal article mostly concave.

Measurements.—

	Largest ♂, Sta. 20037	Large ♂, holotype of *spinimana*	Half grown ♂ (16053)	Young ♀, holotype of *atlantica*
Length of carapace, including horns	130	89	53	17.6
Width of carapace, including spines	118.2	76	42	12.6
Width of carapace, excluding spines	110.4	69	35.6	10.4
Length of rostral horns	10.5	10.2	9.5	3.2

Range.—From off Cape Hatteras, North Carolina, to Florida Straits and Gulf of Mexico. Depth, 20 to 124 fathoms.

Material examined.—See table, page 458.

STENOCIONOPS OVATA (Bell

Plate 264, figs. 5–7

Pericera ovata Bell, Proc. Zool. Soc. London, vol. 3, 1835 (1836), p. 173; Trans. Zool. Soc. London, vol. 2, 1836, p. 60, pl. 12, figs. 5, 5*o*, 5*p*, 5*q* (type-locality, Galapagos Islands, 6 fathoms; type not extant).

Stenocionops ovata Rathbun, Proc. U. S. Nat. Mus., vol. 38, 1910, p. 574.

Diagnosis.—Median spines of carapace 8. Lateral marginal spines 4 or 5. Size small. Horns divergent.

Description.—Female: Carapace elongate-oval, sparingly covered with short close hair; four small spines on median line of gastric region, three spines on cardiac and genital regions, the middle one being the largest, one spine on the intestinal, a very small one on

each hepatic, three on the branchial region, and four or five on each lateral margin. The eyes extend beyond the margin of the orbits. Rostrum formed of very divergent horns; at their base a median depression.

Outer spine of basal article of antenna short and triangular; a very small tooth below insertion of second article. (After Bell.)

Color.—A rich, rather light, reddish brown (Bell).

Measurements.—Female, holotype, length 1 inch (25.4 mm.); breadth 6 lines (about 15.2 mm.) (Bell).

Range.—Known only from the Galapagos Islands; 6 fathoms.

STENOCIONOPS MACDONALDI (Rathbun)

Plate 268

Libinia macdonaldi RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 238, pl. 29 (type-locality, Gulf of California, 71 fathoms; holotype male, Cat. No. 16071, U. S. Nat. Mus.).

Diagnosis.—Median spines of carapace 9; none on posterior margin. Two large marginal hepatic spines. Rostrum about one-twelfth length of carapace.

Description of adult.—Shape much as in *S. spinimana*, the hepatic region separately prominent, the after part of the carapace subspherical. Hairy covering a very thick and dense pile. Spines conical, blunt or subacute. Median spines 9: 4 gastric, 1 genital, 2 cardiac, 2 intestinal, none on posterior margin. Of the lateral spines, 2 are hepatic (exceptionally an additional spinule), the anterior the smaller; 3 antero-lateral branchial spines, of which the middle one is the largest; and 2 above postero-lateral margin, the last one of which is the smaller and may be absent. From the first of these a row of 6 low spines extends to the middle of the hepatic region. Another small hepatic spine nearer the margins, sometimes absent. Two large branchial spines, the hinder one in transverse line with the anterior cardiac spine and with the spine at the postero-lateral angle; a smaller, epibranchial spine; one or two small branchial spines (in one case absent on one side) opposite the interval between the 2 cardiac spines; a spine either side of the anterior gastric spine; 1 or 2 pairs of small spines between the orbits. A small subbranchial spine invisible from above and a few pterygostomian spines. Rostral horns short, triangular, outer margins slightly converging. Orbits less open and with shorter spines than in *spinimana*. Basal antennal article with two anterior spines; a spine near outer angle of buccal cavity.

Four spines and a few tubercles on upper margin of merus of cheliped; at subequal distances three other rows of tubercles.

Measurements.—Largest male (16070), length of carapace from tip of rostrum to posterior median spine tip 93, width including spines 83.3, width excluding spines 77.7, length of rostrum 7. 8 mm.

Range.—Gulf of California and Bay of Panama. Depth, 33 to 145 fathoms.

Material examined.—See table, page 462.

STENOCIONOPS TRIANGULATA (Rathbun)

Plate 165, fig. 1; plate 266, fig. 1

Pericera triangulata RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 246, pl. 32, fig. 1 (type-locality, Gulf of California, 29 fathoms; female holotype, Cat. No. 16066, U. S. N. M.).

Stenocionops triangulata RATHBUN. Proc. U. S. Nat. Mus., vol. 21, 1898, p. 577.

Diagnosis.—Median spines 9; none on posterior margin. One hepatic spine. Rostrum about one-sixth length of carapace.

Description of largest specimen.—Known only from small and immature specimens. Carapace triangular-ovate, broader behind in the largest specimen, male, than in the female figured. Median spines 9, distributed as in *macdonaldi*, none on the posterior margin; spines unequal, the largest are the anterior cardiac, the two posterior, and the penultimate gastric. Lateral marginal spines 3, large, 1 hepatic (hepatic region not enlarged), 2 branchial, of which the spine at the postero-lateral angle is the largest and points obliquely backward. From it a curved line of 6 tubercles and spinules stretches to the hepatic region. Two large spines on the elevated portion of the branchial region; a low spine in front of each; a spine on either side of the anterior median spine.

Rostral horns widely divergent, at nearly a right angle, regularly tapering to slender tips. Orbital spines narrow. Basal antennal article 2-spined on anterior margin.

Measurements.—Immature male, largest specimen (21940), length of carapace from tip of rostral horn to tip of posterior median spine 30, width of carapace including spines 22.5, excluding spines 18.6, length of rostral horn 5.3 mm.

Range.—West coast of Lower California; Gulf of California; Bay of Panama. Depth, 13½ to 51½ fathoms.

Material examined.—See table, page 462.

Remarks.—The surprising changes in form and ornamentation between the young and the adult of *S. spinimana*—that is, the gradual development from the typical *Stenocionops* form of the young into the rotund *Libinia*-like form of the adult, with hepatic regions separately distended and produced, the narrowing of the orbital region, the shortening of the rostral horns, and the multiplication of spines—

Material examined of Stenocionops macdonaldi

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
Gulf of California, Mexico:	° ′ ″	° ′ ″			°F						
Off Cape Lobos	29 40 00	112 57 00	76	gn. M	59	Mar. 24, 1889	3016	*Albatross*	3 ♀	16069	
Northwest of Tiburon Island.	29 19 00	112 50 00	145	br. M	54.9	do	3015	do	1 ♂ 1 ♀	16070	
Northwest of Guaymas	28 07 00	111 39 45	71	fne. gy. S. brk. Sh.	57.9	Mar. 23, 1889	3011	do	1 ♂	16071	Holotype.
Panama: Bay of Panama	7 57 00	78 55 00	33	gy. S. bk. Sp. brk. Sh.	64.1	Mar. 5, 1888	2795	do	1 ♀	40630	

Material examined of Stenocionops triangulata

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
West coast of Mexico:	° ′ ″	° ′ ″			°F						
Off Abreojos Point	26 14 00	113 13 00	48	yl. M	53.9	May 3, 1888	2834	*Albatross*	2 ♂	21940	
Magdalena Bay	24 35 20	111 59 35	13.5	S. brk. Sh		Mar. 21, 1911	5678	do	1 y. ♀	55765	
	Sail Rock, Entrada Point, S. 53° W.; Redondo Point, S. 15° W										
Gulf of California	28 28 00	112 04 30	29	gy. S	62.9	Mar. 23, 1889	3014	do	1 ♀	16066	Holotype.
Do	24 55 15	110 39 00	33	fne. gy. S. brk. Sh.	64.5	Mar. 16, 1889	3001	do	1 very young	17364	
Do	24 27 00	111 59 00	47	fne. yl. S	68.5	Apr. 8, 1889	3039	do	1 ♀	18175	
Panama: Bay of Panama	7 56 00	79 41 30	51.5	gn. M		Mar. 30, 1888	2805	do	1 y	21939	

suggests that a similar transformation may occur between young *S. triangulata* and adult *S. macdonaldi:* but until this is proved by intermediate, half-grown individuals, it is best not to assume that the rostrum and orbits can so change with age as shown by comparison of plate 266, figure 1, and plate 268.

Genus MACROCOELOMA Miers

Pericera (part) Milne Edwards, Hist. Nat. Crust., vol. 1, 1834, p. 334.
Macrocoeloma Miers, Journ. Linn. Soc. London, vol. 14, 1879, p. 665; type, *M. trispinosum* (Latreille).

Carapace subpyriform or suboblong, but broadened anteriorly by projecting orbits; dorsal surface unarmed, or tuberculated, or with a few long spines; margins without a series of elongated lateral spines, but often with a strongly developed lateral epibranchial spine, preceded by some smaller spines. Spines of rostrum well developed. Eyes retractile within roomy, projecting, tubular orbits. The antennæ have the basal joint considerably enlarged and armed distally with one or two spines; the mobile portion is sometimes concealed by the rostrum, sometimes exposed. Merus of external maxillipeds broader than ischium and notched at internal angle for insertion of palp.

The chelipeds in the male have the palms enlarged and the fingers either arched and meeting only at tip or in contact throughout. Ambulatory legs rather short.

Occurs from Cape Fear, North Carolina, to Bahia, Brazil, and from Cape St. Lucas, Lower California, Mexico, to Ecuador; also sparingly in the Indo-Pacific region. Low tide to 163 fathoms.

KEY TO THE AMERICAN SPECIES OF THE GENUS MACROCOELOMA [55]

A[1]. Carapace with fewer than 7 spines on its posterior half, or if with 7 spines, some of them are small.
  B[1]. Basal antennal segment armed with only one spine or sharp tubercle.
    C[1]. Rostral horns separated by an interspace which is narrow or pointed at base.
      D[1]. Postero-lateral projections narrow, spinelike____ **trispinosum**, p. 466.
      D[2]. Postero-lateral projections broad, bladelike.
        E[1]. Postero-lateral projections very broad, their margins continuous with marginal lines of carapace___ **trispinosum nodipes**, p. 468.
        E[2]. Postero-lateral projections less broad, their margins making an angle with marginal lines of carapace_ **trispinosum**, variety, p. 468.
    C[2]. Rostral horns separated by an interspace which is broad and rounded at base.
      D[1]. Carapace deeply sculptured or areolated between the two postero-lateral spines. Rostral spines short and stout.
        E[1]. Postero-lateral spines directed obliquely backward. **subparallelum**, p. 480.

[55] *Arctopsis tesselata* White (*nomen nudum*), List Crust. Brit. Mus., 1847, p. 5, from the West Indies, may be a *Macrocoeloma*. Type not in British Museum.

E². Postero-lateral spines directed obliquely forward. **villosum**, p. 482.
D². Carapace not unusually sculptured between the epibranchial spines. Rostral horns longer and slenderer. **diplacanthum**, p. 478.
B². Basal antennal segment armed with 2 or more spines. Orbits elongate-tubular.
C¹. Rostral spines separated by a U-shaped sinus. **eutheca**, p. 484.
C². Rostral spines separated by a V-shaped sinus. Basal antennal segment armed with 2 spines forming an oblique line, the outer spine more or less distant from the orbital margin.
D¹. Rostral horns narrow, tapering regularly from base to tip. A long spine followed by a short spine near distal margin of basal antennal segment. **laevigatum**, p. 483.
D². Rostral horns broad at base, with abruptly narrowed tip. Two long spines near distal margin of basal antennal segment.
E¹. A spine present on the urogastric or anterior cardiac region. Width of carapace across orbital regions much less than across branchial regions. **concavum**, p. 487.
E². No spine on the urogastric or anterior cardiac region. Width of carapace across orbital regions subequal to width across branchial regions. **intermedium**, p. 486.
A². Carapace with 7 strong spines on its posterior half.
B¹. Basal antennal segment armed with only one spine.
C¹. Rostrum nearly horizontal, horns long. Basal antennal spine horizontal and wholly visible from above. **camptocerum**, p. 469.
C². Rostrum strongly deflexed, horns short. Basal antennal spine directed downward, scarcely visible from above. **heptacanthum**, p. 473.
B². Basal antennal segment armed with two spines in a transverse line. **septemspinosum**, p. 477.

Analogous species on opposite sides of the continent: *septemspinosum* (Atlantic), *heptacanthum* (Pacific); *subparallelum* (Atlantic), *villosum* (Pacific).

THE *TRISPINOSUM-DICANTHUM* GROUP

Consists of the so-called species *trispinosum* and *dicanthum*. This group of forms is represented in the Museum by so large a number of specimens that we are enabled to separate them into three series, one series being intermediate between the others in at least two of its characters. In one series (1) (see *trispinosum*, below), the postero-lateral prominences are narrow, regularly tapering spines, projecting beyond the general outline of the carapace and directed more or less backward, sometimes strongly curved from base to tip (concave above). The carapace is considerably constricted behind the orbits. In the next series (2) (see *trispinosum*, variety, below), the postero-lateral prominences are wider than in series 1, less spine-like and more laminate, their hind margins nearly transverse; while the carapace is less narrowed behind the orbits. In the third series (3) (see *trispinosum nodipes*, below) , the postero-lateral prominences are very broad and obtuse, broader than in series 2, their margins almost continuing the direction of the marginal lines of the carapace.

The carapace is very little, sometimes not at all, constricted behind the orbits.

The posterior median spine varies in the three series in a manner similar to that seen in the lateral spines.

In series 1, the four large tubercles or bosses about the middle of the carapace (one gastric, one cardiac, two branchial) are very prominent, and some or all of them have an acute tip, that on the gastric boss occasionally resembling a short spine; in series 2, the bosses run lower and there is a tendency to form a sharp tubercle or granule at the summit of the gastric boss; in series 3, the bosses are still lower and are smoothly rounded and blunt.

Within each series there is great diversity in the length, direction and curvature of the rostral horns. The length varies from one-fifth to over one-third of the length of the remainder of the carapace. The horns may be straight, with their outer margins subparallel (19584, 21930), or converging distally (46915) and the interspace insignificant in the basal half. They may curve strongly outward or upward or both (17959, 50956) toward the tips, and be either almost contiguous at base (43028) or have a narrowly U-shaped interspace (9279, 9280, 15137). This interspace may be regularly V-shaped or nearly so (14004, 46925).

The orbits in series 1 are very prominent, owing to the constriction of the carapace behind them, the upper edge is deeply emarginate, the preocular and postocular teeth strongly marked, the former directed forward and curved. In series 2, the superior emargination of the orbit is less deep, the teeth less strongly marked, although the preocular tooth is directed forward and a little curved. In series 3, the orbit has a very slight emargination in the upper border, the preocular tooth is acute but not prominent, the postocular angle is blunt or subacute but not dentiform in the old; both preocular and postocular teeth incline to greater prominence in the young.

Nomenclature.—The earliest record of this species was made in 1756 by Browne, who called it "*Cancer* 9. The Grass-Crab." There is nothing in his brief diagnosis to indicate which of the three forms described above he had in hand; his figure, however, has very slender postero-lateral spines, as in series 1. Latreille (1825) was the first to give a specific name to the species, *Pisa trispinosa*; his description also applies to series 1, "*trois élévations en forme de petites bosses, terminées en pointe, le long du milieu du dos;* * * * *angles postérieurs prolongés en une épine trè-forte.*" The locality "Nouvelle Hollande?" is an error, which was corrected later (1834) by Milne Edwards. In the mean time another record of the same form, typical *Pisa trispinosa*, was made by Guérin in his "Iconographie," where the slender postero-lateral spines are again shown. Unfortunately A. Milne Edwards gave another specific name,

dicantha or *diacantha*, to this same form, while the *trispinosa* figured by him is of the series 2, described above, which I now call *trispinosum*, variety. The form above called series 3 was not named until 1867 when Desbonne's description and figure were published under the name, *Pericera nodipes*. It must now be known as *Macrocoeloma trispinosum nodipes*.

MACROCOELOMA TRISPINOSUM (Latreille)

GRASS CRAB (Browne). SPONGE CRAB (Jarvis). DECORATOR CRAB (Wilson)

Plate 166, fig. 1; plate 167

Cancer 9, BROWNE, Nat. Hist. Jamaica, 1756, p. 422, pl. 48 (not 46), fig. 2.

Pisa trispinosa LATREILLE, Encyc. Méth., Hist. Nat., vol. 10, 1825, p. 142 (type-locality, *Nouvelle Hollande?* [an error]).

Pericera trispinosa GUÉRIN, Icon. Règne Anim., Crust., pl. 8, figs. 3, 3*a*.—MILNE EDWARDS, Hist. Nat. Crust., vol. 1, 1834, p. 336 (Antilles).—AURIVILLIUS, K. Sv. Vet.-Akad. Hand., vol. 23, pt. 1, 1889, p. 55, pl. 2, fig. 2. Not Gundlach and Torralbas, An. Acad. Habana, vol. 36, 1899 (1900), p. 365, text-fig.; reprint, 1917, p. 21, pl. 5, fig. 12.

Pericera dicantha A. MILNE EDWARDS, Crust. Rég. Mex., 1875, p. 57 (type-locality, Mujeres [not Majores], 12 fathoms; type, Cat. No. 1919, M. C. Z.).

Pericera diacantha A. MILNE EDWARDS, Crust. Rég. Mex., 1875, pl. 15, figs. 3–3 *c*.

Macrocoeloma trispinosa MIERS, Journ. Linn. Soc. London, vol. 14, 1879, p. 665.

Macrocoeloma diacantha MIERS, *Challenger* Rept., Zool., vol. 17, 1886, p. 79.

Macrocoeloma trispinosum RATHBUN, Proc. U. S. Nat. Mus., vol. 21, 1898, p. 576.

Macrocoeloma diacanthum RATHBUN, Proc. U. S. Nat. Mus., vol. 21, 1898, p. 576; Bull. U. S. Fish Comm. for 1900, vol. 20, pt. 2 (1901), p. 74 (part).

Diagnosis.—Rostral horns adjacent and subparallel at base. Postero-lateral projections sharp spines. Four dorsal bosses each with a sharp tubercle at tip.

Description.—Body and appendages covered with very short, brown hairs which form a sort of velvet. Carapace thick and very swollen, wide at line of orbits, narrowing distinctly in hepatic portion, widening again posteriorly. Four large rounded prominences, the anterior or gastric one the highest, forming together a cross in the center of the carapace and each bearing a more or less sharp tubercle at the summit. Front formed of two flattened, sharp horns, which are adjacent and subparallel at base, and distally divergent. Upper margin of orbit deeply emarginate, the ocular and postocular teeth prominent, the former curved forward. Near the inner angle of the basal article of the antenna there is a rather long, oblique spine entirely visible from above; flagellum slender, on either side of the rostrum but not reaching the end of the horns. At the postero-lateral angles of the carapace there is a stout, regularly tapering, sharp spine

which is directed obliquely backward and outward and sometimes curved upward. A short, obliquely erect spine stands on the median line above the posterior margin.

Chelipeds of male narrow, about as long as carapace. Arm nodose, palm with subparallel sides, dactylus about half as long as upper margin of palm. Legs rather slender, slightly nodose.

Measurements.—Male (17959), extreme length of carapace 34, length from rostral sinus to posterior margin 24, extreme width 28.7, width at base of spines 19.4 mm.

Color.—Enveloping hairs yellowish (Milne Edwards) or reddish-brown) (Latreille).

Habits.—Usually concealed by a covering of sponge which adheres to the hairs on carapace and legs. This serves as a protection to the crab, as fish avoid sponges in any form.

FIG. 132.—MACROCOELOMA TRISPINOSUM (43028), MAXILLIPED, × 7

Range.—North Carolina to Yucatan; West Indies; off Cape St. Roque, Brazil. Shallow water to 45 fathoms.

Material examined.—

Beaufort, North Carolina; 10 to 30 feet; station 7943, *Fish Hawk;* 1 young (51062).

Off Beaufort, North Carolina; station 7951, *Fish Hawk;* 1 young (51005).

Off Cape Sable, Florida; lat. 25° 03′ 50″ N.; long. 81° 20′ 30″ W.; 3¼ fathoms; gy. S. Sh.; December 18, 1902; station 7364, *Fish Hawk;* 1 ovigerous female (54459).

Off Mujeres Island, Yucatan; 12 fathoms; coarse coral sand; William Stimpson; 1 female, type of *Pericera dicantha* (1919, M. C. Z.).

Off Contoy Island, Yucatan; 12–18 fathoms; weedy rocks; William Stimpson; 2 immature females, identified by A. Milne Edwards as *P. dicantha* (1920, M. C. Z.).

Cuba; 1914; Henderson and Bartsch, *Tomas Barrera* Expedition: Dimas Bay; May 17; 1 male (48723). Esperanza; May 11; 1 male, 1 female (48652).

Bogue Islands, Montego Bay, Jamaica; 1910: On mangrove roots; June 23; C. B. Wilson; 1 male (43026). On mangrove roots; July 2; E. A. Andrews; 2 males, encrusted with sponges (43027). July 6; E. A. Andrews; 1 young (43025); 2 females, ovigerous and encrusted with sponges (43028). On mangrove roots; July 21; E. A. Andrews (43016).

Kingston Harbor, Jamaica: 1893; R. P. Bigelow; 1 female, covered with polyps (17958); 1 male (17959). May–July, 1896; F. S. Conant; 2 males, 1 female (19584).

Porto Rico; off Boca Prieta; Fanduco Cay, E. 1¾ m.; 8½ fathoms; Co. S.; January 25, 1899; station 6075, *Fish Hawk;* 1 female (24092).

St. Thomas; 1915; C. R. Shoemaker: From piles; 2 males, 2 females (1 ovigerous) (50954). From piles near town; July 7; 1 female, thin shell (50955). Gregerie Channel, between Water Island and St. Thomas; ½–2¾ fathoms; July 7; station 7; 2 females (1 ovigerous) (50956).

English Harbor, Antigua; shore; 1918; Barbados-Antigua Exped. Univ. Iowa; 1 ovigerous female, overgrown with sponge (Mus. S. U. I.).

Port Castries, St. Lucia; November 30, 1887; *Albatross;* 1 male (21930).

Curaçao: 1884; *Albatross;* 1 male, 2 females (1 ovigerous), 2 young (16181). Rifwater. in shallow water, among algae; May 26, 1905; J. Boeke; 1 male (Leiden Mus.). Spanish Water; from mangrove roots; April 8, 1920; C. J. van der Horst; 1 young (56863).

Brazil; off Cape St. Roque; lat. 6° 59′ 30″ S.; long. 34° 47′ 00″ W.; 20 fathoms; brk. Sh.; December 16, 1887; station 2758, *Albatross;* 1 female (21931).

MACROCOELOMA TRISPINOSUM, variety

Plate 168, fig. 1

Pericera trispinosa VON MARTENS, Arch. f. Naturg., vol. 38, pt. 1, 1872, p. 84, pl. 4, figs. 4 *a* and 4 *c*, not 4 *b*, and 4*d*.—A. MILNE EDWARDS, Crust. Rég. Mex., 1873, p. 52, pl. 15, figs. 2 –2*d*.—IVES, Proc. Acad. Nat. Sci. Philadelphia, 1891, p. 178.

Description.—This form links the subspecies *nodipes* to the typical *trispinosum*. The carapace is a little narrowed behind the orbits. The postero-lateral prominences are wider than in typical *trispinosum* and approach the laminate character of *nodipes*. The four central bosses are intermediate in character, as is also the orbital margin.

Color.—Vermilion (Bartsch); bright scarlet (Ives).

Range.—From North Carolina to Gulf of Mexico and Yucatan (Ives); West Indies and Caribbean Sea. Low water to 28 fathoms.

Material examined.—See table, pages 470–471.

MACROCOELOMA TRISPINOSUM NODIPES (Desbonne)

Plate 166, fig. 2; plate 168, fig. 2

Pericera nodipes DESBONNE, in Desbonne and Schramm, Crust. de la Guadeloupe, 1867, p. 15, pl. 5, fig. 13 (type-locality, Guadeloupe; type perhaps not extant).

Macrocoeloma trispinosum VERRILL, Trans. Connecticut Acad. Arts and Sci., vol. 13, 1908, p. 414, text-fig. 44.

Diagnosis.—Postero-lateral projections very broad laminae, margins continuous with those of carapace. Four dorsal bosses smoothly rounded.

Description.—Differs as follows from typical *trispinosum:* The shape of the carapace is different because the carapace is very little, if at all, constricted behind the orbits; the projections at the postero-lateral angles are scarcely spines, but broad, obtuse, laminate lobes whose margins are almost continuous with those of the carapace proper; the posterior median spine is short and blunt. The emargination in the upper border of the orbit is slight, the preocular tooth acute, not prominent, the postocular tooth blunt or subacute. The four bosses in the middle of the carapace are smoothly rounded.

Measurements.—Male (15137), extreme length of carapace 52, extreme width of same 49.4 mm.

Color.—Yellowish (Desbonne). When cleaned, reddish brown (Verrill).

Range.—North Carolina; Florida Keys; Gulf of Mexico; West Indies; Fernando Noronha Island, Brazil; Bermudas. Shore to 26 fathoms.

Material examined.—See table, pages 471-472.

MACROCOELOMA CAMPTOCERUM (Stimpson)

Plate 174, fig. 4; plate 270, fig. 2

Pericera camptocera STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 112 (type-locality, near Key West in from 2 to 5 fathoms; type not extant).—A. MILNE EDWARDS, Crust. Rég. Mex., 1873, p. 57.

Macrocoeloma camptocera MIERS, *Challenger* Rept., Zoöl., vol. 17, 1886, pp. 79 and 80.—RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 249, pl. 33, fig. 2.

Macrocoeloma camptocerum RATHBUN, Bull. Lab. Nat. Hist. State Univ. Iowa, vol. 4, 1898, p. 257.

Diagnosis.—Rostral horns divergent from base. Postero-lateral spines slender. Four dorsal spines present.

Description.—Surface covered with a short, close pubescence, and in addition, longer curved hairs are present on the front, gastric region, and lateral portions of branchial regions. Postero-lateral spines subconical, regularly tapering, acute, and directed slightly backward. Posterior median spine shorter, acute, obliquely erect. Four slender, erect, dorsal spines forming a cross, one gastric, one cardiac, two branchial. Rostral horns rather regularly divergent from their base, acute. The antennae may overreach the horns; the antennal spines, right and left, are very divergent from each other. The orbital tubes are laterally very protuberant as are also the little anterior and posterior spines, the former curving forward a little.

Chelipeds of male strong, longer than carapace; the arms have a few short spinules above, the wrists are a little nodulous and have a tubercle at the inner angle; the palm is widest near the articulations, the fingers are tipped with black or dark brown. Legs slender, nearly smooth.

Material examined of Macrocoeloma trispinosum, variety

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	° ′ ″	° ′ ″			°C						
North Carolina: Off Cape Fear.	33 42 45	77 31 00	17	S. P.		Oct. 20, 1885	2616	*Albatross*	1 ♀	16178	
Bahamas: Green Turtle Cay.								E. A. Andrews	2 ♀	20704	
Florida:											
Miami			10–40 Fect					J. B. Henderson	1 ♂	49085	
Off Biscayne Bay			16–34					Paul Bartsch	1 ovig. ♀	45627	
North of Knights Key Channel.	6 miles N. NE. ½ E. of East Bahia Honda Key.		11	barry		Jan. 22, 1903	7414	*Fish Hawk*	1 ♂	46931	
Key West, on rocks			Low tide					Henry Hemphill.	1 ♂ 1 ♀	9279	
Eastern Dry Rocks						1884		Edward Palmer	1 ♂	9280	
Gulf of Mexico, off Northwest Channel.	24 42 30	81 55 52	7.25	Co	20	Feb. 24, 1902	7293	*Fish Hawk*	1 y	46955	
Dry Tortugas								Edward Palmer	3 ♂ 1 y	14004	
Do			4					J. B. Henderson	1 y	46956	
Florida Reef									1 sm. ♂	1918, M.C.Z.	From Lyceum of Natural History, New York.
Off Cape Sable	25 03 50	81 20 30	3.25	gy. S. Sh.		Dec. 18, 1902	7364	*Fish Hawk*	1 ovig. ♀	46925	With sponge.
West of Marco	26 00 00	82 57 30	24	fne. S. bk. Sp. brk. Sh.		Mar. 19, 1885	2413	*Albatross*	2 ♂ 2 ♀	15136	
					°F						
Off Boca Grande	Boca Grande Light, NE. ½ N., 15½ miles, to NE. ¾ N., 12 miles		12.5	hrd. smooth	68.5	Jan. 2, 1913	10	*Fish Hawk*	1 y	55841	
					°C						
Off Charlotte Harbor	26 33 00	83 10 00	28	sdy.	19.1	Apr. 2, 1901	7123	do	1 ♂ 1 ♀	25594	
Anclote Section	28 08 30	83 10 00	10	rky. Co	13.5	Jan. 23, 1902	7231	do	1 ♂	46921	With sponge and worm tube.
St. Martins section	28 26 30	83 08 00	10	sdy. grsy.	13.6	Jan. 15, 1902	7216	do	1 ♂	46919	
Cuba: Cabanas				S. Sh. Grs. M.		June 8–9, 1914		Henderson and Bartsch, *Tomas Barrera* Exped.	1 ♀	48660	

Jamaica:											
Montego Bay			Piles of wharf			July 5, 1910		E. A. Andrews	1♂	43014	
Eight miles east of Montego Bay.			On coral reef			July 20, 1910		C. B. Wilson	1♂ 1♀	43015	
Kingston Harbor								T. H. Morgan	1♂ 1♀	17202	
Porto Rico:											
Mayaguez Harbor						Jan. 20, 1899		*Fish Hawk*	1♂	24218	
Off Culebra Island	Pt. Mula Lighthouse, SW., ¼ S., 10½ miles		15.25	Co. S	25	Feb. 8, 1899	6087	do	1 y	24215	
St. Thomas:											
St. Thomas						1884		*Albatross*	1♂ 4♀	16180	
Off St. Thomas	Sail Rock, W. by N. ½ N., 6 miles.		20–23	Co	25.8	Feb. 6, 1899	6079	*Fish Hawk*	1 y	24216	
Gregerie Channel, between Water Island and St. Thomas.			5–2.75			July 7, 1915	7	C. R. Shoemaker	2♀	50953	From Carnegie Institution.
Curaçao: Spanish Water						Apr. 3, 1920		C. J. van der Horst.	1♂	Amsterdam Mus.	

Material examined of Macrocoeloma trispinosum nodipes

Locality	Bearings		Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	Latitude N.	Longitude W.									
	° ′ ″	° ′ ″			°F						
North Carolina: Off Cape Fear.	33 37 15	77 35 30	17	ers. yl. S. brk. Sh.		Oct. 20, 1885	2618	*Albatross*	1 y	16179	
Florida:											
Cape Florida								G. Wurdemann	2 ovig. ♀	1917, M. C. Z.	
Dry Tortugas								J. E. Mills	1♂ 1 ovig. ♀	647, M. C. Z.	Covered with sponge and worm tubes.
Off Cape Sable	East end of Sawyer Key, S. ¼ W., 2¼ miles.		4.75	rky		Dec. 22, 1902	7390	*Fish Hawk*	1♂ 1♀	46930	
Do	24 58 05	81 28 30	5	rky		Dec. 19, 1902	7375	do	1♀	46929	With sponge.
Do	25 00 30	81 12 20	2	rky		do	7369	do	1♀	46926	
Do	25 00 40	81 15 37	2.5	rky		do	7370	do	1♂	46927	Do.
Do	25 00 55	81 22 15	4	rky		do	7372	do	1♂ 1 ovig. ♀	46928	Do.
Do	25 06 30	81 12 25	2	rky		Dec. 18, 1902	7356	do	1♂	46923	
Do	25 07 10	81 29 00	5	rky. Co		do	7361	do	2♂ 1♀	46924	With sponge and ascidians.
Do	25 09 45	81 18 35	3.25	rky. Co		Dec. 17, 1902	7351	do	3♂ 3♀ 1 ovig.	46922	

Material examined of Macrocoeloma trispinosum nodipes—Continued

Locality	Bearings		Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	Latitude N.	Longitude W.									
Florida—Continued.	° ′ ″	° ′ ″			°F						
Off Sanibel Island	Bell buoy off Sanibel Id. Light, N. E., 10-2½ miles.		4.75—7	Sh.	67	Jan. 1, 1913	9	*Fish Hawk*	1 ♀	50979	
Northwest of Charlotte Harbor.	27 04 00	83 21 15	26	ers. gy. S. brk. Sh.	°C	Mar. 18, 1885	2409	*Albatross*	1 y. ♂	16055	
Highland section	27 55 30	83 11 30	13	Co. R	15.2	Jan. 28, 1902	7253	*Fish Hawk*	1 y	46951	
St. Martins section	28 31 45	83 08 00	5.75	Co. R. Grs	12.5	Jan. 15, 1902	7221	do	2 y	46953	
Do	28 41 00	83 15 15	8.5	rky	13.5	Jan. 17, 1902	7226	do	1 ♂	46920	With sponge.
North Key section	28 47 55	83 16 30	8	rky. grsy	17	Dec. 9, 1901	7211	do	1 ♀	46918	
Do	28 52 45	83 07 00	5.75	rky	16.1	do	7209	do	1 ♂	46917	With sponges.
Do	28 55 30	83 02 00	4	rky	15.3	do	7208	do	2 ♀	46916	Do.
Cedar Keys						Feb., 1887		Lieut. J. F. Moser, U. S. N., U. S. C. S. S. *Bache*.	1 ♂	15137	
Deadmans Bay section	29 39 30	83 53 10	7.5	S. Co	21.5	Nov. 7, 1901	7152	*Fish Hawk*	1 ♀	46914	
Aucilla section	29 44 09	84 06 30	7	R. Co	16.5	Dec. 5, 1901	7193	do	1 ♂	46915	With sponge.
Cuba: Reef Lavesos Italienos, opposite Cayo Lavesos.						June 2, 1914	14	Henderson and Bartsch, *Tomas Barrera* Exped.	1 ovig. ♀	48678	
Porto Rico: Ensenada Honda, Culebra Island.						Feb. 9, 1899		*Fish Hawk*	1 y	24217	
Antigua: English Harbor			Shore.			1918		Barbados-Antigua Exped. Univ. Iowa.	1 ♂ 1 y	Mus. S. U. I.	
Brazil: Fernando Noronha Island.						1876–1877		R. Rathbun, Hartt Explor.	1 ♀	19961	

Measurements.—Male (46912), total length of carapace (to tips of spines) 40, length from sinus between rostral horns to margin of carapace 29.5, total width 36, width measured from anterior base of postero-lateral spines 22.5 mm.

Variations.—The rostral horns may be straight or slightly curved (convex to each other); in length they range from one-sixth (15139) to one-third (male, 46899) or more of the total length of the carapace. The interspace varies from rather a narrow V (male, 46899) to almost a right angle (46912). The postero-lateral spines may be straight or curved (concave) upward (46901, 46884); and nearly transverse (46912) or occasionally directed strongly backward (46887).

Range.—North Carolina; south and west Florida. 2 to 12½ fathoms.

Material examined.—See table, pages 474–476.

MACROCOELOMA HEPTACANTHUM (Bell)

Plate 173, fig. 1; plate 269, figs. 8–11

Pericera heptacantha BELL, Proc. Zool. Soc. London, vol. 3, 1835 (1836), p. 173 (type-locality, Puerto Portrero; type not extant); Trans. Zool. Soc. London, vol. 2, 1836, p. 61, pl. 12, figs. 6 (colored), 6*r*–6*u* (Puerto Portrero, Central America, on sand, 13 fathoms).

Macrocoeloma heptacantha MIERS, *Challenger* Rept., Zool., vol. 17, 1886, pp. 79 and 81.—RATHBUN, Proc. U. S. Nat. Mus., vol. 21, 1898, p. 576.

Diagnosis.—Seven large spines on posterior half of carapace. Front strongly deflexed; horns short. Basal antennal spine not visible in dorsal view.

Description.—Carapace suboblong, being proportionally wider just behind the orbits and narrower across the postero-lateral angles than in *M. camptocerum*. The seven spines of the hinder half are not very unequal, and five of them form a nearly transverse line across the carapace; they are the two pairs of branchial spines and the cardiac spine. Of the three median spines the gastric and the cardiac are erect, the intestinal spine is curved and directed upward and a little backward. The inner branchial spine points upward, outward and backward; the postero-lateral spine points slightly backward in a horizontal plane.

From the gastric spine the anterior half of the carapace including the rostrum slopes steeply downward; horns short, acute and widely divergent. This is the case in the specimens examined. In Bell's figure of the adult the horns although widely separated are less oblique, the interspace being more U-shaped. The orbits are turned outward and a little forward; the upper and lower margins are deeply incised, the anterior and posterior teeth are acute. In Bell's figure[56] there is a good-sized marginal, hepatic spine; he does not mention

[56] Trans. Zool. Soc. London, vol. 2, 1836, pl. 12, fig. 6.

Material examined of Macrocoeloma camptocerum

Locality	Bearings		Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	Latitude N.	Longitude W.									
North Carolina:	° ′ ″	° ′ ″			°C						
Beaufort Harbor			3.5			Sept. 6, 1913	7942?	*Fish Hawk*	1 y. ♀	51023	
Fishing ground, off Beaufort.	Course NW. by W., toward buoy.		15	rough		Aug. 11, 1914	8211	do	1 ovig. ♀	51028	
Florida:			*Feet*								
Biscayne Bay	1 mile N. of Feather Bed Bank.		11	S. Grs		Mar. 7, 1903	7481	do	1 ♀	46911	With Rhizocephalid parasite.
Card Sound	1½ miles N. of Pumpkin Key.		10	barry		Mar. 10, 1903	7493	do	1 ♂ 2 ovig. ♀ 1 y.	46912	
			Fathoms								
Hawk Channel	1¾ miles S. ¾ E. of Pigeon Key.		3	S. Grs	23.5	Jan. 27, 1903	7426	do	1 ♀	46905	
			Feet								
Do	3⅛ miles N. ¾ E. of Sombrero Light.		11.5	rky		do	7427	do	1 ovig. ♀	46906	
Do	1 mile N.NW. ½ W. of East Washerwoman Key.		16	rky		do	7428	do	1 ovig. ♀	46907	Covered with sponge.
Do	½ mile SE. by S. of SE. end of Duck Key.		14	rky		do	7429	do	4 ♀ (1 ovig.)	46908	
			Fathoms								
Do	1¼ miles S. by W. of SE. point of Long Key.		2.5	barry		Feb. 18, 1903	7463	do	1 ♂ 1 ♀	46909	
Do	1⅛ miles E. by S. of W. end of Lower Metacumbe.		3	barry		do	7464	do	1 y. ♂	46951	
Do	1½ miles E. of Tea Table Key.		2.5	barry		Feb. 19, 1903	7466	do	1 y	46952	
Do	¼ mile SW. by S. of Basin Hill Beacon.		2	S. Grs		do	7469	do	1 ♂ 2 ♀ (1 ♀ soft shell, 1 ♀ ovig.)	46910	With sponges.
			Feet								
Pigeon Key Lake	1½ miles NW. of Knights Key.		10.5	rky		Jan. 7, 1903	7409	do	1 ♂ 1 ♀	46903	
North of Knights Key Channel.	3 miles NE. by N. of East Bahia Honda Key.		11	rky		Jan. 22, 1903	7412	do	1 ♀	46904	
Do	2 miles NE. by E. of Basin Bank.		8.5	rky		do	7417	do	1 ♂	46950	
Indian Key			(1)	R				H. Hemphill	1 ♀	15140	

Gulf of Mexico, off Northwest Channel.	24	44	50	81	55	50	10.25	hrd. smooth	19	Feb. 24, 1902	7292	*Fish Hawk*	1 ovlg. ♀	46890	
Do	24	42	30	81	55	52	7.25	Co	20	do	7293	do	1 y	46949	
Do	24	38	40	81	56	28	5.25	Co	19.5	do	7295	do	1♂	46891	
Key West										1885		*Albatross*	1♂	15141	
Off Key West, inside the reef.	Key West Light to East Channel Bar Buoy, 71° 53′; to Beacon "A," 74° 46′.						5.25	co. S. Grs	20	Feb. 13, 1902	7278	*Fish Hawk*	1♀	46889	
Off Cape Sable	25	09	45	81	18	35	3.25	rky. Co		Dec. 17, 1902	7351	do	2♀	46892	
Do	25	09	52	81	21	53	3.75	gy. S. Sh		do	7352	do	1♂ 1 y. ♀	46893	♂ encrusted with bryozoans and hydroids.
Do	25	06	30	81	12	25	2	rky		Dec. 18, 1902	7356	do	1♂ 1♀	46894	The female has male abdominal appendages and a young Rhizocephalid parasite.
Do	25	07	05	81	25	50	4.5	gy. S		do	7360	do	1♂	46895	
Do	25	07	10	81	29	00	5	rky. Co		do	7361	do	1 y. ♀	46896	
Do	25	00	30	81	12	20	2	rky		Dec. 19, 1902	7369	do	1 y. ♀	46897	With ascidian attached.
Do	25	00	40	81	15	37	2.5	rky		do	7370	do	3♀ 2 y	46898	The largest bears sponges.
Do	25	00	55	81	22	15	4	rky		do	7372	do	1♂ 1♀	46899	With ascidian.
Do	25	01	00	81	25	30	4.5	speckled S. Sh		do	7373	do	1♂	46900	With sponge.
Do	24	58	05	81	28	30	5	rky		do	7375	do	2♂ 1♀	46901	
Do	E. end of Sawyer Key, bearing S. ¼ W., 2¼ miles.						4.75	rky		Dec. 22, 1902	7390	do	1♂ 2♀	46902	
Do												Lieut. J. F. Moser, U. S. Navy, U. S. C. S. S. *Bache*.	1♂	13757	
Marco										1885		H. Hemphill	2♀	15139	
Highland section	27	49	30	83	02	45	7.75	S	15	Jan. 28, 1902	7256	*Fish Hawk*	1♀	46888	
Anclote section	Anclote Light bearing E. ⅞ N., 21½ miles.						12.5	R. Co. S	17.2	Mar. 28, 1901	7106	do	1 y	25595	
Do	28	19	30	83	01	00	6.25	rky. Grs	12.5	Jan. 24, 1902	7239	do	1♂	46887	
Do	28	13	30	83	04	30	6.75	S. brk. Sh	13	do	7244	do	1 y	46948	
St. Martins section	28	27	15	83	19	00	10.5	rky. sdy	14	Jan. 15, 1902	7218	do	1♀	46885	The posterior and the left of the four dorsal spines are absent.
Do	28	33	30	83	19	00	9	sdy. grsy	13.6	do	7219	do	1♂	46886	
Do	28	42	30	83	09	45	7	S. brk. Sh. Grs.	12.2	Jan. 17, 1902	7225	do	1 y	46947	

[1] Near low tide.

Material examined of Macrocoeloma camptocerum—Continued

Locality	Bearings		Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	Latitude N.	Longitude W.									
	° ′ ″	° ′ ″	*Feet*		°C						
Florida—Continued.											
Off St. Martins Reef	28 43 00	82 56 00	17			1887		Licut. J. F. Moser, U. S. Navy, U. S. C. S. S. *Bache.*	1♂ 1 ovig. ♀	13055	
Off northwest end St. Martins Reef	Near 28 50 00	Near 83 00 00				1887		do	1♀ 2 y	13013	
Off Florida Banks	28 56 00	82 55 00	19			Apr. 3, 1887		do	2♀	13064	
			Fathoms								
North Key section	28 57 30	82 58 00	3	rky	15.5	Dec. 9, 1901	7207	*Fish Hawk*	2♂ 2♀	46883	
Do	28 47 55	83 16 30	8	rky, grsy	17	do	7211	do	1♂	46884	
Cedar Keys						Feb., 1887		Licut. J. F. Moser, U. S. Navy, U. S. C. S. S. *Bache.*	2♂ 2♀	15138	
Pepperfish Key section	29 21 00	83 32 00	6.75	rky	16.7	Nov. 21, 1901	7160	*Fish Hawk*	1 y. ♂	46945	
Do	29 18 00	83 37 00	8	rky	18	do	7161	do	1♀	46880	
Do	29 13 15	83 32 30	7.25	rky	17.2	do	7165	do	1♂	46881	Soft shell.
Deadman's Bay section	29 32 30	83 50 00	19	R. Co	16.6	Dec. 6, 1901	7201	do	1 y. ♂	46946	
Aucilla section	29 34 00	84 07 20	10.5	R. Co	17.6	Dec. 5, 1901	7195	do	1♀	46882	

this spine, nor is it existing on the two specimens, both young, which I have examined. There is, however, a subhepatic spine, not visible in dorsal view, which is directed downward and a little outward.

On the basal antennal segment there is a slender-pointed spine outside the insertion of the next segment. This spine is not visible from above, on account of the inclination of the front. On the ventral surface of the carapace, just outside the postero-external angle of the basal segment there is a small spine and behind it a spine at the angle of the buccal cavity. These three spines are in the same longitudinal line.

The arm of the cheliped has a slender spine at either end of the outer margin; the wrist is rough with small, low tubercles.

Color.—Light brown covered with darker hair; first pair of feet reddish (Bell).

Measurements.—Length, 1 inch 5 lines (38 mm.), width, including the lateral spines, 1 inch 7 lines

(43 mm.) (Bell). Young female (21933), total length 10.6, total width of carapace 10.6 mm.

Range.—From Cape St. Lucas, Lower California, Mexico, to Panama Bay. 13 to 31 fathoms.

Material examined.—

Off Cape St. Lucas; lat. 22° 52′ 00″ N.; long. 109° 55′ 00″ W.; 31 fathoms; rky.; temp. 74.1° F.; May 1, 1888; station 2829, *Albatross;* 1 young female (21933).

Panama Bay; lat. 8° 10′ 30″ N.; long. 78° 50′ 30″ W.; 18 fathoms; gy. S. brk. Sh.; Mar. 5, 1888; station 2798, *Albatross:* 1 young female (21932).

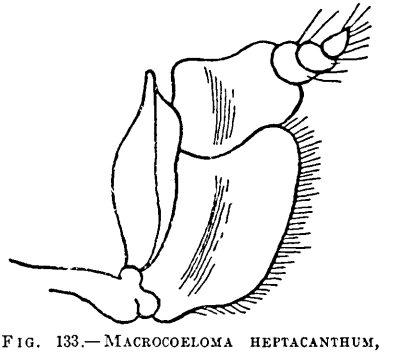

FIG. 133.—MACROCOELOMA HEPTACANTHUM, MAXILLIPED (AFTER BELL)

MACROCOELOMA SEPTEMSPINOSUM
(Stimpson)

Plate 173, figs. 2 and 3

Pericera septemspinosa STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 113 (type-locality, west of Tortugas, 36 fathoms; type not extant).—A. MILNE EDWARDS, Crust. Rég. Mex., 1873, pp. 59 and 200, pl. 15 A, figs. 2–2*c*.—Perhaps *Pericera septemspinosa* GUNDLACH and TORRALBAS, An. Acad. Habana, vol. 36, 1899 (1900), p. 366, text-fig.; reprint, 1917, p. 21, pl. [5], fig. 13.

Macrocoeloma septemspinosa MIERS, *Challenger* Rept., Zool., vol. 17, 1886, pp. 79 and 80.

Diagnosis.—Seven sharp spines on posterior half of carapace. A prominent subhepatic spine. Preocular spine erect. Rostral horns divergent.

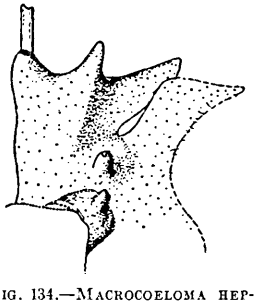

FIG. 134.—MACROCOELOMA HEPTACANTHUM, FEMALE (21932), BASAL ANTENNAL ARTICLE, WITH POSTORBITAL LOBE, × 12

Description.—Carapace oblong-triangular, strongly convex, pubescent and hairy; antero-lateral and postero-lateral sides concave. Dorsal surface armed with seven prominent spines, one on the gastric, one on the cardiac, one on the intestinal, and two on each branchial region in line with the cardiac spine; spine at lateral angle transverse. Rostrum about one-fifth as long as the entire carapace, deflexed; horns subtriangular, curved, acute, divergent, pointing obliquely outward. Orbits projecting obliquely forward, outward and upward, with a prominent, acute, preocular and postocular spine, the former suberect, and much more elevated than the postocular

spine. Suborbital, subhepatic and antennal regions armed with six spines of which the four anterior are small, the two posterior large; of the small spines one is situated at the insertion of the movable part of the antenna, and three (two antennal and one orbital), form a longitudinal row; one of the large spines is near the outer angle of the buccal cavity, the other further back and out.

Chelipeds of adult male rather slender, about as long as carapace. Arm with two conical spines above, one terminal, one near proximal end, also a line of three or four tubercles beneath, and two tubercles on the outer surface. Proximal half of fingers gaping, a large tooth at base of dactyl. Merus of ambulatory legs with a conical tooth above at articulation with carpus.

Measurements.—Male (15128), length of carapace measured to posterior margin 21.5, length of horn 4, width of carapace between tips of lateral spines 26.6, width just in front of these spines 17.3 mm. Female (15131), length of carapace 24, greatest width 27.7 mm. Female (Miers), length 41, width 32.5 mm.

Range.—South Carolina to Gulf of Mexico; Bahia, Brazil (Miers). Shallow water to 79, exceptionally 116, fathoms.

Material examined.—See table, page 479.

MACROCOELOMA DIPLACANTHUM (Stimpson)

Plate 169, fig. 1; plate 269, figs. 1–3

Pericera diplacantha STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 7, 1860, p. 183 (type-locality, St. Thomas; type not extant).—SCHRAMM, in Desbonne and Schramm, Crust. Guadeloupe, 1867, p. 16, pl. 5, figs. 16–18.—A. MILNE EDWARDS, Crust. Rég. Mex., 1873, p. 55, pl. 13, fig. 2.

Macrocoeloma diplacantha MIERS, *Challenger* Rept., Zool., vol. 17, 1886, p. 79.

Macrocoeloma diplacanthum RATHBUN, Bull. U. S. Fish Comm., vol. 20 for 1900, pt. 2 (1901), p. 74.

Diagnosis.—Postero-lateral process bifid. Rostral horns subparallel. Five conical, dorsal tubercles.

Description.—Surface ornamented with rows of long, curved hairs, one row leading from each branchial region forward along the upper surface of the rostrum, another row along the sides of the carapace. Carapace narrow, subtrigonal, much elevated. Four conical tubercles form almost a rectangle near the center of the carapace, while a fifth, more spiniform elevation occupies the intestinal region. Postero-lateral process rather long, flattened and double, seeming to consist of two spines, one above the other, connected nearly to their tips by a web-like connecting lamina, concave anteriorly, convex posteriorly. Antero-lateral margin concave, unarmed except with a small hepatic tubercle. Gastric region strongly inclined anteriorly, with the frontal region (Stimpson). The rostrum is long, varying from nearly one-third to two-fifths of the entire length of the carapace; horns

Material examined of Macrocoeloma septemspinosum

Locality	Bearings		Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.
	Latitude N.	Longitude W.								
	° ′ ″	° ′ ″			°F					
South Carolina: East of Cape Romain.	32 55 00	77 54 00	79	crs. S. bk. Sp	59.1	Jan. 5, 1885	2311	*Albatross*	1♂ 1♀	15127.
Bahamas: Bahama Banks						May 18, 1893		State Univ. Iowa Exped.	1♀	Mus. S. U. I.
Florida:										
Off Key West	24 25 45	81 46 00	45	Co	75	Jan. 15, 1885	2318	*Albatross*	1♂ 1♀	15129.
Do	24 25 45	81 46 45	45	Co	75	do	2317	do	1♂ 1♀	15128.
Do	Sand Key Light bearing W. NW., Key West Light bearing N.		60			June 19, 1893	24	State Univ. Iowa Exped.	4♂ 3♀	Mus. S. U. I.
Do	Sand Key Light bearing NW. by N., Key West Light, N. ½ E.		50-60			do	27	do	2 y	Mus. S. U. I.
Off Sand Key	Sand Key Light bearing N., about 6 miles.		116			do	28	do	1♂	Mus. S. U. I.
South of Dog Island	28 47 30	84 37 00	24	Co. brk. Sh		Mar. 15, 1885	2407	*Albatross*	1♂	15135.
South of St. George Island	28 46 00	84 49 00	26	crs. S. Co		do	2406	do	3♀	15134.
South of Cape St. George	28 45 00	85 02 00	30	gy. S. brk. Co		do	2405	do	3♀	15133.
Southwest of Cape San Blas.	29 14 00	85 29 15	25	Co		Feb. 7, 1885	2373	do	1♀	15132.
Do	29 15 30	85 29 30	27	G		do	2372	do	2♀	15131.
Do	29 18 15	85 32 00	25	crs. gy. S. brk. Sh.		do	2370	do	1♂ 1♀	15130.

long, slender, acute, slightly divergent, and connected at base by a thin lamina. Anterior spine of basal antennal joint minute. Orbital tubes moderately protuberant, their anterior and posterior angles rounded.

Measurements.—Male (43012), length of carapace 21, length of horn 8, width of carapace between tips of postero-lateral spines 12.8 mm. Female (9365), length of carapace 28, length of horn 9, width of carapace between tips of postero-lateral spines 23.2 mm. Male (Schramm), length of carapace 36, width 29 mm.

Range.—Key West, Florida; Bahamas; West Indies and Caribbean Sea. Shallow water.

Material examined.—

Key West, Florida; 1885; H. Hemphill; 1 female (9365).

Off Little Cat Island, Bahamas, on the submerged bank connecting it with Eleuthera; 3 to 13 fathoms; 1893; station 68, State Univ. Iowa Exped.; 1 male (Mus. S. U. I.).

Reef Lavesos Italienos, opposite Cayo Lavesos, Cuba; June 2, 1914; Henderson and Bartsch, *Tomas Barrera* Exped.; 1 female (48677), with Rhizocephalid parasite.

Montego Bay, Jamaica; 1910; E. A. Andrews: Dredged off Montego Bay Point; June 25; 1 female, with Rhizocephalid parasite (43013); June 28; 1 male (43024). Bathing beach; July 19; 1 male (43012).

Port Antonio, Jamaica; specimens identified for the Institute of Jamaica, Kingston.

Porto Rico; 1899; U. S. Fish Commission: February 1; Playa de Ponce Reef; 1 young (24115). February 9; Ensenada Honda, Culebra; 2 females (24093). February 11; Culebra; 1 male (24119).

St. Croix; specimens in Copenhagen Mus.

St. Thomas; 1884; *Albatross;* 1 male (16182).

Guadeloupe; Saussure; specimens in Geneva Mus.

Curaçao: Caracas Bay; encrusted with algae; April 19, 1920; C. J. van der Horst; 1 male (Mus. Amsterdam).

Old Providence, Caribbean Sea; 1884; *Albatross;* 1 young (9136).

MACROCOELOMA SUBPARALLELUM (Stimpson)

Plate 172

Pericera subparallela Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, 1860, p. 182 (type-locality, St. Thomas; cotypes, Cat. Nos. 1227 and 1243, M. C. Z.).—A. Milne Edwards, Crust. Rég. Mex., 1873, p. 54, pl. 13, fig. 3.

Pericera vilpini Desbonne and Schramm, Crust. de la Guadeloupe, 1867, p. 12, pl. 5, figs. 14 and 15 (type-locality, *les côtes rocheuses de la Guadeloupe; trouvé au Moule;* type perhaps not extant).

Macrocoeloma subparallela Miers, *Challenger* Rept., Zool., vol. 17, 1886, p. 79.

Macrocoeloma subparallelum RATHBUN, Bull. U. S. Fish Comm., vol. 20 for 1900, pt. 2 (1901), p. 74.

Diagnosis.—A row of seven short spines or sharp tubercles on the dorsum between the postero-lateral angles. Posterior part of carapace eroded. Rostral horns subparallel.

Description.—Carapace broad, triangular, covered with a short, vesicular pubescence. A band of curved hairs extends from tip of rostrum to middle of branchial region; a similar band on antero-lateral margin. A sharp tubercle on mesogastric region. Posterior third of carapace finely eroded. Protuberances at lateral angles triangular, flat, acute; between them a row of five protuberances, of which the submedian pair is small, and the median one is high and occupies the cardiac region; a smaller median spine or tubercle on the intestinal region. Rostrum about one-fourth as long as entire length of carapace, the horns connected behind by a thin expansion of the front, subparallel or sometimes divergent, and widely separated by a more or less U-shaped sinus; this sinus is devoid of crispate setae. Orbital tubes directed obliquely outward and forward, the preocular spine acute, stouter but less advanced than the spine at the antero-internal angle of the basal antennal segment. The antennal spine is visible in dorsal view, but the peduncle is hidden by the rostral horns.

Chelipeds very strong in the adult male and as long as carapace; two rows of tubercles on outer surface of arm and wrist, one row on palm; palms broad, compressed; fingers stout, unevenly gaping except at the dark brown, crenulated tips; dactylus with a shallow subbasal tooth.

Abdomen and sternum of both sexes sculptured.

Color.—Brownish-yellow (Desbonne).

Measurements.—Male (48666), length of carapace 34.3, length of horn 8.1, width of carapace between tips of postero-lateral laminae 29.5 mm. Male (Schramm), length of carapace 41, width between tips of postero-lateral laminae 36. Female (24200), length of carapace 31, length of horn 6.3, width of carapace 27.8 mm.

Range.—West Indies; Caribbean Sea.

Material examined.—

Cuba; 1914; Henderson and Bartsch, *Tomas Barrera* Expedition: Between Cape San Antonio and Cape Cajon; 2 to 12 fathoms; on bottom varying from pure sand to weedy; May 24; station 12; 1 young (48741). Cabañas; June 8–9; station 16; 1 male (48666); caught by copper sulphating on reef.

Jamaica; specimens in Institute of Jamaica.

Haiti; Dr. Weinland; 1 female (323, M. C. Z.).

Porto Rico; 1899; *Fish Hawk:* Guanica Bay, on coral reef; January 28; 1 male (24139). Playa de Ponce Reef; Feb. 1; 1 male (24140). Ponce; 1 male (24141). Fajardo; Feb. 17; 2 males, 1 female (24200).

St. Thomas: 1884; *Albatross;* 1 female (16183). A. H. Riise; 1 immature female, cotype (1227, M. C. Z.), 1 male, cotype (1243, M. C. Z.); received from Smithsonian Institution.

Guadeloupe; Saussure; specimens in Geneva Mus.

Barbados; 1918; Barbados-Antigua Expedition, University of Iowa: 1 female (Mus. S. U. I.). Bathsheba; 1 ovigerous female (Mus. S. U. I.). Pelican Island; tide pools; May 11; 1 immature female (Mus. S. U. I.). Shallow water, under large anemone; 1 ovigerous female (Mus. S. U. I.).

Old Providence Island, Caribbean Sea; 1884; *Albatross;* 1 female (16184).

MACROCOELOMA VILLOSUM (Bell)

Plate 269, figs. 4–7

Pericera villosa Bell, Proc. Zool. Soc. London, vol. 3, 1835 (1836), p. 173 (type-locality, Gulf of Guayaquil; type not extant); Trans. Zool. Soc. London, vol. 2, 1836, p. 59, pl. 12, figs. 4, 4 *k-n*.—Nobili, Boll. Mus. Zool. Anat. Comp. R. Univ. Torino, vol. 16, No. 415, 1901, p. 30.

Pericera fossata Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, 1860, p. 181 (type-locality, Cape St. Lucas; type not extant).

Macrocoeloma villosa Miers, *Challenger* Rept., Zool., vol. 17, 1886, p. 79.

Macrocoeloma villosum Rathbun, Proc. U. S. Nat. Mus., vol. 38, 1910, pp. 574 and 616.

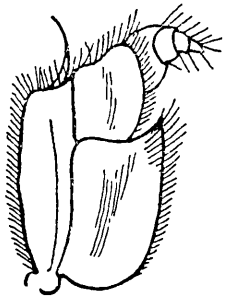

Fig. 135.—Macrocoeloma villosum, Guayaquil, maxilliped. (After Bell)

Diagnosis.—Postero-lateral spines directed forward. Protuberances of carapace deeply separated. Rostral horns very divergent.

Description (after Bell and Stimpson).—Surface everywhere covered with a uniform short, dense, closely adhering pubescence. A few curled setae on the rostrum, and on the concave antero-lateral slopes of the carapace. Lateral processes long, blunt, and a little curved forward. The regions of the carapace are protuberant and separated by very deep sinuous pits or channels, appearing somewhat as if eaten out; but the protuberances themselves are not vermiculated. Rostrum as long as distance between eyes; the horns diverge, the distance between their tips equaling about two-thirds or three-fourths that between the orbits.

Spine of basal segment of antennae slender, reaching considerably beyond the preorbital tooth.

The abdomen of the female has a deep, vermiculated furrow on each side of the median rounded ridge; also channeled sutures.

Color.—Male, brown red, red predominating on outer surface; female, darker brown, without any admixture of red (Bell). Female, dark buff, inclining to brownish (Stimpson).

Measurements.—Length, 1 inch 7 lines (43.18 mm.), width the same, including the lateral spines each of which measures 3 lines (7.62 mm.) (Bell). Female, length 1.32 inch (33.53 mm.), width 1.2 inch (30.48 mm.) (Stimpson). Male, entire length of carapace 45.5, width 46 mm.; female, length 35, width 36.5 mm. (Nobili).

Range.—Cape St. Lucas, Lower California, to Ecuador.

Localities recorded.—

Cape St. Lucas, Lower California (Stimpson). Bay of Santa Elena, Ecuador (Nobili). Bay of Guayaquil, Ecuador; 11 fathoms, on sandy mud (Bell).

MACROCOELOMA LAEVIGATUM (Stimpson)

Plate 169, figs. 2 and 3

Pericera laevigata STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 7, 1860, p. 181 (type-locality, St. Thomas; type not extant).—A. MILNE EDWARDS, Crust. Rég. Mex., 1873, p. 56; 1875, pl. 15, figs. 1–1*c*.

Pericera curvicorna DESBONNE, in Desbonne and Schramm, Crust. de la Guadeloupe, 1867, p. 14, pl. 5, fig. 19 (type-locality, Moule, Guadeloupe; cotype in Paris Mus.).

Macrocoeloma lævigata MIERS, *Challenger* Rept., Zool., vol. 17 1886, p. 80.

Diagnosis.—Branchial width not much greater than orbital. No large spines on posterior half of carapace. A long, curved, antennal spine visible from above.

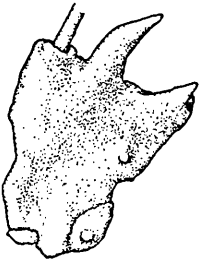

FIG. 136.—MACROCOELOMA LAEVIGATUM, MALE (46933), BASAL ANTENNAL ARTICLE. × 6.66

Description.—Carapace ovate-oblong, convex. Surface covered with a short pubescence and partly with long, curled hairs. Back and sides rounded. Spines and tubercles small and few; a small spine at the summit of the low, cardiac cone; a stouter spine on the intestinal region; a spine on each branchial region a little above the postero-lateral margin but not at the widest part of the carapace; a large, blunt tubercle near the hepatic border of each gastric region; a small branchial tubercle either side of the cardiac region and behind its middle. Orbital tubes large, nearly transverse, the preocular and postocular teeth subequal, the latter more produced. Rostrum between a fourth and a fifth of the length of the carapace, deflexed, curving downward (concave below); horns occupying about two-thirds of the length, regularly tapering, acute, divergent. Movable part of antennae longer than rostrum; spine of basal article large, prominent, exposed from above, divergent from the rostrum and much nearer the orbital tubes; a short, acute spine is situated at the antero-external angle and overlaps the preocular

spine; further back a small blunt spine. On the lower surface of the carapace an acute spine just outside the basal segment of the antenna, and a row of three tubercles on the pterygostomian region.

The merus of the chelipeds has a row of conical spines above and a row of tubercles on the outer surface and the lower, outer margin. Carpus tuberculate, manus smooth, digits gaping in their basal third or two-fifths.

Color.—Yellowish (Desbonne); hands crimson, distal half of fingers black except the tips which are white (Stimpson).

Measurement.—Male (46933), length of carapace 25, length of horn 5.8, width of carapace 14 mm.

Range.—Florida Keys; West Indies.

Material examined.—

Florida: Hawk Channel; ½ mile SE. by S. of SE. end of Duck Key; 14 feet; rky.; January 27, 1903; station 7429, *Fish Hawk;* 1 male (46933).

Cuba; 1914; Henderson and Bartsch, *Tomas Barrera* Expedition: Between Cape San Antonio and Cape Cajon; 2 to 12 fathoms; on bottom varying from pure sand to weedy; station 12; 1 female (48740). Bahia Honda; June 7; 1 female (48673).

Jamaica: Port Antonio; J. E. Duerden, collector; Institute of Jamaica; 1 male (21235).

St. Thomas; 2 small males (Copenhagen Mus.).

Guadeloupe; Saussure; 1 male, 1 female (Geneva Mus.).

MACROCOELOMA EUTHECA (Stimpson)

Plate 170, fig. 1; plate 171, fig. 1

Pericera euthcca STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 112 (type-localities, off French Reef, 15 fathoms, and west of Tortugas, 37 fathoms; types not extant).—A. MILNE EDWARDS, Crust. Rég. Mex., 1873, pp. 58 and 200, pl. 15A, figs. 1–1c. Not Aurivillius, K. Sv. Vet.-Akad. Hand., vol. 23, pt. 1, 1889, p. 55, pl. 2, fig. 1.

Macrocoeloma eutheca MIERS, *Challenger* Rept., Zool., vol. 17, 1886, pp. 80 and 82.—Not Rathbun, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 251.—RATHBUN, Bull. Labor. Nat. Hist. State Univ. Iowa, vol. 4, 1898, p. 257.

Diagnosis.—Rostral spines separated by a U-shaped sinus. Carapace much constricted behind orbits. Orbital tubes very long.

Description.—Carapace subtrapezoidal, very narrow behind orbits. A spine on gastric, cardiac and intestinal prominences, a spinule at summit of branchial region, and one strong spine at lateral angle, directed outward and backward, and in line with cardiac spine. Rostrum small, horns slender, parallel for at least one-half their length, interspace U-shaped, tips slightly divergent. Orbital sheath directed obliquely forward, upward and outward, and prolonged well beyond the ventral face of the basal antennal article; its margin is

provided with four spines or teeth, one preocular, one postocular, one superior, just in front of closed sinus, and one inferior, belonging to antennal article. Besides the ventral face of this article bears two spines; one outside the movable part of the antenna is long, curved and bent down, the other is near the outer margin and continuous with a suborbital spine and a row of four pterygostomian tubercles.

The arm of the cheliped bears three marginal rows of tubercles, the hand has a partial row above and below. The brown color of the fingers extends nearly their whole length on the inner margin but only to about the middle on the outer margin.

Measurements.—Male (station 24), entire length of carapace 27 mm., length, measured from between rostral horns 24, greatest width at orbits 15.2, greatest branchial width 23, branchial width without spines 18, width at narrowest point behind orbits 10 mm.

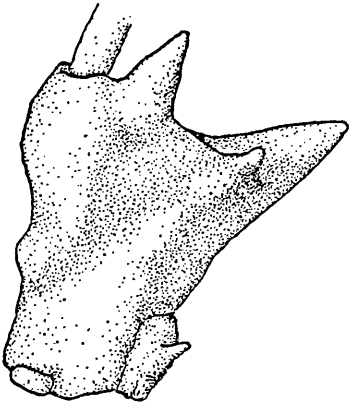

FIG. 137.—MACROCOELOMA EUTHECA (46932), BASAL ANTENNAL ARTICLE, × 11

Range.—Bahama Banks; Florida Keys; West Indies; Panama (Atlantic side). Depth, 30 to 117 fathoms.

Material examined.—

Bahama Banks; May 18, 1893; State University of Iowa Expedition; 1 young female (20020).

Miami, Florida; 30 fathoms; J. B. Henderson; 1 male, 1 ovigerous female, 1 young (46932).

Off Key West, Florida; Sand Key Light bearing W. NW., Key West Light bearing N.; 60 fathoms; station 24, State Univ. Iowa Exped.; 1 male (Mus. S. U. I.).

Off Sand Key, Florida; 50 fathoms; May, 1913; J. B. Henderson; 1 male (46066).

Off Havana, Cuba; May 26, 1893; State Univ. Iowa Exped.; 1 young male (Mus. S. U. I.).

Off Frederickstadt, St. Croix; lat. 17° 37′ 55″ N.; long. 64° 54′ 20″ W.; 117 fathoms; R. brk. Sh.; temp. 65° F.; January 5, 1879; station 132, U. S. C. S. S. *Blake;* 1 female, ovigerous (2850, M. C. Z.).

Barbados; 1918; Barbados-Antigua Expedition, University of Iowa: SW. of Pelican Island, 1 mile; 38 fathoms; fine coral fragments; May 13; station 1; 1 male (Mus. S. U. I.). W. by N. of telegraph station; ½ mile off shore about edge of drop off; 60 to 70 fathoms; tangles; June 1; station 66; 1 female (Mus. S. U. I.).

Near Colon, Panama; lat. 9° 32′ 00″ N.; long. 79° 54′ 30″ W.; 34 fathoms; brk. Sh.; April 2, 1884; station 2146, *Albatross;* 1 male (52686).

MACROCOELOMA INTERMEDIUM Rathbun

Plate 170, fig. 2; plate 171, fig. 2

Macrocoeloma cutheca RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 251, except synonymy. Not *Pericera eutheca* Stimpson.

Macrocoeloma intermedium RATHBUN, Bull. U. S. Fish Comm., vol. 20, for 1900, pt. 2 (1901), p. 75 (type-locality, off Havana, 163 fathoms; holotype, male, Cat. No. 9492, U.S.N.M.).

Diagnosis.—Rostral horns separated by a V-shaped sinus. Basal half of rostrum with outer margins convex. Postero-lateral spine behind widest part of carapace.

Description.—Carapace oblong, width at orbits subequal to width at branchial regions, excluding branchial spines. Constriction behind orbits much less than in *eutheca.* Three median spines, gastric, cardiac and intestinal, the latter slender and curved. A larger, similar spine behind postero-lateral angle and a little above it on the carapace a spinule or tubercle. Lateral margin rough with spinules, one or two of which are hepatic. Orbital sheaths much shorter than in *eutheca;* margin armed with four spines or teeth, one preocular, one postocular and one infero-posterior spine; above some crenulations and a tooth behind the sinus. Basal antennal article armed with two long spines, the outer of which forms a submarginal spine on the orbital tube. Rostrum large, base very broad and with convex lateral margins, horns divergent, separated by a V-shaped interspace.

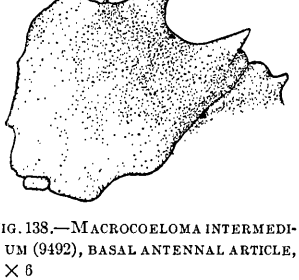

FIG. 138.—MACROCOELOMA INTERMEDIUM (9492), BASAL ANTENNAL ARTICLE, × 6

Pterygostomian region tuberculate.

Chelipeds with about four short, stout, blunt spines on upper margin of merus; carpus granulate; manus smooth.

Measurements.—Male, holotype, length of carapace measured from posterior margin to tip of rostral horn 25, length measured from between rostral horns 21.2, greatest width at orbits 16, greatest branchial width 18, branchial width without spines 16.1, width at narrowest point behind orbits 12 mm. Male (Copenhagen Mus.), entire length of carapace 29.6, orbital width 18.6, branchial width without spines 19.7, length of horns 4.2 mm.

Range.—West Indies; Panama.

Material examined.—

Off Havana, Cuba; *Albatross:* Lat. 23° 10′ 36″ N.; long. 82° 20′ 20″ W.; 122 fathoms; Co.; May 1, 1884; station 2168; 1 female (7756). Lat. 23° 10′ 51″ N.; long. 82° 19 ′03″ W.; 163 fathoms; wh. br. Co.; Jan. 17, 1885; station 2323; 1 male, holotype (9492).

Off Roseau, Dominica; 40 fathoms; A. H. Verrill; 1 male (32512).

West Indies; 1 female (Copenhagen Mus.).

Near Colon, Panama; lat. 9° 32′ 00″ N.; long. 79° 54′ 30″ W.; 34 fathoms; brk. Sh.; April 2, 1884; station 2146, *Albatross;* 1 male (7780).

MACROCOELOMA CONCAVUM Miers

Plate 170, fig. 3; plate 171, fig. 3

Macrocoeloma concava MIERS, *Challenger* Rept., Zool., vol. 17, 1886, pp. 79 and 81, pl. 10, figs. 2–2*b* (type-locality, Fernando Noronha, 7 to 20 fathoms; type in British Mus.).

Macrocoeloma concavum RATHBUN, Proc. U. S. Nat. Mus., vol. 21, 1898, p. 576; Bull. U. S. Fish Comm., vol. 20, for 1900, pt. 2 (1901), p. 75.

Diagnosis.—Rostral horns triangular, separated by a V-shaped sinus. A spine present on urogastric region. A transverse row of five spines in line of cardiac spine. A strong protogastric spine.

Description.—Body and legs covered with a short, close pubescence, with some longer curled hairs. Carapace very convex, deeply concave on hepatic regions; dorsal surface armed with ten spines, disposed as follows: Three small spines in a triangle on gastric region, of which the posterior, or mesogastric one is the largest; a urogastric, a cardiac and an intestinal spine; a strong spine at lateral angle of carapace, and in the same transverse line with this and the cardiac spine, a dorsal, branchial spine. A few tubercles in front of the mesogastric spine. Lateral margins of carapace tuberculated, the tubercles continued in an oblique series over pterygostomian regions nearly to antero-external angle of buccal cavity. Rostrum flat, intermediate in size between those of *M. eutheca* and *M. intermedium;* outer margins straight or concave; horns separated by a V-shaped interspace as in *intermedium.* The orbits are less elongate than in the two preceding species; besides a blunt preocular and postocular tooth there are two or three tubercles on the upper margin, and three teeth or lobes on the lower margin, the middle one of which belongs to the basal antennal segment. This segment has also two equal spines, one on the anterior and one on the outer margin of the ventral face; behind the latter are a few tubercles.

Merus of chelipeds armed with tubercles on the margins, four on the upper margin being the largest; also two tubercles on outer surface, one on lower surface; inner surface granulate. Carpus granulate, a small tubercle at inner angle. Palm granulate on inner surface, also a tubercle at proximal end.

Measurements.—Female (24214), length of carapace measured from posterior margin to tip of rostral horn 35.8, length measured from between horns 32.8, greatest width at orbits 21.5, greatest branchial width 33.2, branchial width without spines 28.6, width at narrowest point behind orbits 18.1 mm.

Range.—Porto Rico; Brazil, as far south as Bahia (Miers). Shallow water to 20 fathoms.

Material examined.—

Off Vieques, Porto Rico; February 10, 1899; *Fish Hawk:* Culebrita lighthouse, NE. by N., 10 miles; 15 fathoms; Co.; temp. 26° C.; station 6091; 1 female (24214). Point Mula Lighthouse, E. by N., 10¾ miles; 12½ fathoms; Co.; temp. 27° C.; station 6095; 1 male (24221).

Off Cape St. Roque, Brazil; lat. 6° 59′ 30″ S.; long. 34° 47′ 00″ W.; 20 fathoms; brk. Sh.; 79° F.; station 2758, *Albatross;* 1 female (21934).

Genus MICROPHRYS Milne Edwards

Microphrys Milne Edwards, Ann. Sci. Nat., ser. 3, Zool., vol. 16, 1851, p. 251; type, *M. weddelli* Milne Edwards.

Milnia Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, 1860, p. 179; type, *M. bicornutus* (Latreille).

Omalacantha Streets, Proc. Acad. Nat. Sci. Philadelphia, ser. 3, vol. 1, 1871, p. 238; type, *O. hirsuta* Streets = *Microphrys bicornutus* (Latreille).

Eumilnia Kingsley, Proc. Boston Soc. Nat. Hist., vol. 20, 1879, p. 145; type, *E. error* Kingsley = *M. platysoma* Stimpson. Not *Fisheria* Lockington.

Carapace broadly pyriform, somewhat depressed, dorsal surface uneven and tuberculate or nodose, a small marginal spine or tubercle at lateral angle of branchial region; preocular spine usually developed. Orbits small, circular, with closed fissures. Eyes small. Rostral horns moderate or small, divergent. Basal segment of antenna considerably dilated, armed with a sizable spine at the antero-external angle, which is visible in dorsal view; the movable segments of the peduncle and the flagellum are not concealed by the rostrum.

Merus of outer maxillipeds distally truncated, the antero-external angle somewhat produced and rounded and the antero-internal angle emarginate.

Chelipeds larger than ambulatory legs, the palm compressed and more or less enlarged. Fingers hollowed at tip and in the male gaping.

Legs diminishing rapidly in length from first to fourth pair, the merus and carpus usually armed with spines; dactyli slightly curved.

Abdomen of both sexes with seven separate segments.

Restricted to America.

KEY TO THE SPECIES OF THE GENUS MICROPHRYS

A¹. Two spines on hepatic margin. Two large spines on margin of branchial region near lateral angle.----------weddelli, p. 496.

A². Two spines lacking on hepatic margin.

B¹. No flattened, imbricated lobes on side walls of carapace.

C¹. A very prominent, oblong, oblique areole or nodule on anterior branchial region.

D¹. Three teeth or spines on basal segment of antenna, viz, one at antero-external angle, one behind it on margin, one small at base of movable segment.

E¹. Carapace very granulate. A slender, sharp spine at lateral angle of carapace---------- branchialis, p. 502.

E². Carapace nodose, nodules nearly smooth. A conical lobe at lateral angle of carapace---------- triangulatus, p. 505.

D². Two teeth only on basal segment of antenna, no tooth at base of movable segment. A tooth on infra-orbital margin just outside antennal segment. A spine at lateral angle of carapace. Oblique branchial nodule divided in two---------- interruptus, p. 504.

C². Oblique areoles or nodules on anterior branchial region not very prominent. No tooth on infra-orbital margin just outside antennal segment. An elongate spine at antero-external angle of basal antennal segment, and a tubercle behind it on margin---- bicornutus, p. 489.

B². Two flattened, usually imbricated lobes on side walls of carapace, one hepatic, one branchial.

C¹. Carapace with many well marked granules; and considerably longer than broad.

D¹. Two spines at widest part of branchial region. Two large tubercles on intestinal region. A marginal lobe or tubercle on the basal segment of the antenna behind the antero-external spine. platysoma, p. 497.

D². Three spines at widest part of branchial region. Four large tubercles on intestinal region. No marginal tubercle on the basal segment of the antenna behind the antero-external spine, although the margin is thickened---------- antillensis, p. 498.

C². Carapace with few granules, hairy, not much longer than broad, typically with four long spines on each branchial region---- aculeatus, p. 500.

ANALOGOUS SPECIES ON OPPOSITE SIDES OF THE CONTINENT

Atlantic	Pacific
antillensis.	*platysoma.*
interruptus.	*branchialis.*

Species on both sides of the continent: *weddelli.*

MICROPHRYS BICORNUTUS (Latreille)

Plate 175

Pisa bicornuta LATREILLE, Encyc. Méth., Hist. Nat., Insectes, vol. 10, 1825, p. 141 (type-locality, *Nouvelle Hollande;* type in Paris Mus.).

Pericera bicorna MILNE EDWARDS, Hist. Nat. Crust., vol. 1, 1834, p. 337 (type-locality, Antilles; type in Paris Mus.).

Pisa bicorna GIBBES, Proc. Amer. Assoc. Adv. Sci., vol. 3, 1850, p. 170.

Pericera bicornuta GUÉRIN, in La Sagra's Hist. of Cuba, 1856, p. xii.—VON MARTENS, Arch. f. Naturg., vol. 38, 1872, p. 85, pl. 4, fig. 5.—GUNDLACH and TORRALBAS, An. Acad. Habana, vol. 36, 1899 (1900), p. 363, text-fig.; reprint, 1917, p. 20, pl. [5], fig. 11.

Pericera bicornis SAUSSURE, Mém. Soc. Phys. Hist. Nat. Genève, vol. 14, 1858, p. 427 [12], pl. 1, fig. 3 (type-locality, Antilles; type in Geneva Mus.).

Milnia bicornuta STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 7, 1860; p. 180.

Pisa galibica DESBONNE, in Desbonne and Schramm, Crust. Guadeloupe, 1867, p. 18 (type-locality, Guadeloupe; cotype in Paris Mus.).

Pisa purpurca DESBONNE, in Desbonne and Schramm, Crust. Guadeloupe, 1867, p. 18 (type-locality, Guadeloupe; cotype in Paris Mus.).

Omalacantha hirsuta STREETS, Proc. Acad. Nat. Sci. Philadelphia, ser. 3, vol. 1, 1871, p. 238 (type-locality, Isthmus of Panama; female holotype in Mus. Phila. Acad. Nat. Sci.).

Microphrys bicornutus A. MILNE EDWARDS, Nouv. Arch. Mus. Hist. Nat., vol. 8, 1872, p. 247; Crust. Rég. Mex., 1873, p. 61, pl. 14, figs. 2–4.

Microphrys bicornuta KINGSLEY, Proc. Acad. Nat. Sci. Philadelphia, vol. 31, 1879, p. 386.

Diagnosis.—Carapace tuberculate. A marginal spine at branchia angle. A tubercle on margin of basal antennal segment behind antero-external spine. Claws spotted.

Description.—Carapace subtriangular, moderately hairy, all the raised parts covered with rounded tubercles and two or three short spines on the branchial region; a spine at the lateral angle, which is situated far back. A line of four tubercles arches upward on intestinal region. Rostrum from a half to a third the length of the remainder of the carapace; horns either divergent throughout or divergent at base with extremities curving inward. Spine at anterior angle of basal segment of antenna flat, obtuse; behind it on the margin a tubercle or in the old a short stout spine. Preorbital angle rectangular.

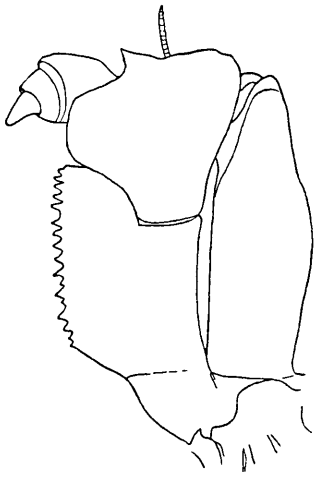

FIG. 139.—MICROPHRYS BICORNUTUS (7580), MAXILLIPED, × 8.4

Chelipeds spotted, the spots persisting in alcohol for many years. Arm with three or four tubercles or short, blunt spines above. Fingers gaping.

Legs hairy, margins a little rough.

Color.—Variable. Carapace often a dull yellowish brown or a bright purplish rose; chelipeds grayish-white, covered with small, round, purplish spots.

Measurements.—Male (7580), total length of carapace 36.4, length on median line 30.2, width with spines 26, without spines 23.6 mm.

Habitat.—A very common species on coral reefs. It is often disguised by the wealth of foreign objects, such as sponges, anemones, hydroids, algae, etc., which become attached to it.

Range.—Beaufort, North Carolina; Bahamas and Florida Keys to Desterro, Brazil; Bermudas. The locality given by Latreille is an error.

Material examined.—See table, pages 491–495.

Material examined of Microphrys bicornutus

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
North Carolina:	° ′ ″	° ′ ″			°C						
Fishing grounds, off Beaufort.	34 20 00	76 49 00	13.5	Co. S. Sh		Sept. 6, 1913	7943	*Fish Hawk*	1 y	53324	
	Course E. 1 mile										
Do	34 19 05	76 48 00	16.5	hrd		July 20, 1915	8293	do	3	51054	
	¼ mile SE.	of buoy									
South Carolina: Charleston						1852			1 sm.♂	340, M. C. Z.	
Bahamas:											
Green Turtle Cay								E. A. Andrews	4	20705	
New Providence						1886		*Albatross*	2 ♀ (1 ovig.)	11369	
East side of Andros Island, near Lighthouse south of South Bight, Long Bay Key district.						May 14, 1912		Paul Bartsch	1 y. ♀	45615	Encrusted with ascidian.
									1 ♂	45619	
Green Cay			4			June 30, 1903		B. A. Bean	1 y	31066	From Geogr. Soc. Baltimore.
Bahamas								Dr. Bryant	1 ♂ 1 ♀	53073	From Boston Soc. Nat. Hist.
									1 ♂ 1 ovig. ♀	53074	
Florida:											
Biscayne Bay, near Cape Florida.								U. S. Fish Com.	1 ♂ 1 ♀	31471	
Cape Florida						1884		Edward Palmer	1	9360	
									1 y	16063	
			Feet								
Off Biscayne Key			16–34			May 29, 1912		Paul Bartsch	2 ♀	45630	
Broad Creek			(1)	grsy		Nov. 24, 1906		Pine and Bean	1 ♂	33146	
Broad Creek, ocean front.						Dec. 17, 1906		do	1 ♀	33139	
Ragged Key			(2)			May —, 1913		J. B. Henderson	7 ♂ 4 ovig. ♀	46031	
Indian Key			(3)					H. Hemphill	11 ♂ 9 ♀	15117	
Lower Metacumbe Key				Grs		1885		do	1 ♂	15114	
Do						Dec. 4, 1906		Pine, Vandergrifft, and Bean.	1 ♀	33149	
Grassy Key Lake	2 miles NW. by N. of Channel Key.		8	rky		Jan. 29, 1903	7441	*Fish Hawk*	1 ♀	46729	
			Fath.								
Hawk Channel	1⅛ mile E. by S. of W. end of Lower Metacumbe Key.		3	barry		Feb. 18, 1903	7464	do	1 ♂	47068	

[1] Shallow.

[2] On reef.

[3] Below low tide.

Material examined of Microphrys bicornutus—Continued

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
Florida—Continued.	° ′ ″	° ′ ″	*Fath.*		°C						
Hawk Channel	1¼ mile S. by W. of SE. point of Long Key.		2.5	barry		Feb. 18, 1903	7463	*Fish Hawk*	1♂ 1♀ 2 y	46960	
			Feet								
Do	½ mile SE. by S. of SE. end of Duck Key.		14	rky		Jan. 27, 1903	7429	do	1♀	53323	
									1 y. ♀	52685	
Do	1 mile N. NW. ½ W. of East Washerwoman Key.		16	rky		do	7428	do	1♂	46935	
Do	3⅛ miles N. ¾ E. of Sombrero Light.		11.5	rky		do	7427	do	2♂	46783	One has Rhizocephalid parasite.
Duck Key				Co				do	1♂	50539	Thin shell.
Knights Key								H. Hemphill	2♂	15112	
North of Knights Key Channel.	⅝ mile N. ½ E. of Hog Key.		7	rky		Jan. 22, 1903	7419	*Fish Hawk*	1♀	46782	
Bird Key						1889		*Grampus*	3♂ 6♀ 1 y	15207	
									1♂ 2♀	26364	
Key West								H. Hemphill	210	9354	
Do								C. N. E. Eliot	2 y	22989	
Do								J. S. Kingsley collection.	2♂	53049	From Boston Society of Natural History.
Key West Harbor						1884		Edward Palmer	2♂	15115	
Sand Key Reef, off Key West.						May, 1911		J. B. Henderson	2♂ 1 ovig. ♀	46785	
Sand Key						May, 1913		do	1 y	46046	
Dry Tortugas, in moat				Co				T. W. Vaughan	2♂	50540	
Dry Tortugas						1915		do	1 ovig. ♀	53400	From outside of floating live-car.
Dry Tortugas reefs						1884		Edward Palmer	6♂ 4♀	9362	From corals and sponges.
Do								J. B. Henderson	1♀	46784	
Garden Key, Dry Tortugas.						Dec. 25, 1912		*Fish Hawk*	4♂ 1♀ 1 y	50538	
Bush Key						June, 1921		Paul Bartsch	13♂ 47♀ (43 ovig.).	56216	
Straits of Florida	24 44 00	83 26 00	37			1877–78	10	*Blake*	1	2852, M. C. Z.	
Off Cape Sable	E. end of Sawyer Key, S. ¼ W., 2¼ miles.		4.75	rky		Dec. 22, 1902	7390	*Fish Hawk*	3♀	46728	
Do	24 58 05	81 28 30	5	rky		Dec. 19, 1902	7375	do	1♂	46934	

Do	25	01	00	81	25	30	4.5	spkled. S.'Sh		do	7373	do	1 ♀	46959	
Do	25	00	55	81	22	15	4	rky		do	7372	do	1 ♂ 1 ♀	46781	
Do	25	09	45	81	18	35	3.25	rky. Co		Dec. 17, 1902	7351	do	1 ♀	46727	
Marco												H. Hemphill	1 ♀	16056	
St. Martins section	28	26	00	83	02	30	7.5	rky. Co	13	Jan. 15, 1902	7215	*Fish Hawk*	1 ♀	46726	
Do	28	42	30	83	09	45	7	S. brk. Sh. Grs	12.2	Jan. 17, 1902	7225	do	1 ♀	46958	
North Key section	28	50	15	83	23	15	10	R. Co. Sh	17	Nov. 28, 1901	7187	do	1 y	46723	Soft shell.
Do	28	52	45	83	07	00	5.75	rky	16.1 °*F*	Dec. 9, 1901	7209	do	1 ♂	46987	
Off Cedar Keys	Cedar Keys Light, N. ¾ E., 21¾ miles.						5.75	Co	63.45 °*C*	Jan. 11, 1913	21	do	1 y	50996	
Aucilla Section	29	49	00	84	06	15	6	R. Co	15	Dec. 5, 1901	7192	do	1 ♀	46725	
Do	29	54	00	84	06	00	4.5	R. Co. Sh	14	do	7191	do	1 ♂	46724	
Cuba:															
Cape San Antonio										1914		Henderson & Bartsch, *Tomas Barrera* Exped.	1	48655	Caught by copper sulphating on reef.
Punta Colorado							2–3	Sh. Grs		do	10	do	1 ♂	48743	
Cabañas								S. Sh. Grs. M		June 8–9, 1914	16	do	16 ♂ 23 ♀	48661	
Do										do		do	2 ♂ 4 ♀ (3 ovig.)	48665	Do.
Los Arroyas										May 20, 1914		do	3 ♂ 3 ♀	48669	
Esperanza										May 11, 1914	1, 2	do	1 ♂ 1 ♀	48654	
Cuba												Guérin collection	1	Phila. Acad. Nat. Sci.	Gift of T. B. Wilson.
Jamaica:															
Montego Bay								Coral reef		July 12, 1910		C. B. Wilson	1 ♂	43082	
Do										July 15, 1910		do	2 ♂ 1 ♀	43079	
United Fruit Co.'s wharf, Montego Bay.								*Ulva*		July 5, 1910		E. A. Andrews	1 ♂ 1 ♀ 1 y	43078	Covered with algae.
Sea View Ladder, Montego Bay.										Aug. 30, 1910		do	1 ♂ 2 y	43077	
Bogue Islands, Montego Bay.								Mangrove roots.		July 2, 1910		do	1 ♂ 3 ♀ (2 ovig.)	43076	
Do										July 6, 1910		do	1 ♀	43075	
Do								Mangrove roots.		June 20, 1910		C. B. Wilson	1 y	43083	With sponges, ascidians, etc.
Do								do		June 23, 1910		do	2 ♂	43081	
8 miles east of Montego Bay.								Coral reef		July 20, 1910		do	2 ♂	43080	
Umbrella Point										July 14, 1910		E. A. Andrews	1 ♂ 1 ♀ 1 y	43073	
Snug Harbor								R		Aug. 30, 1910		do	1 ovig. ♀	43074	
Jamaica										Mar. 1–11, 1884		*Albatross*	7 ♂ 10 ♀	16057	
Do												T. H. Morgan	1	17203	
Do										1910		E. A. Andrews	1 ♂	43072	
Porto Rico:															
Mayaguez								Coral reef		Jan. 23, 1899		*Fish Hawk*	1 ♂	24198	
Do										Jan. 20, 1899		do	4 ♂ 1 ♀	24381	
Mayaguez Harbor										do		do	1 ♀	24199	
Boqueron Bay										Jan. 25, 28, 1899.		do	5 ♂ 2 y	24385	

Material examined of Microphrys bicornutus—Continued

Locality	Bearings		Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	Latitude N.	Longitude W.									
Porto Rico—Continued.	° ′ ″	° ′ ″	*Feet*								
Porto Real						Jan. 27, 1899		*Fish Hawk*	1♀	24386	
Guanica Bay						Jan. 28, 1899		do	1♀	24194	
Reefs at Guanica						Jan. 29, 1899		do	2♂	24387	
Ponce						Jan. 30, 31, 1899.		do	6♂ 3♀	24389	
Reefs at Ponce						Jan. 30, 1899		do	9♂ 1♀ 1 y.	24388	
Playa de Ponce reef						Feb. 1, 1899		do	7♂ 8♀	24390	
Arroyo						Feb. 4, 1899		do	1♀	24391	
Lighthouse reef, Arroyo						Feb. 3, 1899		do	3♀	24195	
Caballo Blanco reef, Vieques.						Feb. 7, 1899		do	3♂ 2♀	24211	
Ensenada Honda, Culebra.						Feb. 9, 11, 1899.		do	7♂ 3♀ 8 y.	24208	
Hucares						Feb. 13, 1899		do	3♀	24197	
Fajardo						Feb. 17, 1899		do	4	24223	
St. Thomas:											
St. Thomas						1884		*Albatross*	39	16186	
St. Thomas, on piles near town.						July 7, 1915		C. R. Shoemaker	1♀	49929	Gift of Carnegie Institution.
St. Thomas, lagoon						July 9, 1915		do	1♂ 1 y.	50543	Do.
St. Thomas, shore						July 6, 1915		do	1 ovig. ♀	50545	Do.
St. Eustatius: Tumble-Down-Dick Bay.			15	stony		Sept. 17, 1905		J. Boeke	1 y. ♀	Leiden Mus.	Concealed by colony of sponges.
Barbados:											
Barbados, shore								H. M. Lefroy	1♂ 1♀	26409	
Barbados						May 8, 1890		W. H. Brown, U. S. Eclipse Exped. to W. Africa.	1♂	14883	
Old Providence Island						1884		*Albatross*	2♂ 1♀	16185	
Panama:											
Colon (Aspinwall)						Nov. —, 1880		J. A. McNiel	12	4784, M.C.Z.	From Peabody Acad. Sci.
Near Colon	9 32 00	79 54 30	34	brk. Sh.		Apr. 2, 1884	2146	*Albatross*	1 y.	16187	
Porto Bello						Apr. 24–28, 1911.		Meek and Hildebrand, Smithson. Biol. Survey.	1♀	44187	Soft shell.
Fox Bay						Mar. 22, 1912		do	1♂ 2♀ 1♂ 3♀	56537 Field Mus.	

Colon Import & Export Co. Trading Station, Playa de Dama.					May 18, 1915	Chas. G. Holland, U. S. S. *Lconidas.*	1♂	50542	
Isthmus of Panama						J. A. MeNeil	1♀	Phila. Acad.	Holotype of *Omalacantha hirsuta.*
Colombia:									
Puerto Colombia (Sabanilla).					Mar. 16-22, 1884.	*Albatross*	1♀	16058	
Santa Marta		2				C. F. Baker	1♀	22553	
Curaçao:									
Schottegat		0.25	muddy		June 21, 1905	J. Boeke	1♂	Leiden Mus.	
Schottegat, lagoon		1	algae		July 9, 1905	do	1 y. ♀	do	
Caracas Bay			sponge, coral		1920	C. J. van der Horst.	3♀ 2♂ (1 ovig.) 1 y.	56857, 56860, 56865	
Trinidad						W. O. Crosby	1♂ (1 ovig. ♀)	53072	Gift of Boston Soc. Nat. Hist. Covered with actinians.
Brazil:									
Island of Santa Anna						C. F. Hartt	1♂	1931, M.C.Z.	
Island of Fernando Noronha.					1876-1877	R. Rathbun, Hartt Explor.	1♂ 1♀	19959	
Natal					1911	Fred Baker, Stanford Exped.	1♂	46722	
Pernambueo					1876-1877	R. Rathbun, Hartt Explor.	1	41428	
Rio Formoso, Pernambuco.					do	do	1♂ 1♀	19960	
Maceio coral reef, Alagoas.					July —, 1899	A. W. Greeley, Branner-Agassiz Exped.	5♂ 5♀	25753	
Plataforma, Bahia		(4)			1876-1877	R. Rathbun, Hartt Explor.	3♂ 3♀	19958	
Porto Seguro						Hartt and Copeland, Thayer Exped.	2♂ 1♀	1927, M.C.Z.	
Abrolhos Islands					Dec. 27, 1887	*Albatross*	1♂ 1♀ 1♂ 1♀	21941 18614	
Victoria						Hartt and Copeland, Thayer Exped.	2♂ 1 ovig. ♀	1928, M.C.Z.	
Desterro, Sta. Catharina.					Jan. —, 1866	Fr. Müller	2♀ (1 ovig.)	1930, M.C.Z.	
Bermudas:									
Hungry Bay						F. G. Gosling	2♂ 1 y.	25447	
Tuckers Island					Jan. 16, ——	Geo. Hawes	1♀	13796	
Bermuda						F. V. Hamlin	1♂	4024	From Wesleyan University.

4 Tide pools.

MICROPHRYS WEDDELLI Milne Edwards

Plate 271, figs. 2–7

Microphrys weddelli MILNE EDWARDS, Ann. Sci. Nat., ser. 3, Zool., vol. 16, 1851, pp. 251 [31] and 291 [71], pl. 10, figs. 1 and 2 (type-locality, Peru; type in Paris Mus.).

Microphrys weddellii A. MILNE EDWARDS, Crust. Rég. Mex., 1873, pl. 14, figs. 1–1c; 1875, p. 60.

Diagnosis.—Carapace very little longer than wide. Two marginal spines on hepatic region, two large spines on margin of branchial region at widest part of carapace. A long spine on carpus of first three legs.

Description (after A. Milne Edwards).—Body and legs with little hair; there are only those stiff, hooked hairs which adorn the rostrum, the prominent parts of the carapace, and the upper part of the feet. Carapace pyriform, very wide at the branchial regions. The regions are little areolated and bear on their prominent parts some feebly marked tubercles; on the post-branchial lobes, however, these tubercles are more elevated and become spiniform. A line of pearllike granulations extends parallel to the posterior margin to a point above the fourth pair of feet.

Frontal horns of medium length, pointed and divergent. On either side there is a stout spine belonging to the basal segment of the antenna. Preorbital angle little advanced, bearing a small spine. Lateral margins rough with spines; two very small on the hepatic region, three of the same size on the epibranchial lobe, two others, large and strong, arm the metabranchial lobe.

Chelipeds of male very strong; hand very high and a little compressed; fingers gaping. In the female, the chelipeds are slender and the hand almost cylindrical. In both sexes the arm has about three spines above. Legs short and stout, those of the second pair are longer than the succeeding, and are armed on the merus and carpus with a series of sharp spines; one spine on the carpus of the first three pairs.

Color.—Carapace reddish brown; feet the same color, clouded with violet.

Measurements.—Total length of carapace 36, greatest width of same 33 mm.

Range.—From Ecuador to Chile; Guadeloupe.

Material examined.—

Paraca Bay, Peru; U. S. C. S. S. *Hassler;* 1 male (2095, M. C. Z.).

Peru; cotypes (Paris Mus.).

Peru; Guérin collection; T. B. Wilson, donor; 1 male, 1 female (Mus. Phila. Acad. Nat. Sci.); perhaps cotypes; labeled (by Guérin probably) "n. g. and n. sp., Cat. du Mus. de Paris."

Caldera, Chile; May 16, 1872; U. S. C. S. S. *Hassler;* 1 male (1932, M. C. Z.).

West coast of South America; 1858; Möller, collector; 1 specimen (Copenhagen Mus.).

Guadeloupe; specimens described by A. Milne Edwards (Paris Mus.).

Additional record.—Bay of St. Elena, Ecuador (Nobili).

MICROPHRYS PLATYSOMA (Stimpson)

Plate 176, figs. 1 and 2

Milnia platysoma STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 7, 1860, p. 180 (type-locality, Cape St. Lucas; type not extant).

Microphrys platysoma A. MILNE EDWARDS, Crust. Rég. Mex., 1875, p. 62.—RATHBUN, Bull. U. S. Fish Comm., vol. 20, for 1900, pt. 2 (1901), p. 72 (part; not Atlantic specimens); Proc. U. S. Nat. Mus., vol. 38, 1910, pp. 535 and 574, pl. 50, fig. 3 (part: only Lower California specimens).

Pisoides ? celatus LOCKINGTON, Proc. California Acad. Sci., vol. 7, 1876 (1877), p. 66 [4], (type-localities, La Paz, Mulege Bay, Port Escondido, San José Island, all in the Gulf of California; types not extant).

Microphrys depressa STREETS and KINGSLEY, Bull. Essex Inst., vol. 9, 1877, p. 103; not *Fisheria depressa* Lockington, 1877.

Microphrys error KINGSLEY, Proc. Boston Soc. Nat. Hist., vol. 20, 1879, p. 145 (type-locality, Lower California; type not extant).

Diagnosis.—Two laminiform processes on antero-lateral wall of carapace. Two branchial spines, one at lateral angle, the other in a transverse line with same. A lobe on margin of basal antennal segment behind antero-external spine.

FIG. 140.—MICROPHRYS PLATYSOMA (20292), BASAL ANTENNAL ARTICLE, × 13.3

Description.—Carapace depressed, tuberculate and granulate; areolæ at inner angle of branchial region very finely granulate; two laminiform processes on the antero-lateral wall, one on the hepatic region, the other on the branchial region, the latter not projecting in an imbricated manner. The surface of the hepatic process is in one plane, with the anterior end acute and projecting forward; there may be, however, at the middle of the upper edge a tubercle which projects outward. Between the hepatic and branchial processes and below their level there is a spine; two branchial spines, one of which is on the postero-lateral angle and the other farther in but on the same transverse line. On the posterior margin there is a row of tubercles which increase in size toward the middle, those of the middle pair larger than the others. Rostral horns slender, directed forward, about one-sixth the length of rest of

carapace. Antennal spines about half the length of rostral spines; the margin of the antennal segment behind the spine curves outward, forming a shallow lobe; preocular spines acute, half the length of antennal spines.

The arm has a dentate, laminate superior crest; wrist tuberculate; palm less than twice as long as broad; fingers widely gaping, the pollex being strongly curved downward.

Legs sparsely hairy and with a few spines and tubercles; propodal joints with a prominent rounded distal laminiform process for articulation of dactylus.

Color.—Reddish-brown above, hands and under parts white marbled with bright red, the latter predominating on the upper surface of the chelipeds (Lockington).

Measurements.—Male (20292), entire length of carapace 17.2, width of same without spines 13.2, with spines 13.7, length of rostral spines 2.5 mm.

Range.—Lower California to Panama.

Material examined.—

Patos Island, Gulf of California, Mexico; anchorage, 4½ fathoms; Apr. 23, 1921; Fred Baker, collector, California Academy Expedition; 1 male (Cal. Acad.).

La Paz Bay, Lower California, Mexico; L. Diguet, collector; 9 specimens (Paris Mus.); 1 male, 1 female (20292).

Mazatlan, Mexico; A. Agassiz; 1 small male (2096, M. C. Z.).

Taboga Island, Panama; June, 1894; J. Zetek; 1 male (48791).

Island at end of breakwater, Panama Bay, Panama; February 5, 1912; Meek and Hildebrand, Smithson. Biol. Surv.; 1 male (56539).

MICROPHRYS ANTILLENSIS Rathbun

Plate 176, figs. 3 and 4

Microphrys platysoma RATHBUN, Bull. U. S. Fish Comm., vol. 20, for 1900, pt. 2 (1901), p. 72 (part: specimens from Porto Rico).—HAY and SHORE, Bull. Bur. Fisheries, vol. 35, 1915–16 (1918), p. 459, pl. 38, fig. 9.

Microphrys antillensis RATHBUN, Proc. Wash. Acad. Sci., vol. 33, 1920, p. 24 (type-locality, off Montego Bay Point, Jamaica; holotype, Cat. No. 43017, U. S. Nat. Mus.).

Diagnosis.—Two processes on antero-lateral wall of carapace, the oblong branchial process not rimmed nor sharply defined. Three branchial spines about lateral angle. No lobe on margin of basal antennal segment behind antero-external spine. Four equally large tubercles on intestinal region.

Description.—I formerly assigned some small Porto Rican specimens to the species *platysoma*, but additional material indicates that the Atlantic form should be separated from the Pacific.

In *M. antillensis* the general aspect is the same as in *platysoma*. The antennal spines are longer, slenderer and less divergent; the

Material examined of Microphrys antillensis

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
North Carolina:	° ′ ″	° ′ ″									
Beaufort Harbor			3-5					*Fish Hawk*	1♂ 1 ovig. ♀	51080	
Fishing grounds off Beaufort.	34 21 00	76 53 30	15	Co. fne. S. Sh. M.		Sept. 7, 1913	7956	do	1 ovig. ♀	51024	
	Course N. ½ mile.										
Do	Course NW. by W., toward buoy.		15	Rough		Aug. 11, 1914	8211	do	1♂	51032	
Off Cape Fear	33 50 00	78 04 30	7. 25	Sh. Co		Sept. 24, 1913	7986	do	1♂	55842	
	Baldhead, NE. by E. ½ E.; Cape Fear, E. ½ N.										
Cuba:											
Between Cape San Antonio and Cape Cajon.			2-12	Pure S. to weedy.		May 24, 1914	12	Henderson & Bartsch, *Tomas Barrera* Exped.	2♂	48730	
Bahia Honda			2-12	M. Co		June 4-5, 1914	15	do	1 y. ♀	48731	
Jamaica: Off Montego Bay Point.						June 28, 1910		E. A. Andrews	1♂	43017	Holotype.
Porto Rico:											
Mayaguez Harbor	Custom House, NE. ¾ E., 4½ miles.		4-6	Co		Jan. 20, 1899	6065	*Fish Hawk*	1♂	24138	
Boqueron Bay						Jan. 28, 1899		do	1 ♀	24136	
Off Vieques Island	Point Mula lighthouse, S. SW. ⅜ W., 5¾ miles.		14	Co. S		Feb. 8, 1899	6085	do	1 y. ♀	24137	

basal segment itself, is narrower, and its outer margin, though thickened, does not project laterally in a lobe as in *platysoma*. The laminiform process on the hepatic region is not entirely flat, and has a tooth at the anterior end which projects outward but not forward except in a large specimen. The flattened, lateral process on the branchial region is not as sharply defined as in *platysoma*, and is devoid of a rimmed edge. Besides the two spines at the widest part of the carapace characteristic of *platysoma*, there is a spine below the margin which forms a broad triangle with the other two. Four, instead of two, tubercles are equally enlarged on the intestinal region.

FIG. 141.—MICROPHRYS ANTILLENSIS, MALE (43017), TOTAL LENGTH OF CARAPACE 14 MM., BASAL ANTENNAL ARTICLE

Measurements.—Male, holotype, entire length of carapace 14, length of horns 2.4, width of carapace including spines 11.6, excluding spines 10.5 mm. Male (51032), entire length of carapace 18.3, length of horns 3.3, width of carapace including spines 15.6, excluding spines 14 mm.

Range.—North Carolina; Cuba; Jamaica; Porto Rico.

Material examined.—See table, page 499.

MICROPHRYS ACULEATUS (Bell)

Plate 271, fig. 1

Pisa aculeata BELL, Proc. Zool. Soc. London, vol. 3, 1835 (1836), p. 171 (type-locality, Galapagos Islands; type not extant); Trans. Zool. Soc. London, vol. 2, 1836, p. 50, pl. 9, fig. 7.

Milnia aculeata STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 7, 1860, p. 52.

Microphrys aculeatus A. MILNE EDWARDS, Crust. Rég. Mex., 1875, p. 63.—RATHBUN, Proc. U. S. Nat. Mus., vol. 38, 1910, pp. 536 and 574, pl. 45, fig. 4.

Microphrys platysoma RATHBUN, Proc. Washington Acad. Sci., vol. 4, 1902, p. 285 (part: Galapagan specimen); Proc. U. S. Nat. Mus., vol. 38, 1910, pp. 535 and 574 (part: Peruvian and Galapagan specimens, not pl. 50, fig. 3).

Diagnosis.—Carapace short and broad, tubercles few. Two raised disks on antero-lateral wall. Four spines on each branchial region, two marginal. No tooth or lobe on basal antennal segment behind antero-external spine.

Description.—Carapace shorter and broader than in *platysoma;* hairy; when the hairs are removed the surface is seen to be covered with small pits. Tubercles and granules few; an arch of 5 tubercles

across the gastric region; 2 tubercles near the outer edge of each branchial region; a row of tubercles above the posterior margin. Some fine granules on the inner areole of the branchial region; granules also on the protogastric regions, while a row of granules leads forward onto each horn. Typically four spines on each branchial region, three of which form a transverse row with the conical cardiac region, the outer spine of the row being marginal; the fourth spine is also marginal but lower and further forward than the third. Between the second and third spines there may be an additional, smaller, secondary spine. The first or innermost spine (that next the cardiac region) may be obsolete and represented by only a low, conical swelling. Each spine and tubercle bears a tuft of long, curled hairs; a band of similar hairs runs along the antero-lateral margins and along each side of the gastric region to the tips of the rostral horns. On the antero-lateral wall are two much raised, oval disks, one hepatic and one branchial; the side of the postorbital cup is also flattened.

The margin of the basal antennal segment bears no tooth nor lobe behind the slender, antero-lateral spine.

The arm has three triangular teeth above. The first leg has a long spine on the carpus and another near the distal end of the merus; the second leg has a spine on the carpus only.

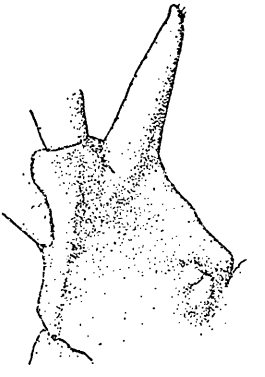

FIG. 142.—MICROPHRYS ACULEATUS (25677), BASAL ANTENNAL ARTICLE, × 12.7

Measurements.—Ovigerous female (40464), entire length of carapace 15.7, width of carapace without spines 13.8 mm.

Range.—Ecuador (Nobili); Peru; Galapagos Islands.

Material examined.—

Lobos de Afuera, Peru; rocky bottom along shore, which is covered with growth of seaweed; March 18, 1907; R. E. Coker, collector; 2 females (40464); received from Peruvian Government.

North end of Ferrol Bay (Chimbote), Peru; rocks between tide lines; March 1; R. E. Coker, collector; 1 young female (40465); received from Peruvian Government.

Reef north of Tagus Hill, Tagus Cove, Albemarle Island, Galapagos Islands; March 16, 1899; Stanford University; 1 female (25677).

MICROPHRYS BRANCHIALIS Rathbun

Plate 176, figs. 5 and 6; plate 270, fig. 1

Microphrys, species, RATHBUN, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 254.
Microphrys branchialis RATHBUN, Proc. U. S. Nat. Mus., vol. 21, 1898, p. 577, pl. 41, fig. 5 (type-locality, Magdalena Bay, Lower California, 12 fathoms; holotype, Cat. No. 21576, U.S.N.M.); Proc. Washington Acad. Sci., vol. 4, 1902, p. 285.

Diagnosis.—Postero-lateral angle armed with one spine. Antero-lateral margin unarmed and without imbricated processes. Anterior branchial region much swollen. Three marginal spines or teeth on basal segment of antenna.

Description.—Anterior branchial region with an oblique oblong protuberance, highest posteriorly, sloping gradually downward anteriorly and covered with tubercles. Gastric tubercles as follows: Three median, a cluster of three on each side anteriorly, and a transverse row at posterior end. One genital tubercle; 10 cardiac, of which 2 are median. Posterior branchial region with several tubercles, arranged mostly in two longitudinal rows; postero-lateral angle with a spine curving upward. A row of blunt tubercles above posterior margin. Margin of hepatic region with a small tubercle; vertical side of branchial region with scattered tubercles, and two lines of tubercles continued to pterygostomian region. Anterior and lateral regions hairy. Rostrum deflexed; with two flattened, triangular, acute horns, pointing forward and separated by a V-shaped sinus reaching one-half length of rostrum. Preorbital tooth subacute, denticulate; two superior orbital fissures on either side of a rounded lobe; postorbital tooth blunt.

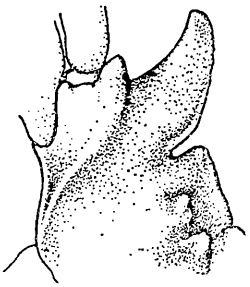

FIG. 143.—MICROPHRYS BRANCHIALIS (21576), BASAL ANTENNAL ARTICLE, × 13.2

Basal antennal article armed at antero-lateral angle with a long, broad, blunt spine or tooth, curved inward and upward and with crenulated outer margin; a short blunt tooth at base of second article; a tooth on outer margin forming part of wall of orbit, and a laminate tubercle near postero-lateral angle.

Chelipeds of male one and a third times length of carapace; scattered tubercles on upper surface of arm and wrist; a longitudinal row on outer surface of arm, and two or three tubercles at proximal end of outer lower margin. Palm long and narrow, margins parallel, superior length over twice width and more than one and a half times dactylus. Pollex not arched downward as in *M. platysoma*. Chelipeds of female slenderer and about nine-tenths length of carapace.

Material examined of Microphrys branchialis

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	° ′ ″	° ′ ″			°F						
Mexico:											
Off Abreojos Point	26 14 00	113 13 00	48	yl. M	53.9	May 3, 1888	2834	*Albatross*	1♂	21942	
Magdalena Bay (Sail Rock, Entrada Point, S. 53° W.; Redondo Point, S. 15° W.)	24 35 20	111 59 35	13.5	S. brk. Sh		Mar. 21, 1911	5678	do	1♂	55764	Immature.
Do	24 32 00	111 59 00	12	fne. gy. S		May 2, 1888	2831	do	1♂ 2♀	21576	Male is holotype.
Northwest of Guaymas	28 16 00	111 51 00	22	fne. gy. S	63	Mar. 23, 1889	3012	do	1♀	16774	

Material examined of Microphrys triangulatus

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.
	° ′ ″	° ′ ″								
Gulf of California, Mexico:										
Agua Verde Bay						Apr. 2, 1911		*Albatross*	1♂	17118.
San Josef Island						Mar. 31, 1911		do	1♂	55761.
Off La Paz Bay	24 22 30	110 19 30	8	brk. Sh		Apr. 30, 1888	2824	do	2♂ 2♀	21943.
Do	24 22 15	110 19 15	7	brk. Co		do	2825	do	1♀	21944.
Off Cerralvo Island	24 12 00	109 55 00	9.5	Sh		do	2826	do	1♂	21945.
Do	24 11 45	109 55 00	10	Sh		do	2827	do	1♂	21946.
Do	24 11 30	109 55 00	10	Sh		do	2828	do	8♂ 5♀	21947.
Galapagos Islands: Reef North of Tagus Hill, Tagus Cove, Albemarle Island.						Mar. 16, 1899		Stanford Univ	1♂	25676.

First leg reaches middle of palm in male, to end of chelipeds in female; merus of legs armed with spines and tubercles on superior and outer surfaces; carpus with two or three spines; margins of legs hairy.

Variations.—Varies in the number of tubercles, length of postero-lateral spine, prominence of oblong branchial protuberance, length of rostral horns and antero-external spine of basal joint of antenna.

Measurements.—Male, holotype, entire length of carapace 15.3, width of same including spines 14, excluding spines 11.8 mm.

Range.—From Abreojos Point, Lower California to Gulf of California. Depth, 12 to 48 fathoms.

Material examined.—See table, page 503.

MICROPHRYS INTERRUPTUS Rathbun

Plate 174, figs. 1–3

Microphrys interruptus RATHBUN, Proc. Biol. Soc. Washington, vol. 33, 1920, p. 24 (type-locality, Ensenada de Cajon, off Cape San Antonio, Cuba; holotype, Cat. No. 48753, U.S.N.M.); Univ. Iowa Studies in Nat. Hist., vol. 9, 1921, p. 86, pl. 2, fig. 5.

Diagnosis.—A broken, oblique ridge on branchial region. Two marginal teeth or spines on basal segment of antenna. Legs unarmed.

Description.—Carapace very uneven. The branchial region bears a high, oblique elevation, which in this species is in two parts, the anterior part elongate and bilobed at summit, the posterior part small and conical; in the same line is the stout, curved, sharp-tipped spine at the lateral angle of the carapace. Transversely inward from this spine is a shorter, conical, blunt spine or tubercle; on either side of the cardiac region an areole bearing a few granules; the small and finely granulated areole at the inner angle of the branchial region is depressed. The mesogastric region is for the most part elevated and nodulous; near its anterior end there is a tubercle which is one of five forming a transverse curve across the gastric region. Cardiac region nodulose. Besides a short submarginal row of granules above each postero-lateral margin, there is a row of four tubercles arched upwards above the posterior margin, and underneath the arch, two smaller tubercles side by side. A few granules on the vertical slope of the hepatic and branchial regions.

Carapace wider than usual anteriorly, the orbits being more tubular. Preorbital tooth not produced, tip tuberculiform. Rostral horns flat and sharp, their outer margins parallel. Spine of basal antennal segment very short, broad, flat, curved, blunt, and projecting obliquely outward rather than forward; it is followed by a

tuberculiform tooth on the outer margin. The segment is wide, as in *branchialis*, but the tubercle on its ventral surface is much lower, almost obsolete.

The right cheliped, the only one present, is rather feeble, and is probably not fully developed; the arm has a row of a few spaced tubercles above; the carpus a few granules outside.

The legs have a row of long hairs on each side of the dorsal aspect but are devoid of spines; the first two pairs are very slender. Last segment of male abdomen shorter than in *branchialis*.

Measurements.—Male, holotype, entire length of carapace 10.7, length of horns 1.4, width of carapace including spines 8.4, excluding spines 8.2 mm. Male (Antigua), entire length of carapace 16.7, length of horns 2.4, width of carapace including spines 13.6, excluding spines 13.3 mm.

Range.—Cuba; Antigua; Barbados.

Material examined.—

FIG. 144.—MICROPHRYS INTERRUPTUS (48753), BASAL ANTENNAL ARTICLE, × 16

Ensenada de Cajon, off Cape San Antonio, Cuba; May 22–23, 1914; station 11, *Tomas Barrera* Expedition; Henderson and Bartsch, collectors; 1 male, holotype (48753), with Rhizocephalid parasite attached to abdomen.

Fort Barclay, English Harbor, Antigua; July 9, 1918; Barbados-Antigua Exped., Univ. Iowa; 1 male, 1 young female (Mus. S. U. I.).

Needham Point, Barbados; May 18, 1918; Barbados-Antigua Exped., Univ. Iowa; 1 male (Mus. S. U. I.).

MICROPHRYS TRIANGULATUS (Lockington)

Plate 177

Mithraculus triangulatus LOCKINGTON, Proc. California Acad. Sci., vol. 7, 1876 (1877), p. 73 [11] (type-locality, Gulf of California; types not extant).

Mithrax triangulatus KINGSLEY, Proc. Boston Soc. Nat. Hist., vol. 20, 1879, p. 149.

Microphrys triangulatus RATHBUN, Proc. U. S. Nat. Mus., vol. 21, 1898, p. 578.

Microphrys branchialis RATHBUN, Proc. Washington Acad. Sci., vol. 4, 1902, p. 285 (part: specimens from Galapagos Islands).

Diagnosis.—Carapace short and broad, nodulose, nodules almost smooth. Three marginal teeth or lobes on basal segment of antenna. Chelipeds of male very long and strong, palms high.

Description.—Carapace little longer than broad, thick and nodulose, the nodules ornamented sparingly with low granules, so as to appear

almost smooth. The largest nodule is the anterior branchial, which is oblique, elongate and overhangs the lateral wall of the carapace. Behind and below this lobe there is a short blunt spine or lobe at the lateral angle of the carapace. The most prominent granules are on the anterior portion of the carapace, namely, two on the summit of each protogastric lobe, a row of three on each epigastric lobe, one or two at base of each preorbital tooth. Two large tubercles on intestinal region, from each of which a submarginal line of granules extends outward.

Rostrum short, deeply divided; horns broad, inner margin straight, outer margin convex, sinus narrow. Preorbital lobe little advanced, blunt, granulate; postorbital cup also little advanced. Basal antennal segment broad, bearing two broad blunt lobes on the margin, each lobe outwardly arcuate, also a small subacute tooth at the base of the next or movable segment, and a tubercle on the ventral surface near the postero-external angle.

FIG. 145.—MICROPHRYS TRIANGULATUS (21943), BASAL ANTENNAL ARTICLE, × 14

Chelipeds of male very strong, one and two-thirds times as long as carapace. Arm tuberculate on upper margin and inner and outer surfaces; wrist nearly smooth; palm unusually high, its upper length about one and two-thirds times its height; immovable finger a little convex below, a large tooth on the dactyl a little behind middle of gape.

Merus joints of legs with about two rows of large tubercles some of which are conical and subacute; a few of the same are on the carpus, from one to three of these being enlarged; two tubercles on each propodus.

Color.—In spirits, uniform reddish (Lockington).

Measurements.—Male (21943), entire length of carapace 15.4, length of horns 1.2, width of carapace between tips of postero-lateral tubercles or spines 14.3, length of cheliped 23.7, length of palm along upper margin 7.9, greatest width of palm 4.9 mm.

Variation and affinity.—A small male from the Galapagos has a sharp spine at the postero-lateral angle of the carapace, while some of the granules on the dorsal surface are sharper than usual. This gives it somewhat the appearance of *M. branchialis.* Indeed there is a curious resemblance between the two species. *M. triangulatus* looks like a *branchialis* with the carapace shortened and widened, especially the anterior portion, while the protuberances, which are of

similar shape, are shoved up into greater prominence and their surfaces smoothed off.

Range.—Lower part of Gulf of California; Galapagos Islands. Shallow water to 10 fathoms.

Material examined.—See table, page 503.

Genus TYCHE Bell

Tyche Bell, Proc. Zool. Soc. London, vol. 3, 1835 (1836), p. 172; type, *T. lamellifrons* Bell; Trans. Zool. Soc. London, vol. 2, 1836, p. 57.—A. Milne Edwards, Crust. Rég. Mex., 1878, p. 125.

Glischirus Gistel, Natur. Thierreichs., 1848, p. XI; substituted for *Tyche* Bell, supposed to be preoccupied by *Tychus* Leach, 1817.

Platyrinchus Desbonne, in Desbonne and Schramm, Crust. Guadeloupe, 1867, p. 3; type, *P. trituberculatus* Desbonne.

Carapace oblong-oval, flattened, with lamellate expansions in front and behind; front very wide, with four horns, the two lateral forming anterior angles of orbit. Orbits covered by a lamellate prolongation which conceals the ocular peduncles nearly to their extremities; below there is no orbital floor, and the ocular peduncles are entirely uncovered. Antennae concealed beneath rostrum; basal segment somewhat enlarged, a small blunt point at its antero-external angle; following articles cylindrical. The external maxillipeds exhibit a very remarkable arrangement, not shown in any other genus: The external branch or exognath is narrow and has at its base a falciform prolongation which is bent around forward and lodged in a groove of the ischium of the endognath. The merus is much extended backward and then inward so as to cut deeply the anterior border of the ischium.

Chelipeds little enlarged. Ambulatory legs slender, with very hooked dactyli.

Known only from the two species here described.

KEY TO THE SPECIES OF THE GENUS TYCHE

A¹. Preorbital horns subparallel. Posterior margin of carapace not medially notched ..... **lamellifrons, p. 508.**

A². Preorbital horns strongly divergent. Posterior margin of carapace medially notched ..... **emarginata, p. 508.**

Analogous species on opposite sides of the continent: *emarginata* (Atlantic); *lamellifrons* (Pacific).

TYCHE LAMELLIFRONS Bell

Plate 273, figs. 1–6

Tyche lamellifrons Bell, Proc. Zool. Soc. London, vol. 3, 1835 (1836), p. 173 (type-locality, Panama; type in Brit. Mus.); Trans. Zool. Soc. London, vol. 2, 1836, p. 58, pl. 12, figs. 3, 3*f–j*.—Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 10, 1871, p. 97.—A. Milne Edwards, Crust. Rég. Mex., 1878, p. 126.

Tyche brevipostris [for *brevirostris*] Lockington, Proc. California Acad. Sci., vol. 7, 1876 (1877), p. 74 [12] (type-locality, Port Escondido, Gulf of California; type not extant).

Diagnosis.—Preorbital horns subparallel. Posterior margin of carapace entire or faintly trilobate. Posterior half of carapace, measured from median gastric tubercle, as wide as long.

Description.—General aspect that of a dried leaf (Lockington). Carapace very wide in front; gastric region swollen, cardiac and branchial regions depressed. Lateral borders straight and nearly parallel at hepatic regions, rounded at branchial regions. Posterior border lamellate. Front with two small, flat horns curved toward each other, extremities bispinose. The superior orbital border extends in the form of a plate over the eye and projects nearly forward in a strong horn. A deep fissure separates orbit from hepatic margin.

Chelipeds of male slender, smooth, shorter than the next pair of legs; fingers touching only at their extremity. Ambulatory legs very slender and cylindrical.

Color.—A dull, uniform brown, paler beneath (Bell).

Measurements.—Male, cotype (Bell), length of carapace including rostrum 7 lines (17.8 mm.), width 4 lines (10.2 mm.). Ovigerous female (Paris Mus.), length 23.1, width 14.2 mm.

Range.—From Gulf of California to Panama; on sandy bottom (Bell). To a depth of 10 fathoms.

Material examined.—

Gulf of California; lat. 24° 22′ 15″ N.; long. 110° 19′ 15″ W.; 7 fathoms; brk. Co.; April 30, 1888; station 2825, *Albatross;* 1 male (21905).

Lower California; Diguet, collector; 1 ovigerous female (Paris Mus.).

TYCHE EMARGINATA White

Plate 272; plate 273, figs. 7–12

Tyche emarginata White, Ann. Mag. Nat. Hist., vol. 20, 1847, p. 206 (type-locality, West Indies; type in Brit. Mus.).—Stimpson, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 119.—A. Milne Edwards, Crust. Rég. Mex. 1873, pl. 13, figs. 1–1*c;* 1878, p. 126.—Aurivillius, K. Svenska Vetensk.-Akad. Handl., vol. 23, No. 4, 1889, p. 43, pl. 3, fig. 4.

Platyrinchus trituberculatus Desbonne, in Desbonne and Schramm, Crust. Guadeloupe, 1867, p. 3, pl. 3, figs. 7 and 8 (type-locality, Guadeloupe at Moule, Northwest Bay; type probably not extant).

Material examined of Tyche emarginata

Locality	Bearings		Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	Latitude N.	Longitude W.									
Florida:	° ′ ″	° ′ ″			° *C*						
Pepperfish Key Section	29 21 00	83 32 00	6, 75	rky	16, 7	Nov. 21, 1901	7160	*Fish Hawk*	1♀	46770	
North Key Section	29 00 00	83 18 45	5, 75	rky. Co	15, 3	Nov. 28, 1901	7182	do	1♀	46730	
Do	28 54 00	83 30 30	11	R. Co. S	17	do	7185	do	1♀	46731	
Do	28 52 15	83 21 00	7, 5	R. Co	16, 2	Nov. 27, 1901	7183	do	1♀	46771	
Do	28 47 55	83 16 30	8	rky. grsy	17	Dec. 9, 1901	7211	do	1♂	46772	
Off Key West			(1)			1893	46	State Univ. Iowa Bahama Exped.	1♂	20018	
			Frat								
Pigeon Key Lake	11½ miles NW. of Knights Key.		10. 5	rky		Jan. 7, 1903	7309	*Fish Hawk*	1♂	47105	Covered with algae.
Inside Sombrero Key								U. S. C. S. S. *Bache.*	1♂	1918, M.C.Z.	
Bahamas:			*Fathoms*								
Off Little Cat Island	On submerged bank connecting Cat Id. with Eleuthera.		3-13			1893		State Univ. Iowa Bahama Exped.	1♂	Mus. S. U. I.	
Turks Island									1♀	Amer. Mus.	
	Lat. S.				° *F*						
Brazil: Off Cape St. Roque	6 59 30	34 47 00	20	brk. Sh	79	Dec. 16, 1887	2738	*Albatross*	1♂	21906	

[1] Shallow water.

Diagnosis. — Preorbital horns strongly divergent and similar to those of the rostrum. Posterior margin medially notched. Posterior portion of carapace longer than wide.

Description. — Distinguished from *T. lamellifrons* by the form of the front, the lateral horns of which are very divergent, longer and more elevated than the median, and by the two lamellate expansions which are prolonged behind the carapace. The gastric region is on a plane much more elevated than the front; it bears three tubercles, of which two are anterior, and the third posterior and median. Dorsal surface of hepatic region concave. There is a large tubercle on anterior branchial lobe and a prominent tuberculate crest on branchial regions above the lateral margin. The cardiac lobe bears three small tubercles.

Chelipeds of male more than twice the length of postorbital part of carapace; palms somewhat di-

lated and compressed; fingers gaping at base, dentate throughout their whole length. Dactyli of ambulatory legs spinulous on their middle third, the spinules increasing in size distally.

Stout hooked hairs ornament the rostrum, the prominent parts of the carapace and the feet.

Color.—General color yellowish-gray; carapace greenish above, with two triangular white spots; blackish above the base of the legs (Desbonne).

Measurements.—Female, length of carapace 35, width 21 mm. (A. Milne Edwards).

Range.—West coast of Florida to Bahamas, West Indies and Cape St. Roque, Brazil. Shallow water to 20 fathoms.

Material examined.—See table, page 509.

Other records.—Tortugas (A. Milne Edwards); St. Thomas (Aurivillius); Guadeloupe (Desbonne).

Family PARTHENOPIDAE

Parthenopiens and *Cancériens cryptopodes* MILNE EDWARDS, Hist. Nat. Crust., vol. 1, 1834, pp. 347 and 368.

Parthenopinea DANA, U. S. Explor. Exped., vol. 13, Crust., 1852, pp. 77 and 136.

Parthenopinea and *Parthenopidae* MIERS, Journ. Linn. Soc. London, Zool., vol. 14, 1879, pp. 649 and 667.

Parthenopidae ALCOCK, Journ. Asiat. Soc. Bengal, vol. 64, 1895, p. 257.—BORRADAILE, Ann. Mag. Nat. Hist., ser. 7, vol. 19, 1907, p. 480.

Chelipeds not specially mobile, usually much longer and heavier than the other legs, and with fingers bent on the hand at an angle towards the side on which the fixed finger is set. Second article of antennae small, short, and not fused with epistome or front. Orbits well made. Hooked hairs almost always wanting. Male openings coxal. The palp of the external maxillipeds is articulated at the antero-internal angle of the merus. (Borradaile.)

The family is divided into two subfamilies, the Parthenopinae and the Eumedoninae. All of the genera represented in American waters belong to the first, which is much the larger subfamily.

Subfamily PARTHENOPINAE

Parthenopinae MIERS, Journ. Linn. Soc. London, Zool., vol. 14, 1879, p. 668.

Carapace commonly equilaterally-triangular, sometimes subpentagonal or ovate-pentagonal, and sometimes semicircular or semielliptical in outline; cardiac and gastric regions usually so deeply marked off from the branchial regions on either side as to make the dorsal surface of the carapace trilobed; chelipeds vastly longer and more massive than the ambulatory legs; rostrum simple or obscurely trilobed. (Alcock.)

KEY TO THE AMERICAN GENERA AND SUBGENERA OF THE FAMILY PARTHENOPIDAE

A¹. Carapace not laterally expanded over the ambulatory legs.
B¹. Carapace tuberculate or eroded.
C¹. Basal antennal article short, not reaching front. Merus of cheliped not thigh-shaped---------- **Parthenope**, p. 511.
D¹. Chelipeds more than twice as long as carapace.
E¹. Carapace ovate-pentagonal, surface little carinate in adult. Subgenus **Parthenope**, p. 513.
E². Carapace carinate or tuberculate, broadly triangular, with more or less rounded sides---------- Subgenus **Platylambrus**, p. 516.
D². Chelipeds less than twice as long as carapace, stout and contorted. Subgenus **Pseudolambrus**, p. 528.
C². Basal antennal article rather long, reaching or nearly reaching orbital hiatus.
D¹. Merus of cheliped thigh-shaped, tapering distally. Manus more slender---------- **Thyrolambrus**, p. 531.
D². Merus subtriangular in cross-section, not tapering distally. Manus stouter---------- **Tutankhamen**, p. 530.
B². Carapace smooth, except for a few strong spines.
C¹. Efferent branchial channels opening at sides of endostome (as is customary in the Oxyrhyncha).
D¹. Carapace high, without a strong lateral spine-- **Solenolambrus**, p. 534.
D². Carapace depressed, with a strong lateral spine-- **Leiolambrus**, p. 543.
C². Efferent branchial channels opening at middle of endostome, as in the Oxystomata---------- **Mesorhoea**, p. 546.
A². Carapace more or less expanded to form a vault in which the ambulatory legs are concealed.
B¹. Carapace oval, expanded laterally but not posteriorly. No ridge on pterygostomian region---------- **Aethra**, p. 550.
B². Carapace subtriangular or pentagonal.
C¹. Carapace greatly expanded both laterally and posteriorly. Pterygostomian region smooth, not ridged---------- **Cryptopodia**, p. 553.
C². Carapace expanded laterally but not posteriorly. Pterygostomian and subhepatic regions traversed by a granulate or crenulate ridge. **Heterocrypta**, p. 554.

Genus PARTHENOPE Weber

Parthenope Weber, Nomenclator entomologicus, 1795, p. 92; type, *P. longimanus* (Linnaeus).—Rathbun, Proc. Biol. Soc. Washington, vol. 17, 1904, p. 171. Not *Parthenope* Fabricius, Entom. Syst., Suppl., 1798, p. 315.

Lambrus Leach, Trans. Linn. Soc. London, vol. 11, 1815, pp. 308 and 310; type, *L. longimanus* (Linnaeus).—Alcock, Journ. Asiat. Soc. Bengal, vol. 64, 1895, p. 259, and synonymy.

Carapace either broadly triangular or ovate-pentagonal with short, pointed front. Surface granular, tubercular, or spiny. Eyes inclosed in distinct orbits, with a suture above and hiatus below, the hiatus occupied by the second joint of antennal peduncle. The antennules fold obliquely. Antennae small; their basal joint, which is extremely short and does not reach the front, is wedged in between the antennulary fossa and the large lobe that constitutes floor of orbit. Buccal frame usually quadrangular, sometimes a little nar-

rowed in front; completely closed by the external maxillipeds. Chelipeds usually of immense size and length, out of all proportion to the short, slender ambulatory legs; arm and hand usually prismatic with the borders strongly dentate; fingers much shorter than palm and abruptly curved inward and a little downward. (After Alcock.)

A large genus ranging from the continental slope off southern New England to southern Brazil, from western Mexico to Panama and Galapagos Islands, and throughout the Indo-Pacific region, the Mediterranean sea and eastern Atlantic Ocean.

KEY TO THE AMERICAN SUBGENERA AND SPECIES OF THE GENUS PARTHENOPE

A¹. Chelipeds more than twice as long as carapace.
B¹. Carapace ovate-pentagonal, surface little carinate in adult. Subgenus **Parthenope**, p. 513.
C¹. Second segment of abdomen trilobed, lobes conspicuous in dorsal view. A slender spine at tip of rostrum ---- **agonus**, p. 513.
C². Lobes or teeth of abdomen invisible in dorsal view. No slender spine at tip of rostrum ---- **hyponca**, p. 514.
B². Carapace carinate or tuberculate, broadly triangular, with more or less rounded sides ---- Subgenus **Platylambrus**, p. 516.
C¹. Carapace and chelipeds very flat; spine at end of main, dorsal branchial ridge small ---- **serrata**, p. 516.
C². Carapace very convex; spine at end of main, dorsal branchial ridge large. Chelipeds not flat.
D¹. Three larger tubercles on posterior margin, one of which is median.
E¹. Carapace much broader than long. Manus with 8 to 10 teeth on inner and 10 to 12 on outer margin.
F¹. Inner oblique row of tubercles on branchial region depressed, situated in branchio-cardiac fossa ---- **pourtalesii**, p. 521.
F². Inner oblique row of tubercles on branchial region elevated. **exilipes**, p. 523.
E². Carapace not much, if any, broader than long. Manus with few good-sized marginal teeth, 6 to 8 on inner, and 3 to 5 on outer margin ---- **fraterculus**, p. 525.
D². Four larger tubercles on posterior margin, those of inner pair on each side of middle.
E¹. Carapace two-fifths broader than long. Marginal teeth elongate, subacute, spiniform ---- **depressiuscula**, p. 524.
E². Carapace narrower, two-sevenths broader than long. Marginal teeth shorter, suboblong, blunt, lobiform ---- **guerini**, p. 525.
A². Chelipeds less than twice as long as carapace, stout and contorted. Subgenus **Pseudolambrus**, p. 528.
B¹. Antero-lateral margins oblique and nearly straight, without distinct angle. Upper margins of palm 8- or 9-toothed ---- **triangula**, p. 528.
B². Antero-lateral margins distinctly angled, the outer part parallel with axis of body. Upper margins of palm respectively 4- and 6-toothed. **excavata**, p. 529.

ANALOGOUS SPECIES ON OPPOSITE SIDES OF THE CONTINENT

Atlantic	Pacific
pourtalesii.	*exilipes.*
guerini.	*depressiuscu la.*

Subgenus PARTHENOPE

Lambrus A. MILNE EDWARDS (restricted), Crust. Rég. Mex., 1878, p. 146; type, *L. longimanus*.—MIERS, *Challenger* Rept., Zool., vol. 17, 1886, p. 92 (part).—ALCOCK, Journ. Asiat. Soc. Bengal, vol. 64, 1895, p. 260.

Parthenope RATHBUN, K. Danske Vidensk. Selsk. Skrifter, 7 Raekke, naturv. og math., Afd. 5, No. 4, 1910, p. 319.

Carapace ovate-pentagonal or subcircular, with the surface granular or pustular and but little carinate in the adult; rostrum usually exceedingly short.

PARTHENOPE (PARTHENOPE) AGONUS (Stimpson)

Plates 178 and 179; plate 275, figs. 1–3

Lambrus agonus STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 131 (type-localities, off the Marquesas, off Carysfort Reef, off Conch Reef, 40 and 49 fathoms; types not extant).—A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 151; 1879, pl. 28, figs. 3–3*c*.

Diagnosis.—Carapace subcircular. A ventral spine on each side opposite cheliped. Chelipeds very long; four or nearly four times as long as carapace. Second segment of abdomen conspicuously three-lobed.

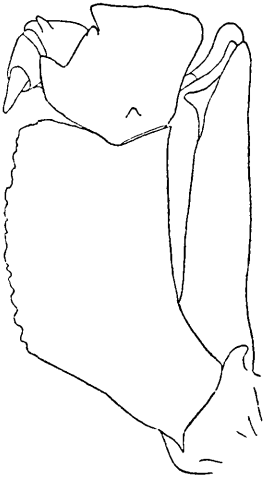

FIG. 146.—PARTHENOPE AGONUS (51009), MAXILLIPED, × 11.7

Description.—Carapace ovate-pentagonal or subcircular, about one-fifth broader than long, with rounded sides, without angles; a moderate postorbital constriction, which, however, does not involve a prominent, dentate, pterygostomian ridge which continues from the lower orbit to a point above the cheliped. Depressions between regions not remarkably deep. Surface coarsely punctate or eroded, and with numerous granules and tubercles; the larger tubercles more or less spiniform and arranged as follows: Five on gastric region, of which four are near the middle in a transverse line, and the other, larger, on median line, further back; three in a longitudinal row on cardiac region; one on each side of urocardiac lobe; five on each branchial region, the posterior one being prolonged in a spine; one on each hepatic region. The antero-lateral margin of branchial region is armed with six small teeth; below and behind the last a broad triangular tooth; and still lower down and on the ventral surface a stout spine visible between the ischia of the cheliped and first leg. Median rostral tooth narrow and produced; a few denticles at its base on either side, and an acute forward-pointing tooth over each antennular cavity. Several spines on outer margin of orbit and a small spine on upper surface of eye.

Chelipeds very long and slender (the arm about 1.33 times width of carapace), their upper surface finely rugose; an irregular row of dentiform tubercles near middle of upper surface of arm and wrist and nearer outer margin of hand; inner and outer margins of arm and wrist with similar tubercles; upon upper margin of hand a series of 18 or 20 irregular teeth, increasing generally in size to a point near the fingers, where they diminish; on the outer margin 4 to 6 larger teeth and many intermediate smaller ones. Legs long, for the genus (first one reaching end of wrist), slender, bare and almost smooth, having only some faint indications of spinules on upper margins of merus joints. A conical spine or tubercle on each side of sternum near base of chelipeds; another on coxal joint of chelipeds. The second segment of abdomen has a sharp transverse crest, forming a prominent lobe in the center and a tooth on each side.

Measurements.—Male (15173), length of carapace 15.4, width of same 18.6, length of arm 24.2 mm.

Variation.—The rostrum may be broadly triangular, subentire, instead of tridentate with marginal denticulations. In the young the pterygostomian ridge is less developed anteriorly and the postorbital constriction is more evident, causing a resemblance to the subgenus *Rhinolambrus* A. Milne Edwards.[57]

Range.—North Carolina; Gulf of Mexico along the coast of Florida to Florida Straits and Cape Florida; West Indies; Trinidad. Depth, 25 to 115 fathoms.

Material examined.—See table, page 515.

PARTHENOPE (PARTHENOPE) HYPONCA (Stimpson)

Plate 275, figs. 4–6

Lambrus hyponcus Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 10, 1871, p. 100 [127], (type-locality, Panama; type not extant).—A. Milne Edwards, Crust. Rég. Mex., 1878, p. 153, pl. 30, figs. 3–3*b*.

Parthenope (*Parthenope*) *hyponcus* Rathbun, Proc. U. S. Nat. Mus., vol. 38, 1910, p. 576.

Diagnosis.—Carapace broadly ovate. Rostrum broadly triangular at extremity. Merus joints of ambulatories with entire margins except extremity of fourth; dactyli naked.

Description.—Carapace subrhomboidal, posterior region being well developed and prominent. One low tubercle on gastric region, two large, prominent ones on cardiac region, one small, spiniform one on posterior margin at median line, and two rather large ones on branchial region, the posterior of which is taller and close to postero-lateral margin. Besides these tubercles there are several other, minute ones, roughly arranged in 8 or 10 longitudinal rows. General surface covered with crowded punctures; two or three small pits in depression

[57] Crust. Rég. Mex., 1878, p. 148.

Material examined of Parthenope (Parthenope) agonus

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.
North Carolina:	° ′ ″	° ′ ″			°F					
	35 35 20	74 58 45								
Off Cape Hatteras	34 12 00	76 04 56	27	crs. gy. S		Oct. 20, 1884	2296	*Albatross*	1♂	7250.
Gulf Stream off Cape Lookout.	23 miles E. of Lookout Lightship, off Beaufort.		47		[1] 67.8	Sept. 3, 1914	8249	*Fish Hawk*	1♀	51009.
Do	30 miles due S. of Lookout Lightship.					July 28, 1915		do	1 y. ♂	50457.
Florida:										
South of Pensacola	29 28 00	87 56 00	27	gy. S. brk. Sh		Mar. 4, 1885	2389	*Albatross*	1♂	9700.
Off Cape San Blas	29 18 15	85 32 00	25	crs. gy. S. brk. Sh		Feb. 7, 1885	2370	do	2♂	15172.
South of Cape San Blas	28 44 00	85 16 00	60	gy. S		Mar. 15, 1885	2404	do	2♂ 1♀	15173.
Do	28 45 00	85 02 00	30	gy. S. brk. Co		do	2405	do	3♂ 3♀ (1 ovig.)	15174.
Do	28 46 00	84 49 00	26	crs. S. Co		do	2406	do	1♂	17879.
West of Charlotte Harbor	26 30 00	83 30 00	33	gy. S. Algae	68	Mar. 23, 1889	5116	*Grampus*	1♂	15213.
Do	26 30 00	83 19 00	27.5	gy. S. brk. Sh	67.5	do	5115	do	1♂	15327
Southwest of Charlotte Harbor.	26 19 00	83 22 00	31	S. G. bk. Sp	67.5	Mar. 18, 1889	5107	do	1♀ y	15326.
Do	26 13 00	83 44 00	51	wh. S	69	do	5104	do	1♀	15212.
Do	26 08 00	83 22 00	33	S. bk. Sp	69.5	do	5102	do	1♂ 1♀	15211.
Northwest of Dry Tortugas.	25 34 30	83 01 00	27	fne. S. bk. Sp. hrd.	68	Mar. 2, 1889	5079	do	1♀	15210.
Do	25 34 00	83 07 00	30	fne. S. bk. Sp	68.5	Mar. 1, 1889	5078	do	1♂	15325.
Do	25 34 00	83 28 00	39	G. Co. fne. Sh	69	do	5076	do	2♂	15209.
Do	25 00 31	82 51 40	25	Sh. Co. Sponges hrd.	68.5	Feb. 16, 1889	5053	do	1♀	15324.
Off Key West	Sand Key Light bearing W.NW., Key West Light bearing N.		60			June 19, 1893	24	State Univ. Iowa Exped.	2♂ 1♀	Mus. S. U. I.
Do	Nearly as above		60			do	26	do	3♂ 3♀	Mus. S. U. I.
Southeast of Key West	24 25 45	81 46 00	45	Co	75	Jan. 15, 1885	2318	*Albatross*	1♀	15171.
South by east from Sand Key Light.			61					J. B. Henderson	1 y.	48900.
Gulf Stream, South of Key West, near edge of Pourtales Plateau.			90	co. Fragments				do	1♂	48902.
Gulf Stream, off Cape Florida.	1 m. E.¼ N. of Fowey Rocks Light.		50	fne. gy. S. Co	69	Mar. 30, 1903	7516	*Fish Hawk*	1♂ 1♀	49014.
West Indies:										
Mayaguez Harbor, Porto Rico.	Point del Algarrobo, E. 2¾ m.		75–76	rky. S. Co	68.5	Jan. 20, 1899	6063	do	1♂	24234.
Off Trinidad	11 07 00	62 14 30	73	bu. M		Jan. 30, 1884	2120	*Albatross*	1♀	7830.

[1] Approximate.

between branchial and gastric regions. Antero-lateral margin behind cervical sulcus armed with eight triangular, denticulated teeth, the posterior one but little longer than the others which are equal. Front smooth; rostrum of moderate size, subtriangular, deflexed, sides slightly concave, unarmed, apex obtuse. Chelipeds long, surface smooth above except of merus which has a median tuberculated ridge; edges of merus, carpus and manus armed with small teeth, which on superior edge of merus are spiniform; outer edge of manus with 16 teeth alternating in size; below, the chelipeds are smooth and glabrous except inner edges which are tuberculated; tubercles small. Sternum with a strongly prominent, almost capitate tubercle on each side at base of chelipeds, which also bear a small tubercle on basal joint; these four tubercles are somewhat flattened at top and bent forward. In the female abdomen the segments are each armed with a transverse ridge, more or less developed; on second and third joints this ridge is strongly toothed and on penult joint it appears in form of a median tubercle. (After Stimpson.)

Measurements.—Sterile female, holotype, length of carapace 15.2, width of same 17.2, proportion 1: 1.13; length of merus of cheliped 15.2 mm. (After Stimpson.) Specimen from Mazatlan, sex not given, length of carapace 29, width of same 32, length of arm 30, of hand 32 mm. (After A. Milne Edwards.)

Range.—Mazatlan, Mexico (A. Milne Edwards); Panama (type-locality).

Subgenus PLATYLAMBRUS Stimpson

Platylambrus STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 129; type, *Lambrus crenulatus* Saussure, 1858=*L. serratus* Milne Edwards, 1834.—A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 146.

Enoplolambrus A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 147; type, *L. carenatus* Milne Edwards.

Lambrus MIERS, *Challenger* Rept., Zool., vol. 17, 1886, p. 92 (part).

Carapace carinated or tuberculated, broader than long, broadly triangular with rounded sides and a broad but acute and projecting rostrum; no postocular constriction; chelipeds with the meropodite and palm straight, the former joint prismatic, the latter sharply trigonal, the anterior and posterior borders of both joints sharply laciniate or serrate, as is also the outer edge of the carpus. (Alcock.)

PARTHENOPE (PLATYLAMBRUS) SERRATA (Milne Edwards)

Plates 180 and 181; plate 275, figs. 7–10

Lambrus serratus MILNE EDWARDS, Hist. Nat. Crust., vol. 1, 1834, p. 357, not synonymy (type-locality, *l'Océan indien* [by error]; type in Paris Mus.). Not *Lambrus serratus* White, List Crust. Brit. Mus., 1847, p. 12.

Lambrus lupoides WHITE, List Crust. Brit. Mus., 1847, p. 12, *nomen nudum* (type-locality, West Indies; type in Brit. Mus.).

Lambrus crenulatus SAUSSURE, Mém. Soc. Phys. Hist. Nat. Genève, vol. 14, 1858, p. 429 [13], pl. 1, figs. 4, 4*a* (type-locality, *les mers des Antilles;* type in Geneva Mus.).—DESBONNE and SCHRAMM, Crust. Guadeloupe, 1867, p. 21.—STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 129.—GUNDLACH and TORRALBAS, An. Acad. Habana, vol. 36, 1899 (1900), p. 301, text-fig. on p. 303; reprint, 1917, p. 12, pl. [2], fig. 5.

Lambrus melanodactylus DESBONNE in Desbonne and Schramm, Crust. Guadeloupe, 1867, p. 21 (type-locality, Guadeloupe; type in Guadeloupe Mus.?).

Platylambrus crenulatus STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 129.

Platylambrus serratus A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 156 pl. 30, figs. 1–1*c*.

Lambrus granulatus KINGSLEY, Proc. Boston Soc. Nat. Hist., vol. 20 1879, p. 150 (type-locality, Tortugas, Florida, 9 fathoms; cotype in U. S. Nat. Mus.).

Parthenope (*Platylambrus*) *crenulata* VERRILL, Trans. Conn. Acad. Arts and Sci., vol. 13, 1908, p. 417, pl. 28, fig. 5.

Parthenope crenulata VERRILL, Trans. Conn. Acad. Arts and Sci., vol. 26, 1922, p. 155, text-fig. 12.

Diagnosis.—Carapace flattened, with a large lateral spine. Suborbital and subhepatic regions deeply and smoothly excavated. Chelipeds over three times in male, two and a half times in female, as long as carapace, multidentate.

Description.—Carapace depressed, about one and a half times as broad as long, antero-lateral margin of branchial region very convex, separated by a long, flat, outward-pointing spine from the concave postero-lateral margin, posterior margin wide and slightly convex. Elevations ornamented with numerous unequal, granulated tubercles, some of those on branchial regions sharp. The deepest depression is that between gastric and branchial regions. Rostrum short, channeled, tridentate; below and outside each lateral tooth a smaller, narrower tooth. Seven or eight triangular teeth on the branchial margin in advance of the lateral spine. Of the tubercles on the posterior and postero-lateral margins seven are noticeably larger than the others, and each terminates a longitudinal or oblique line of tubercles. An excavation of pterygostomian and subhepatic regions reaches infero-exterior margin of orbit, forming, when the chelipeds are retracted, covered afferent passages, the external apertures of which are seen between base of finger and margin of orbit. Chelipeds long and flattened, lower face smooth, outer margin coarsely serrated, nine teeth, alternately large and small, on hand; teeth of inner margin smaller and more numerous (15 or 16 on hand); upper surface showing a few tubercles on hand but more on arm, where there is a longitudinal row near middle. Legs slightly spinulous, in the main smooth; first pair not reaching end of arm. Abdomen of male with segments three to five fused, segment six with a median spine.

Material examined of Parthenope (Platylambrus) serrata

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
North Carolina:	° ′ ″	° ′ ″			°C						
Off Cape Hatteras	35 25 20	74 58 45	27	crs. gy. S.		Oct. 20, 1884	2296	*Albatross*	1♂ 1y. ♀	7249	
Off Cape Lookout	31 38 00	76 12 00	18	fne. gy. S.		Oct. 19, 1885	2607	do	1♂ 2♀	18799	
Off Cape Fear	33 37 15	77 35 30	17	crs. yl. S. brk. Sh.		Oct. 20, 1885	2618	do	1♂	17865	
Florida:											
Pensacola						1882		Silas Stearns	1♀	4500	
Off Cape San Blas	29 10 00	85 31 00	30	S. bk. Sp. brk. Sh.		Feb. 7, 1885	2375	*Albatross*	1 chela	9676	
Do	28 45 00	85 02 00	30	gy. S. brk. Co.		Mar. 15, 1885	2405	do	1♂	15168	
South of St. George Island.	28 46 00	84 49 00	26	crs. S. Co		do	2406	do	1 y. ♂	49200	
Deadmans Bay section	29 35 20	83 56 00	9.5	S. Co	23	Nov. 7, 1901	7153	*Fish Hawk*	1 y. ♂	49199	
Do	29 24 30	83 49 30	10	R. Co	17	Dec. 6, 1901	7202	do	1 y. ♀	49198	
Do	29 30 15	83 41 30	5.75	S	15.2	do	7204	do	1 y. ♂	49197	
North Key section	28 59 15	83 32 30	9.5	sdy. grsy	17	Nov. 27, 1901	7175	do	3♂ (1 soft shell)	49007	
Pepperfish Key section	29 08 45	83 28 00	6.25	S. G	16	do	7170	do	1♂	49006	
					°F						
West of Charlotte Harbor.	26 39 38	83 23 00	28	S. bk. Sp	66	Mar. 26, 1889	5122	*Grampus*	1♂	15215	
Do	26 33 30	83 15 30	27	fne. wh. S. bk. Sp.		Mar. 18, 1885	2411	*Albatross*	1♀	9827	
Off Anclote	Anclote Light, E. ⅛ S., 14 miles.		8.5	Co	63.95	Jan. 11, 1913	20	*Fish Hawk*	2♂	50458	
					°C						
Highland section	27 43 30	82 58 00	6.5	S	15.5	Jan. 29, 1902	7263	do	1♀	49005	
Off Sanibel Islands	Bell buoy off Sanibel Islands Light, NE., 10 to 2.5 miles.		4.75	Sh. wh. M		Jan. 1, 1913	9	do	1♂ 1♂ 2♀ 2 y	55602 50459	
					°F						
Southwest of Charlotte Harbor.	26 17 30	83 00 00	24	fne. gy. S. bk. Sp.	67	Mar. 21, 1889	5109	*Grampus*	1 y	15217	
Do	26 07 30	82 38 00	18	hrd. S	66	Mar. 17, 1889	5098	do	1 y	15216	
Tortugas			9					Lieut. Jacques	1 y. ♀	55696	Cotype of *L. granulatus*. From Boston Soc. Nat. Hist.
Do						1893		State Univ. Iowa Exped.	3♂	Mus. S. U. I.	

Off Dry Tortugas			16					J. B. Henderson	1♂ 1 y	49000
Do			4					do	6♂ 3♀	48997
About 4 miles east of Dry Tortugas.			15					do	3♂	48998
Gulf of Mexico	5 miles off breakwater, NW. Passage to Key West.		6.5					do	1♂	48999
Do	Smith Shoal, N. of Key West.		1-5					do	1 y	50373
					°C					
West Channel, entrance to Key West.			6.75	co. S. brk. Sh	19.8	Feb. 13, 1902	7274	*Fish Hawk*	1 y, ♀	49002
Gulf of Mexico	24 46 12	81 53 30	10.25	Co	19	Feb. 21, 1902	7290	do	1♀	49016
	Off NW. Channel.									
Off Key West, inside reef.			6	co. S	20	Feb. 13, 1902	7276	do	1♂ 1 ovig. ♀	49008
Do			5.25	co. S. G	20	do	7277	do	1♂ 2♀ 1 y	49003
Do			5.25	co. S. G	20	do	7278	do	2♂	49001
Off Key West			(1)			June 26, 1893	45	State Univ. Iowa Exped.	1♂ 1♀	18675
Do	Key West Light bearing N.		6			June 30, 1893	66	do	1♀	Mus. S. U. I.
Do						do	67	do	2♂ 1♀	Mus. S. U. I.
Florida Bay	25 00 48	81 18 55	3.5	Sp. S. Sh	23	Dec. 19, 1902	7371	*Fish Hawk*	1♂ 2♀	49010
Do	25 01 00	81 25 30	4.5	Sp. S. Sh	23	do	7373	do	3♀	49011
Do	25 10 10	81 28 30	4.75	hrd. gy. S. Sh	23.5	Dec. 17, 1902	7354	do	2♂ 2♀	49009
Grecian Shoals, Hawk Channel.	¼ mile SW. by S. of Basin Hill Beacon.		2	S. G		Feb. 19, 1903	7469	do	1♂ 2♀	49012
Key, Biscayne Bay	1 mile N. of Feather Bed Bank.		2	S. G		Mar. 7, 1903	7481	do	1♀	49013
Bahamas: Off Governor's Harbor, Eleuthera Island.			5			July 7, 1903		B. A. Bean	1♀	31064
West Indies:										
Bahia Honda, Cuba						1893		State Univ. Iowa Exped.	1♂	Mus. S. U. I.
Jamaica								T. H. Morgan	1♀	17212
Mayaguez Harbor, Porto Rico.						Jan. 20, 1899		*Fish Hawk*	1 y	24235
St. Thomas										Copenhagen Mus.
Piescaderos Bay, Curaçao.			(2)	St		July 21, 1905		J. Boeke	1♂	Leiden Mus.

[1] Shallow.

[2] Very shallow.

Material examined of Parthenope (Platylambrus) pourtalesii

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
New Jersey:	° ′ ″	° ′ ″			°F						
East of New Jersey and south of Marthas Vineyard, Mass.	40 07 00	70 32 00	71	S. Sh. M.	52	Aug. 23, 1881	950	*Fish Hawk*	1 y. ♂ 1 ♂	39938 18797	
Do	40 05 39	70 23 52	86	S. G. Sh. Sponge.	50.5	Sept. 4, 1880	872	do	2 ♀	7308	1 is holotype of *Lambrus verrillii*.
Do	40 05 00 to 40 05 42	70 22 06 to 70 23 00	64–65	Compact fine S. M. brk. Sh.	53–68.5	do	865–7	do	1 ♀	18798	
Do	40 03 00	70 31 00	100	yl. M.	52	Aug. 23, 1881	949	do	2 ♂ 1 ♀	5772 18796	
Do	39 54 00	69 51 30	134	hd. S. Sponges.	52	Aug. 4, 1881	940	do	1 ♀	4559	
North Carolina:											
Off Cape Hatteras	35 10 40	75 06 10	68	gy. M.	71.3	Oct. 19, 1884	2268	*Albatross*	2 ♂	7217, 7218	
Do	35 08 30	75 10 00	49	gy. S.		Oct. 17, 1885	2596	do	1 ♂ 3 ♀	11211	
					°C						
Off Cape Lookout	Cape Lookout Lighthouse, N. NE., 4¾ miles.		10	blk. M.	27	July 14, 1902	7301	*Fish Hawk*	1 ♂ 1 ♀	49015	
Gulf Stream	30 miles due S. of Cape Lookout Lightship.							do	4	51100	
					°F						
Off Cape Fear	33 20 00	77 05 00	90	gy. S.	65.8	Apr. 2, 1885	2418	*Albatross*	1 ♀	15170	
South Carolina:											
East of Cape Romain	32 55 00	77 54 00	79	crs. S. bk. Sp.	59.1	Jan. 5, 1885	2311	do	1 ♀	17864	
Do	32 54 00	77 53 30	88	crs. S. bk. Sp.	57.8	do	2312	do	1 ♀	9440	
Florida:											
Off Fowey			75–100			May, 1917	361	*Eolis*, J. B. Henderson.	1 y.	50940	
Do			95			do	362	do	2 y.	50941	
Do			75–90			do	364	do	1 y.	50942	
Off Ragged Key			75			do	365	do	3 y.	50943	
Do			75–90			do	366	do	1 y.	50944	
Off Sambo Key			110					J. B. Henderson	1 ♂	50003	
Do			115					do	1 ♂	50370	
Off Key West	About 10 miles SW. of channel buoy marking entrance of ship channel to Key West.					Apr. 22, 1910		do	1 y. ♂	49001	

Do	Sand Key Light bearing W. NW., Key West Light bearing N.	60		June 19, 1893	24	State Univ. Iowa Exped.	1♂ 1♀		Mus. S. U. I.
Do	Key West Light bearing NW. by N., Sand Key Light, W. by N.	(1)		June 26, 1893	47	do	1♂ 1♀	18676	
Off Key West		90		Apr. 21, 1916		J. B. Henderson	1♂	50372	
Do		110				do	1 y. ♂ 1 y. ♀	50371	
Western Dry Rocks, Key West.		90				do	1 y. ♀	50369	
Do		95				do	1♂	50368	
Gulf Stream, off Key West.	21° 21′ 55″	81° 58′ 25″	98	S.	55	Feb. 14, 1902	*Fish Hawk*	7279	1 y. ♀	19143	
Off Sand Key						May, 1913	J. B. Henderson		1♂ 1♀	40018	
Do	SE. by E. ½ E. of Sand Key.		90				do		1 y	50516	
Do	S. of Sand Key		85				do		1♀ 3 y	50515	
Pourtales Plateau	10 miles S. of Sand Key, on edge of Plateau.						do		1♂	48883	
Do						1893			1♀	Mus. S. U. I.	
Off Sand Key	Sand Key Light, W., about 8 miles.		15			June 24, 1893		41	2♂ 4♀	Mus. S. U. I.	
Do	Near preceding		15			do		42	1♀	Mus. S. U. I.	
Cuba: Off Havana						May 26, 1893			1♂ 1 y	Mus. S. U. I.	

[1] About 80 fathoms.

Color.—Rosy gray, sometimes spotted with black; fingers carmine, teeth bordered with black (Desbonne).

Measurements.—Male (18675), length of carapace 18.5, width of same 27.8, length of cheliped 60.1 mm. Male, Curaçao, length 26, width 37.5 mm.

Habitat.—The arrangement of the chelipeds and the afferent passages excavated below the carapace indicates habitual concealment in the sand with only rostrum, eyes and afferent apertures exposed.

Range.—From Cape Hatteras, North Carolina, via Gulf of Mexico and Bahamas to Bahia, Brazil; Bermudas. Shallow water to 30 fathoms.

Materials examined.—See table, pages 518–519.

PARTHENOPE (PLATYLAMBRUS) POURTALESII (Stimpson)

Plates 182, 183, and 276

Lambrus pourtalesii Stimpson, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 129 (type-localities, off Conch Reef, French Reef, and American Shoal, 40 to 117 fathoms; types not extant).—A. Milne Edwards, Crust. Rég. Mex., 1878, p. 149, pl. 30, figs. 2–2*d*.

Lambrus verrillii Smith, Proc. U. S. Nat. Mus., vol. 3, 1881, p. 415 (type-localities, stations 865 to 867, 872, *Fish Hawk*, southern coast of New England,

65 and 86 fathoms; types, Cat. No. 7308, U.S.N.M.); Rept. U. S. Commr. of Fish and Fisheries for 1885 (1886), p. 628 [24], pl. 2, fig. 2.

Lambrus ponstalesi [error for *pourtalesi*] GUNDLACH and TORRALBAS, An. Acad. Habana, vol. 36, 1899 (1900), text-fig. on p. 302; reprint, 1917, pl. [2], fig. 4.

Diagnosis.—Carapace high; regions deeply separated; two large marginal spines, one at lateral angle and one at end of branchial ridge. Arms not flat above. Dactyli of legs furred.

Description.—Carapace broadly ovate-triangular, convex, the branchial regions rather deeply separated from gastric, cardiac, and hepatic regions; the longest spine is at the postero-lateral angle, and has one or two spines at its base; this is not the widest part of the carapace; hepatic margin armed with a small but prominent spine; antero-lateral margin after the cervical suture convex and armed with eight or nine teeth and spines, the first three or four shorter than the next five; post-lateral margin armed with three or four unequal spines besides the large one on the ridge; posterior margin with three larger and several smaller spines. General surface pitted and granulated and covered especially in the elevated parts with granulated tubercles of various sizes; the largest ones are disposed as follows: Four on median line, of which one is gastric, one genital, and two cardiac; two on branchial ridge in line with longest lateral spine. In the branchiocardiac depressions there are two smaller tubercles on each side forming a rectangle; there is a tendency to form several rows of tubercles on branchial regions. Front with a long narrow obtuse tooth with a denticle on each side, a subacute basal tooth, and below and outside the latter, a short spine. Lower surface granulated and tuberculated.

Chelipeds long and very rough, armed with laciniated teeth and spines; merus convex above and bearing a row of unequal spines, posterior margin armed with four or five large spines on proximal half, one near distal end, anterior margin with four or five larger spines and several smaller; the wrist has its largest spine at inner angle; hand with about 10 or 12 triangular spines on outer margin and 8 or 10 on inner margin, broader than those on outer, particularly toward fingers. Merus joints of legs spinulous and also carpus and propodus of last pair; dactyli furred. A tubercle on the sternum at base of cheliped and each of legs 1–3. A large tubercle in middle of each of second to sixth abdominal somites, and a conical tubercle at extremity of segments 2 and 3.

Color.—Palms pinkish brown with suggestion of banding. (Henderson.)

Measurements.—Male (48883), length of carapace 36.3, width of same 47, length of cheliped 122 mm.

Material examined of Parthenope (Platylambrus) exilipes

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	° ′ ″	° ′ ″			°F						
Mexico:											
Off San Domingo Point, Lower California.	26 07 00	113 32 00	74	fne. gy. S.	55	Apr. 10, 1889	3043	*Albatross*	1♂	17365	Holotype of *exilipes*.
Off Cape St. Lucas, Lower California.	22 52 00	109 55 00	31	rky	74.1	May 1, 1888	2829	do	1♂ 2♀	21968	
Off Tres Marias Islands.	21 22 15	106 25 00	80	rky	51.2	Apr. 18, 1891	3427	do	1♂ 1♀	4481, M.C.Z.	Cotypes of *hassleri*.
Panama:											
Panama Bay	7 56 00	79 41 30	51.5	gn. M		Mar. 30, 1888	2805	do	1♀	21966	
Off Cocos Island	5 32 45	86 54 30	66	rky	58.4	Feb. 28, 1891	3368	do	1♀	20599	Figured cotype of *hassleri*.
Galapagos Islands: Off Charles Island.	*Lat. S.* 1 17 00	90 31 30	78.5	gy. S. fne. G		Apr. 9, 1888	2816	do	1♀	21967	

Variation.—Varies much in number and prominence of tubercles and teeth and in constriction and ornamentation of rostrum; the elevations of the carapace may be spines or tubercles.

Range.—From the latitude of New Jersey to Grenada. Depth, 10 to 134 fathoms.

Material examined.—See table, pages 520–521.

PARTHENOPE (PLATYLAMBRUS) EXILIPES (Rathbun)

Plates 184 and 185; plate 277, figs. 1 and 2

Lambrus (*Parthenolambrus*) *exilipes* RATHBUN, Proc. U. S. Nat. Mus., vol. 16, 1893, p. 234 (type-locality, off San Domingo Point, Lower California, 74 fathoms; holotype, Cat. No. 17365, U.S.N.M.).

Lambrus hassleri FAXON, Bull. Mus. Comp. Zoöl., vol. 24, 1893, p. 152 (type-locality, *Albatross* stations 3368 and 3427, 66 and 80 fathoms; cotypes, Cat. No. 20599, U.S.N.M., and Cat. No. 4481, M.C.Z.); Mem. Mus. Comp. Zoöl., vol. 18, 1895, p. 14, pl. 3, figs. 1, 1*a*.

Diagnosis.—Near *pourtalesii;* carapace broader; branchial regions more expanded and inflated, the inflation extending farther in toward the cardiac area so as to involve the oblique row of small tubercles, which in *pourtalesii* lies low in the fossa between branchial and cardiac regions; interregional depressions shallower; branchial pits deeper; a transversely-oblique line of tubercles across anterior branchial region more conspicuous, spines and teeth of carapace and chelipeds shorter and stouter, those on chelipeds not laciniated to

such a degree; anterior margin of carpus and propodus of all the legs finely spinulous or denticulate.

Measurements.—Female (21966), length of carapace 29.7, width of same 40.3, length of cheliped 76.4 mm.

Range.—From west coast of Lower California, Mexico, to Panama and the Galapagos Islands. Depth, 31 to 80 fathoms.

Material examined.—See table, page 523.

PARTHENOPE (PLATYLAMBRUS) DEPRESSIUSCULA (Stimpson)

Plate 188

Lambrus depressiusculus STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 10 1871, p. 101 [128] (type-locality, Manzanillo, Mexico; type not extant).—A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 155.

Diagnosis.—Branchial region elongate. A long spine at end of branchial ridge and at lateral angle. No large median tubercle on posterior margin. No spine on rostrum below lateral teeth.

Description.—Body depressed though much less so than in *P. serrata.* Carapace two-fifths broader than long, regions moderately prominent, the cardiac region most so; surface covered with scattered, berried tubercles, irregular in size. Branchial region broadly expanded. Lateral margin armed with 14 or 15 spiniform, granulated teeth; two of these are in front of the cervical suture, and five on the post-lateral margin; of the latter, the second is the longest of all, recurved, and is at the end of the branchial ridge. The spine at the lateral angle, at the widest part of the carapace, is a little longer than those on either side of it. Intestinal region broad, projecting but little beyond line of postero-lateral angles; it is bordered by seven tubercles, of which the end ones are the largest and the two either side of the median one next in size. Frontal region concave; rostrum small, triangular or trilobate, horizontal. Subhepatic and pterygostomian regions moderately guttered. Upper surface of merus of cheliped armed with a row of about five unequal tubercles; margins of merus and manus armed with numerous spiniform teeth, of which there are 10 or 11 on outer margin of hand; teeth granulated like those of carapace but not ramose; beneath, the hands are ornamented with longitudinal rows of small, smooth tubercles, largest along inner edge and fading out toward exterior margin. Legs slightly compressed, not cristate, smooth and unarmed; last two and a half joints furred. A small, slender spine on penult joint of male abdomen; female abdomen furred.

Measurements.—Male, holotype, length of carapace 21.6, width including spines 29.2, length of hand 28.7 (Stimpson). Female ovigerous (17866), length of carapace 26.4, width including spines 35.2, length of hand 28.8 mm.

Range.—Manzanillo, Mexico; Panama.

Material examined.—Panama; purchased of Henry A. Ward; 2 females (1 ovigerous) (17866).

PARTHENOPE (PLATYLAMBRUS) GUERINI (Brito Capello)

Plate 190, fig. 1; plate 191; plate 278, fig. 4

Lambrus crenatus WHITE, List Crust. Brit. Mus., 1847, p. 12 (type-locality, West Indies; type, Cat. No. 45.7*a*, Brit. Mus.); *nomen nudum.*

Lambrus Guérini BRITO CAPELLO, Jorn. Sci. Math. Phys. e Nat. de Lisboa, vol. 3, 1871, p. 264, pl. 3, fig. 5 (type-locality, Ilha Mauricia; type in Mus. Nac. Lisbon).—MOREIRA, Arch. Mus. Nac. Rio de Janeiro, vol. 11, 1901, p. 61 (State of S. Paulo and Rio de Janeiro).

Lambrus guérinii var.? MIERS, *Challenger* Rept., Zool., vol. 17, 1886, p. 96.

Diagnosis.—Analogous to *P. depressiuscula.* Body thicker, and narrower, two-sevenths broader than long, depressions deeper-anterior part of branchial elevation high, prominent, forming a semi, detached nodule. Tubercles of carapace and chelipeds coarser than in *depressiuscula* and marginal teeth stouter and shorter, more lobiform than spiniform. While the arrangement of tubercles is almost identical, there is a row of tubercles and granules in front of the posterior margin, which is almost wholly absent from *depressiuscula.* The posterior margin is a little more arcuate, and the large tubercle at either end is very much larger than the intermediate tubercles. Front wider, more inclined and distinctly trilobed. Basal half of fingers with more numerous fine granules.

Measurements.—Female (Ilha Victoria), length of carapace 31.3, width of same 40.4, length of hand 30.3 mm.

Range.—West Indies and Bahia (Miers) to State of São Paulo, Brazil; Mauritius.

Material examined.—

Ilha Victoria, São Paulo, Brazil; Fr. Günther, collector; 1 female (55783).

Ubatuba, São Paulo, Brazil; E. Garbe, collector; 1 female, lent by Mus. Paulista (Cat. No. 331).

PARTHENOPE (PLATYLAMBRUS) FRATERCULUS (Stimpson)

Plates 186 and 187; plate 190, fig. 2

Lambrus fraterculus STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 130 (type-localities, off Sand Key, off Carysfort Reef, West of Tortugas, off Conch Reef, 26 to 68 fathoms; types not extant).

Diagnosis.—Carapace subtriangular. Rostrum ending in a long, narrow tooth. A slender spine outside of and below lateral tooth of front. Merus joints of ambulatories with denticulated margins; dactyli furred.

Description.—Carapace subtriangular, approximately four-sided, the postero-lateral margins continuous with the two sides of the posterior margin, and the long, antero-lateral margins in line with the rostral borders. Depressions separating branchial from cardiac and hepatic regions deep. A narrow ridge connects cardiac and gastric regions and a wider ridge the branchial and hepatic regions, below which ridge there is a deep hollow, visible in side view. Prominences ornamented with a few large tubercles and spines, as follows: Three gastric in a triangle, the posterior the larger, one genital, two cardiac, the anterior the larger, three on branchial ridge, the posterior the longest. Front inclined about 45 degrees, ending in a narrow, blunt tooth, and on each side above the antennules a blunt tooth, outside and below which there is a small slender spine. A tubercle on each preorbital lobe. A large submarginal tubercle on subhepatic region, visible in dorsal view. Margin of branchial region in front of the ridge cut into 9 or 10 small teeth, the second or third from the last being more elongate; behind the ridge 2 or 3 small teeth. Posterior margin with three distant, equal teeth. A small, blunt tooth at inner lower angle of orbit; between it and angle of buccal cavity, a large tubercle. A row of five tubercles near outer margin of endognath.

Chelipeds of male about two and a half times as long as carapace, rather slender, especially as to merus; inner, outer and upper margins of merus armed with a few, very unequal, stout spines; outer and inner margins of manus armed with triangular, denticulated and very unequal teeth, of which there are six or seven larger ones on inner margin and three or four on outer margin; on upper surface the largest tubercle is a large conical one at proximal third. Legs with merus joints denticulated and dactyli furred except at tip; carpus-propodus of last pair with two or three lobes above and five denticles below.

Sternum and abdomen tuberculate, a large, transverse tubercle on each abdominal segment from second to sixth inclusive.

Variations.—Great variation in quality of spines and tubercles, regardless of sex; in some specimens, the prominences are low and blunt, in others high and sharp; in some, the margins of frontal lobes and of orbit are denticulate, in others they are entire or subentire. The amount of inclination of front is also variable.

Color.—Uniform brick red; eggs bright red (Henderson).

Measurements.—Male (9631), length of carapace 16.2, width of same 16.8; female (15177), length of carapace 16.3, width of same 18.3 mm.

Range.—Off Cape Fear, North Carolina; Gulf of Mexico along coast of Florida, eastward to Miami and westward to Yucatan, Mexico; Barbados. Depth, 4 to 90 fathoms.

Material examined.—See table, page 527.

Material examined of Parthenope (Platylambrus) fraterculus

Locality	Bearings		Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.
	Latitude N.	Longitude W.								
	° ′ ″	° ′ ″			° F					
North Carolina: Off Cape Fear	33 20 00	77 05 00	90	gy. S	65.8	Apr. 2, 1885	2418	*Albatross*	2♂ 4 y	15182.
Florida:										
South of Cape San Blas	29 18 15	85 32 00	25	crs.gy. S. brk.Sh.		Feb. 7, 1885	2370	do	1♂ 1♀ 1 y	15178.
Do	29 15 30	85 29 30	27	G		do	2372	do	1♂ 1♀	15179.
Do	29 14 00	85 29 15	25	Co		do	2373	do	2♂ 1♀ 1 y	9621.
Do	29 11 30	85 29 00	26	S. G. brk. Sh		do	2374	do	2♂ 4 y	9631.
South of Cape St. George	28 45 00	85 02 00	30	gy. S. brk. Co		Mar. 15, 1885	2405	do	1♀	49152.
South of St. George Sound	28 46 00	84 49 00	26	crs. S. Co		do	2406	do	2♂ 1♀	15180.
Do	28 47 30	84 37 00	24	Co. brk. Sh		do	2407	do	1♂	15181.
Southwest of Charlotte Harbor.	26 19 00	83 11 00	27	S. Algae	68	Mar. 21, 1889	5108	*Grampus*	1♂	15331.
Do	26 13 00	83 44 00	51	wh. S	69	Mar. 18, 1889	5104	do	1♀ y	15330.
Northwest of Dry Tortugas	25 40 00	83 32 00	38	fne. S. Sh	68.5	Mar. 11, 1889	5089	do	1♀	15329.
Do	25 34 00	83 07 00	30	fne. S. bk. Sp	68.5	Mar. 1, 1889	5078	do	1♂	15328.
Do	25 02 00	83 31 00	37	Sh. S. Co. Algae	69.5	Feb. 17, 1889	5057	do	1♂	15214.
Off Dry Tortugas			4					J. B. Henderson	1♂	48903.
Do			16					do	1♀	48901.
Off Key West	Sand Key Light bearing NNW., Key West Light bearing N.		60			June 19, 1893	24	State Univ. Iowa Exped.	3♂	Mus. S. U. I.
Do	Nearly as above		60			do	26	do	1♂	Do.
Do	24 25 45	81 46 00	45	Co	75	Jan. 15, 1885	2318	*Albatross*	1♀	15175.
Off Sand Key			40			May, 1913		J. B. Henderson	1♀ ovig	46043.
Straits of Florida	25 05 00	80 15 00	56	Co. S		Apr. 9, 1886	2640	*Albatross*	1 y	11413.
Off Miami			30			May 12		J. B. Henderson	1♂	48901.
Do			30					do	2♀	48899.
Mexico:										
Off Cape Catoche, Yucatan	22 08 30	86 19 00	26	wh. Co		Jan. 30, 1885	2360	*Albatross*	1♀	15176.
Do	22 07 30	87 06 00	21	wh. R. Co		do	2363	do	1♀	15177.
Barbados:										
Off Lazaretto			20	rough		June 6, 1918	87	Univ. Iowa Barbados-Antigua Exped.	1♂	Mus. S. U. I.

Subgenus PSEUDOLAMBRUS Paulson

Pseudolambrus PAULSON, Investig. Crust. Red Sea, vol. 1, 1875, p. 9; type, *P. calappoides* (Adams and White).

Parthenolambrus A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 148; type, *P. tarpeius* (Adams and White).

Parthenopoides MIERS, Journ. Linn. Soc. London, Zool., vol. 14, 1879, p. 672; type, *P. massena* (Roux).

Carapace semielliptical or semicircular, with a nearly straight posterior margin, the postero-lateral angles being strongly produced. Chelipeds of no great length, never sharply serrate, and with the arms and hands indefinitely contorted. Rostrum more or less deflexed. (Alcock.)

PARTHENOPE (PSEUDOLAMBRUS) TRIANGULA (Stimpson)

Plate 278, figs. 1–3

Lambrus triangulus STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 7, 1860, p. 201 (type-locality, Cape St. Lucas; type not extant).—A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 152, pl. 31, figs. 1–1*c*.

Diagnosis.—Antero-lateral margins oblique and nearly straight, without an angle. Base of movable part of antenna protected by an over-arching tooth on each side, one on orbit, the other on epistome. Upper margins of palm 8- or 9-toothed.

Description.—Carapace an equilateral triangle, posterior margin nearly straight and scarcely exceeding antero-lateral sides in length; this results from the strong projection of the dentated posterior corners of the branchial regions which almost conceal the ambulatory feet. Antero-lateral margin with about 12 very small granulated teeth of which 3 are on the small rounded hepatic region. Surface ornamented with conical tubercles variable in number and size. Rostrum prominent, obtuse, triangular. Base of movable part of external antennae protected on each side by an over-arching tooth, one arising from the lower margin of the orbit, the other from anterior corner of epistome. Ischium of outer maxillipeds granulated, merus tuberculated. Chelipeds rather short, strongly angular and dentated; hand granulated below, but nearly smooth above between the crests, which are high and unevenly 8- or 9-toothed; teeth denticulated, middle one largest. Legs smooth and glabrous; dactyli pubescent. (After Stimpson.)

Measurements.—Female, holotype, length of carapace 14, width of same 17.5 mm.

Record of locality.—Cape St. Lucas, Lower California, Mexico; John Xantus, collector; type not extant.

PARTHENOPE (PSEUDOLAMBRUS) EXCAVATA (Stimpson)

Plate 189

Lambrus excavatus STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 10 1871, p. 98 [125] (type-locality, Manzanillo, Mexico; type not extant).—A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 154.

Diagnosis.—Antero-lateral margins angled, the outer part parallel with axis of body. Five deep depressions on anterior half of body. Chelipeds deeply concave above, upper margins of palm 4- and 6-toothed.

Description.—Carapace irregularly hexagonal, broader than long; antero-lateral margin concave, forming an angle with outer lateral margin which is nearly straight and parallel with axis of body and terminates posteriorly in a strongly projecting angle; postero-lateral margins slightly concave, forming a very obtuse angle with each other on account of the little projection of the intestinal region; periphery armed with teeth which are short, triangular, and regularly approximated on the antero-lateral and outer lateral margins but are longer, more spiniform and irregularly arranged on the postero-lateral margins. On the upper surface, besides the usual depression between cardiac and branchial regions there are four deep excavations in front of the latter region, two separating it from the hepatic and two from the gastric region; also a deep concavity on the frontal region, which is continued posteriorly for a short distance on the gastric region. Rostrum large, regularly triangular, deflexed to a right angle with general level of gastric region; margin unarmed or only obscurely toothed. Surface of protuberant parts of carapace covered with low, granulated tubercles. A row of three flat, triangular spines on ventral surface behind cheliped.

Chelipeds much shorter and stouter than in typical *Parthenope*, deeply concave above, concavity smooth or nearly so, and defined by prominent marginal crests, which, except on carpus, are strongly toothed; merus particularly short, anterior crest armed with three or four teeth, superior crest with only two large teeth, the outer much the largest; crest of superior margin of hand armed with six unequal approximated, triangular teeth, that of outer margin with two conical distant teeth besides the knob at each extremity, lower surface ornamented with four or five rows of granulated tubercles, those of middle row largest and most conspicuous; inner margin serrated with granulated teeth. Feet much compressed, crested above, margins dentate, dactyli furred. Each segment of female abdomen armed with short, setose, granulated tubercles, there being on segments two to six, a larger ridge-like tubercle in middle and four or five small ones on each side. (After Stimpson.)

Measurements.—Female (3270), length of carapace 32.4, width of same 39.2, length of right arm 18.4, length of propodus of right cheliped 31.3 mm.

Range.—Manzanillo, Mexico, to Panama.

Material examined.—Panama; Capt. John M. Dow, collector; 1 female (3270).

TUTANKHAMEN, new genus

Type.—*Mesorhoea cristatipes* A. Milne Edwards.

Diagnosis.—Having the dorsal aspect of *Parthenope*, but resembling *Mesorhoea* in its deep afferent channels. The channels, however, differ markedly from those of *Mesorhoea* in being shorter and deeper, bordered above by a laminar expansion of the hepatic and anterior branchial margins, below by a parallel lamina having an emargination near the beginning of the branchial regions; the canals terminate in a cul-de-sac behind the orbit and open on the epistome by a fissure between the external angle of the thin lamina which forms the anterior edge of the buccal cavity and a sort of promonotory formed by the infero-internal angle of the orbit. Epistome spacious and very concave, separated by a thin ridge and a considerable interval from the antennules.

Merus of maxilliped without the antero-internal angle produced forward in a point, as in *Mesorhoea*, or emarginated for the insertion of the palpus as in *Parthenope*.

This genus, typified by the so-called *Mesorhoea cristatipes*, has no obvious resemblance to the true Mesorhoeas, which are *Solenolambrus*-like in dorsal view and were placed in that genus by A. Milne Edwards. The new genus is created at the suggestion of Prof. Bouvier, from whose detailed description of the ventral surface the above diagnosis is abstracted.

TUTANKHAMEN CRISTATIPES (A. Milne Edwards)

Plate 277, figs. 3–5

Mesorhoea cristatipes A. Milne Edwards, Crust. Rég. Mex., 1880, p. 352, pl. 31A, figs. 6–6c (type-locality, St. Vincent, 124 fathoms; type in Paris Mus.); Bull. Mus. Comp. Zoöl., vol. 8, 1880, p. 5.—A. Milne Edwards and Bouvier, Mem. Mus. Comp. Zoöl., vol. 47, 1923, p. 359, pl. 10, fig. 3.

Lambrus cristatipes Rathbun, Bull. Lab. Nat. Hist. State Univ. Iowa, vol. 4, 1898, p. 261.

Diagnosis.—Carapace subtriangular. Rostrum large, deeply trilobed. Lateral teeth small. Legs unarmed.

Description.—Carapace smooth, outline almost triangular; gastric and cardiac regions very high forming a median elevation; three tubercles, one posterior and median, the others anterior and lateral, ornament the gastric region; two obtuse, median elevations on cardiac

region; branchial regions very swollen, bordered outwardly by a sharp crest which extends to the lateral angle. Front trilobed, medially much produced. Antero-lateral margins cut into many small teeth furnished with short hairs. Chelipeds long and strong; the arm has on its posterior border two or three large tubercles which are compressed and clothed with hair, and on its anterior border a sharp denticulated crest. The inner border of the hand bears a dentate crest, outer border sharp and cut into four large and well separated teeth. Two crests on upper border of movable finger. Fingers touching only at the tips, widely gaping. Legs entire, merus cristate above and below, carpus and propodus above.

Measurements.—Male, holotype, length of carapace 14, width of same 17, total width of crab with arms extended 74 mm.

Range.—Pourtales Plateau, Florida Straits; St. Vincent, Windward Islands. Depth, 124 to 200 fathoms.

Material examined.—Pourtales Plateau; lat. 24° 16′ N.; long. 81° 22′ W.; about 200 fathoms; June 27, 1893; station 56, State University of Iowa Expedition; 1 specimen (Mus. S. U. I.).

Genus THYROLAMBRUS Rathbun

Thyrolambrus Rathbun, Proc. U. S. Nat. Mus., vol. 17, Mar. 30, 1894, advance sheet, p. 1; July, 1894, p. 83; type, *T. astroides* Rathbun.

Parthenomerus Alcock, Journ. Asiat. Soc. Bengal, vol. 64, 1895, p. 280; type, *P. efflorescens* Alcock.

Carapace broader than long, deeply eroded. Frontal and antero-lateral regions strongly deflexed. Surface covered with irregular pits. Basal joint of antenna elongate, reaching or nearly reaching level of inferior orbital hiatus. Maxillipeds broad, fitting close together and filling the buccal cavity: ischium subrectangular posteriorly, inner anterior angle produced; merus broader than long, with a slight notch at antero-internal angle in which the first joint of palpus is fitted transversely; remainder of palpus concealed by merus. Chelipeds of moderate length; manus less stout than merus and armed on inner side with two rows of spines or long tubercles which are continued on the fingers.

West coast of Mexico; off Havana; Indian Ocean; East Indian Archipelago; Australia.

KEY TO THE AMERICAN SPECIES OF THE GENUS THYROLAMBRUS

A¹. Reticulation of surface very rough, frost-like. Chelae slender, armed with two rows of long spines ..... astroides, p. 532.

A². Reticulation of surface nearly smooth. Chelae stout, armed with two rows of short spines or pointed teeth ..... erosus, p. 533.

Analogous species on opposite sides of the continent: *astroides* (Atlantic); *erosus* (Pacific).

THYROLAMBRUS ASTROIDES Rathbun

Plate 196; plate 280, figs. 5 and 6

Thyrolambrus astroides RATHBUN, Proc. U. S. Nat. Mus., vol. 17, Mar. 30, 1894, advance sheet, p. 1; July, 1894, p. 83 (type-locality, off Havana, Cuba, 67 and 189 fathoms; holotype, Cat. No. 9507, U.S.N.M.).

Thryolambrus [by error] *astroides* NUTTING, Bull. Lab. Nat. Hist. State Univ. Iowa, vol. 3, 1895, p. 77, plate facing p. 76, fig. 2 (male).

Parthenope (*Parthenomerus*) *efflorescens* ALCOCK, Journ. Asiat. Soc. Bengal, vol. 64, 1895, p. 281 (type-locality, Andaman Sea, 36 fathoms; type in Indian Mus.).

Parthenope efflorescens ALCOCK, Illus. Zool. *Investigator*, Crust., pt. 4, 1896, pl. 22, figs. 5, 5*a* (female).

Diagnosis.—Reticulation of surface very rough, frost-like. Postero-lateral margins meeting posterior margin at an oblique angle; teeth acute. Chelae armed on the inner side with two rows of long spines. Hand slender; fingers slender, of subequal length.

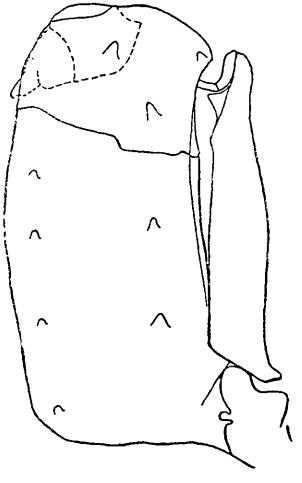

FIG. 147.—THYROLAMBRUS ASTROIDES (9515), MAXILLIPED, × 12

Description.—Entire surface covered with a lace-work or frosting, formed by the partial contact of very delicate crisply paxilliform granules (Alcock). Carapace about two-thirds as long as wide, thick, slightly wider at postero-lateral than at antero-lateral angles; frontal and antero-lateral regions almost perpendicular; posterior margin making a very oblique angle with postero-lateral margin. Besides the large pits everywhere present, there are other, larger depressions; a deep hollow between orbits is continued backward by a shallow sulcus on the mesogastric region; a deep depression at inner branchial angle; cardiac elevation small and nearly isolated; a deep linear furrow in front of posterior margin; hepatic region small and well defined. The granular ridges between pits are raised at intervals into small, acute tubercles.

Rostrum arcuate in dorsal view, produced downward at the middle in a small, triangular, denticulate tooth which is prolonged backward to the interantennular septum. Orbits small, circular; eye-stalks covered with stellar granules and with a row of three or four spinules on the upper side next the cornea. Subhepatic region laterally produced in a triangular tooth. Antero-lateral margin of branchial region armed with seven or eight small, granulated teeth, each with a median ridge, postero-lateral margin with three shallower, more distant teeth. Antero-internal angle of basal antennal joint barely

Material examined of Thyrolambrus astroides

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	° ′ ″	° ′ ″									
Off Havana, Cuba	23 10 42	82 18 24	67	wh. Co.		Jan. 19, 1885	2334	*Albatross*	2♀	9507	1 is holotype.
Do	23 10 40	82 20 15	189	Co.		do	2338	do	1♂	9515	
Do	23 10 36	82 20 28	146	Co.		Apr. 30, 1884	2161	do	1♀	49018	
Do	Morro Castle bearing SW. by W., about 2½ miles.		110			May 24, 1893		State Univ., Iowa Exped.	1♂	Mus. S. U. I.	
Do	Nearly as above		200			May 26, 1893		do	1♂	do	
Mauritius									1♂	18160	Purchased of Henry A. Ward.

touching front. Endognath with a longitudinal row of three spinules, two on ischium, one on merus. Sternum armed with a downward-pointing spine at base of chelipeds, and in male is deeply hollowed in front of abdomen. Arm very stout in proximal two-thirds, and armed with a few acicular teeth on anterior and upper surfaces; of these, two or three are on the lower-inner and on the upper-inner border. Three teeth on inner margin of carpus. Spines of propodus and dactylus number five or six in lower and six or seven in upper series; they are curved inward and directed distad. Fingers slender, curved inward, tips prolonged in sharp spines; prehensile edges armed with small, sharp, unequal teeth. Legs very rough, margins dentate; dactyli armed with outstanding lobes and spines.

Measurements.—Female, holotype, length of carapace 16, width of same 23.5, length of cheliped about 32 mm. Male (9515), length of carapace 14, width of same 20, length of cheliped about 34 mm.

Range.—Off Havana, Cuba; Mauritius; Andaman Sea. 36 to 200 fathoms.

Material examined.—See table, page 533.

THYROLAMBRUS EROSUS Rathbun

Plate 197; plate 281, fig. 2

Thyrolambrus erosus RATHBUN, Proc. U. S. Nat. Mus., vol. 21, 1898, p. 579, pl. 42, fig. 1 (type-locality, off Cape St. Lucas, 31 fathoms; holotype, Cat. No. 21577, U.S.N.M.).

Diagnosis.—Reticulation of surface nearly smooth. Postero-lateral margins nearly transverse; teeth rounded or lobiform. Chelae armed on the

inner side with two rows of short spines or pointed teeth. Hand short and stout; fingers stout, dactylus much the longer.

Description.—Near *astroides;* carapace longer, outline more pentagonal; lateral and posterior margins, instead of thin and acutely dentate, are thick, the postero-lateral margin nearly transverse and furnished with seven unequal lobes; antero-lateral angle more strongly marked, margin sub-entire; hepatic region more prominent. Reticulating ridges of surface smooth; instead of prominent, acute tubercles at intervals, there are rounded tubercles covered with depressed granules. Antero-internal angle of basal antennal joint not reaching front. A row of six or seven acute tubercles on endognath, the posterior tubercle much the largest. No large spine on sternum at base of cheliped. Protuberances of chelipeds rounded lobes or tubercles, except those of dactylus. Arm shorter and less thigh-shaped than in *astroides;* the largest tubercles are the one near distal end of outer-upper border, and one near proximal end of inner-lower border. Of the tubercles on the manus, the middle one of the upper row is by far the largest. Fingers shorter than in *astroides,* gaping in larger cheliped; dactylus armed with three or four small spines or sharp-pointed tubercles on inner surface. Lower border of propodus armed with six triangular, acute teeth. Legs with surface little rough save on dactylus; marginal prominences either lobes or tubercles except on lower edge of propodus and on dactylus where they are sharp denticles.

Measurements.—Female, holotype, length of carapace 18.4, width of same 25, length of cheliped 27 mm. Male (21577), length of carapace 17.9, width of same 24.7, length of cheliped 39.3 mm.

Range.—West coast of Mexico: Southern part of Gulf of California and off Cape St. Lucas. Depth, 8 to 31 fathoms.

Material examined.—See table, page 535.

Genus SOLENOLAMBRUS Stimpson

Solenolambrus Stimpson, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 132; type, *S. typicus* Stimpson.

Pisolambrus A. Milne Edwards, Crust. Rég. Mex., 1878, p. 157; type, *P. nitidus* A. Milne Edwards.

Carapace pentagonal, more or less broader than long; posterior side of pentagon much the shortest, the other four sides about equal. Margin acute on all sides, forming a slight crest. The upper surface is naked, glossy, strongly convex, and bears four protuberances—one gastric, one cardiac, and two branchial. Gastric and cardiac protuberances more or less triangularly pyramidal; branchial protuberance armed with an acute ridge running obliquely to postero-lateral

Material examined of Thyrolambrus erosus

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	° ′ ″	° ′ ″			°F						
Mexico:											
Gulf of California	21 22 30	110 19 30	8	brk. Sh.		Apr. 30, 1888	2824	*Albatross*	1 ♀	21964	
Do	24 11 30	109 55 00	10	Sh.		do	2828	do	1 ♀	21965	
Off Cape St. Lucas	22 52 00	109 55 00	31	rky.	74.1	May 1, 1888	2829	do	2 ♂ 2 ♀	21577	1 female is holotype.

Material examined of Solenolambrus typicus

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.
	° ′ ″	° ′ ″			°F					
Bahamas: Little Bahama Bank	27 22 00	78 07 30	338	gy. S.	47.5	May 2, 1886	2655	*Albatross*	1 ♂	11381.
Florida:										
Off Fowey			75–100			May —, 1917	361	*Eolis;* J. B. Henderson.	1 ♂	50937.
Ajax Reef			70–90				370	do	1 ♂	50938.
Off Sand Key	Sand Key Light bearing NW. by N., Key West Light, N. ¼ E.		50–60			June 19, 1893	27	State Univ. Iowa Exped.	1 ♂	Mus. S. U. I.
Off Key West	Key West Light bearing NW. by N., Sand Key Light, W. by N.		(1)			June 26, 1893	47	do	1 ♂	18677.
Do			100–125					J. B. Henderson	2 ♂	50388.
Gulf Stream, S. of Key West, near edge of Pourtales Plateau.				co. Fragments				do	1 ♂	48885.
Western Dry Rocks			110					do	1 ovig. ♀	50389.
Cuba:										
Off Santiago de Cuba	19 56 44	75 50 49	202	hrd. crs. S.		Feb. 27, 1884	2131	*Albatross*	1 ♂	7805.
Do	19 55 55	75 48 03	290	wh. S. brk. Sh.		do	2133	do	1 ♂	18438.

[1] About 80 fathoms.

margin of carapace. Frontal region slightly convex, no protuberance on orbital region. Rostrum short and blunt or faintly tridentate. Orbits round, a closed fissure above. Basal joint of external antennae about as long as next joint. Epistome concave. From the antero-external angle of the buccal area a sharp, elevated, crenulated ridge extends to outer base of cheliped, separating concave pterygostomian from subhepatic region, which is also concave and channel-like. When retracted, the extremity of hand of cheliped covers pterygostomian region, forming the afferent passage. External maxillipeds fit accurately the buccal area and closely against each other within; exognath concave, forming part of wall of afferent channel, which is defined within by a slight, elevated ridge on outer side of ischium of endognath; the merus has a prominent antero-external angle, its surface concave toward antero-interior angle; no notch for insertion of palpus, which, except at origin, is concealed behind the other joints of endognath. The chelipeds resemble those of *Parthenope*, except that the fingers are very small and the dactylus is generally at right angles with palm when retracted. Terminal joints of ambulatory legs acuminate. Third, fourth, and fifth joints of male abdomen soldered together.

American coasts, from Gulf of Mexico and the Bahamas to Barbados, and at Panama.

KEY TO THE SPECIES OF THE GENUS SOLENOLAMBRUS

A¹. Some teeth or spines on posterior or postero-lateral margins. Dorsal protuberances angular.

B¹. Not more than four teeth on posterior and postero-lateral margins.

C¹. Tubercles on surfaces of hand between crests. Dactylus oblique to palm. Sternum between chelipeds with several tubercles. **typicus**, p. 537.

C². Surfaces of hand smooth between crests. Dactylus at right angles with palm. Sternum between chelipeds without tubercles. **arcuatus**, p. 538.

B². Six teeth or spines on posterior or postero-lateral margins.

C¹. Six minute teeth on posterior and postero-lateral margins. No median spines. No spine near middle of branchial ridge. **portoricensis**, p. 539.

C². Six spines on posterior and postero-lateral margins. Two median spines. A spine near middle of branchial ridge **decemspinosus**, p. 540.

A². No spines or teeth on posterior or postero-lateral margins. Dorsal protuberances rounded **tenellus**, p. 541.

Analogous species on opposite sides of the continent: *typicus* (Atlantic); *arcuatus* (Pacific).

SOLENOLAMBRUS TYPICUS Stimpson

Plates 192 and 193; plate 279, figs. 1–4

Solenolambrus typicus STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 133 (type-localities, off the Samboes and off Alligator Reef, 80 to 110 fathoms; types not extant).—A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 159; 1879, pl. 28, figs. 4–4*d*.—RATHBUN, Bull. U. S. Fish Comm., vol. 20, for 1900, pt. 2 (1901), p. 81 (part; not specimens from Porto Rico).

Diagnosis.—Not more than four teeth on posterior and postero-lateral margins. Two acute elevations on median line. An obtuse angle at middle of branchial ridge. Three (or two and a half) rows of moderate-sized tubercles on lower surface of palm and two rows on outer surface; margins dentate. Chelipeds two and a half times as long as carapace.

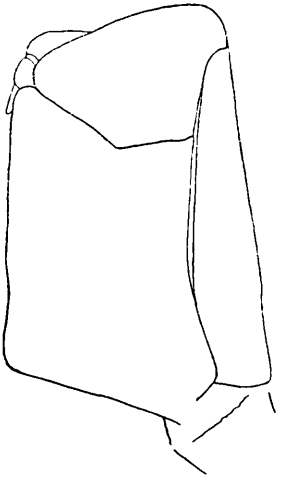

FIG. 148.—SOLENOLAMBRUS TYPICUS (50388), MAXILLIPED, × 17.7

Description.—Carapace one-ninth broader than long. Surface coarsely punctate. Protuberances of gastric and cardiac regions triangularly pyramidal and acute, with the ridges forming the angles crenulated; the posterior ridge in the median line of carapace, the other two diverge from each other in front. Cardiac pyramid symmetrical, each of its triangular sides being equal; gastric protuberance not symmetrical, the posterior ridge being a short, steep slope, the two anterior ridges being long and inclosing a gradual, somewhat convex, slope toward front. Ridge of branchial region also crenulated and bent at middle at an obtuse angle, almost a right angle. In the male each protuberance of carapace is surmounted by an acute spine, while in the female the apical angles are not thus acute. Margin of carapace more or less distinctly crenulated, especially antero-lateral margin, at the outer or posterior end of which are three small and not very well-marked teeth. Antero-lateral margin concave anteriorly, convex posteriorly. Posterior margin straight, lateral angles sharply defined and even dentiform or spiniform. Eyes rather large, with a minute tubercle on anterior side of extremity. Basal joint of external antennae somewhat longer than next joint. Epistome of moderate length. External maxillipeds naked; ischium tuberculated near outer margin and near extremity. Sternum with a few tubercles between bases of chelipeds.

Chelipeds long, naked, except some inconspicuous setae on crest of hand. Merus with denticulated margins and with surface above for the most part smooth and glossy, but with a few tubercles near

margins. Carpus with five denticulated crests, Hand trigonous, with 10 strong teeth on inner crest, 12 to 14 small granulated teeth on outer margin, and 15 teeth increasing regularly in size toward extremity on lower margin; upper surface with 2 rows of tubercles, inner surface with 2 rows, and outer surface with 3 rows; all the tubercles ornamented with from 2 to 5 granules. Fingers very small, between a fourth and a fifth the length of palm; dactylus when flexed almost at right angles with palm. Ambulatory legs compressed, naked, polished, with a laminiform crest above; the merus joints of posterior pair have a crest below, which has a lobe-like expansion at inner extremity. Abdomen tuberculated at sides, that of male tapering slightly.

Measurements.—Male (18677), length of carapace 10.8, width of same 11.6, length of cheliped 26 mm.

Variations.—The two projections at ends of posterior margin vary from very short, inconspicuous teeth to prominent teeth and even spines, according to Stimpson. This is not dependent on sex, as Stimpson thought, or on size; for in the museum collection there are nine male specimens, of which three large ones have shallow teeth, three small ones have well developed teeth, while the strongest teeth occur on three specimens of different sizes, one small, one large and one intermediate. In the single female the teeth are less evident than in any of the males. The chelipeds show different degrees of roughness; the merus may have an almost smooth upper surface with only a line of granules near posterior edge, or the posterior half of that surface may be pretty well covered with granulation. The rougher specimens also show longer marginal teeth on the hand, especially noticeable on the upper crest where the larger teeth may be as long as wide and separated by sinuses which are rounded at base instead of pointed.

Range.—Bahama Banks, southern Florida, Gulf of Mexico, and Caribbean Sea. Depth, 50 to 338 fathoms.

Material examined.—See table, page 535.

SOLENOLAMBRUS ARCUATUS Stimpson

Solenolambrus arcuatus STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 10, 1871, p. 101 [128] (type-locality, Panama; type not extant).

? *Solenolambrus typicus* CANO, Boll. Soc. Nat. Napoli, ser. 1, vol. 3, 1889, p. 187, Panama; not *S. typicus* Stimpson, 1871.

Diagnosis.—Not more than four teeth on posterior and posterolateral margins. Two acute elevations on median line. A large toothlet at middle of branchial ridge. Surfaces of hand smooth between crests; dactylus at right angles with palm. Sternum between chelipeds without tubercles.

Description.—Carapace short and broad, with projecting lateral angles. Surface punctate, much more finely than in *typicus*. Antero-lateral margins long and convex; the two together would form a regular arc were it not for projection of rostrum; each armed with 11 little projecting, tridenticulate, teeth the middle ones broadest. Postero-lateral margin concave, posterior margin short and slightly convex. Protuberances of carapace like those of *typicus*, but stronger; their ridges crenulated; gastric and cardiac protuberances very tall, with strongly projecting apices, which are almost spiniform but not acuminate; ridge of branchial region convex forward and crenulated, with a larger toothlet at middle. Basal article of external antennae shorter than next article. Eyes very small. Afferent and subhepatic channels very deep, the ridge separating them being prominent and very thin and sharp. No supplementary ridge on subhepatic region. External maxillipeds with hairy margins and with a tubercle near inner summit of ischium; antero-external angle of merus less acute and prominent than in *typicus;* merus with three or four strong tubercles on external oblique ridge. Sternum between chelipeds concave, without tubercles. Chelipeds rather short; merus seven-toothed before and behind; carpus with five denticulated crests; hand with nine strong, subspiniform teeth on superior crest, and the same number of tuberculiform teeth on outer and inner edge of lower surface; on the inner edge the teeth are minute toward the base, but are large on outer half of hand; surface of hand between toothed crests smooth; inferior surface, and interstices of teeth of all three crests pubescent; hand expanded in width at distal extremity, and dactylus when retracted exactly at right angles with palm. Legs compressed, glabrous; merus joints with acute, sparsely ciliated superior edge; merus of posterior pair obtuse below, without crest. Abdomen smooth. (Stimpson.)

Measurements.—Female, holotype, length of carapace 10.2, width of same 13.2, length of merus of cheliped 7.9, of hand 9.4 mm.

Range.—Panama (Stimpson, Nobili).

SOLENOLAMBRUS PORTORICENSIS Rathbun

Plate 194, figs. 5 and 6

Solenolambrus typicus RATHBUN, Bull. U. S. Fish Comm., vol. 20, for 1900, pt. 2 (1901), p. 81 (part: specimen from Mayaguez Harbor).

Solenolambrus portoricensis RATHBUN, Proc. U. S. Nat. Mus., vol. 64, art. 14, 1924, p. 5 (type-locality, Mayaguez Harbor, Porto Rico, 75 to 76 fathoms; holotype, male, Cat. No. 24237, U.S.N.M.).

Diagnosis.—Six minute teeth on posterior and postero-lateral margins. No spines on median line. On outer and lower surfaces of palm a row of large granulated tubercles parallel to each margin; outer and inner margins tuberculated; dactylus at right angles with palm. Cheliped two and a third times as long as carapace.

Description.—Similar to *typicus*. Carapace wider, one-sixth wider than long; elevations lower; anterior slope of cardiac elevation granulated, its borders not sharply defined; tooth at end of branchial ridge minute; a still smaller and inconspicuous tooth on postero-lateral margin half way between branchial ridge and posterior margin; median gastric area, or anterior slope of gastric elevation narrower than in *typicus;* margin very finely granulate, no teeth at widest part except one at lateral angle. Chelipeds shorter than in *typicus;* chelae hairy especially on upper margin; merus with upper surface widening less toward distal end, a few tubercles near margins as in *typicus*, marginal crenulated teeth less projecting than in *typicus;* manus armed above with 10 teeth almost hidden in hair, the distal tooth and 2 proximal teeth very small; just below is a row of 10 large granulated tubercles; outer and inner margins tuberculated, the outer margin with 12, the inner with 13 tubercles; next to each margin a row of similar tubercles; immovable finger very short; dactylus vertical. Lower border of merus of last three ambulatory legs irregularly denticulate; a small, denticulated lobe near proximal end in second and third pairs, and a denticulated lamina at middle in third pair. The transverse line of tubercles on the sternum, either side of abdomen, at base of chelipeds is more transverse than in *typicus* and is situated further from the tip of the abdominal cavity; there are no tubercles in the middle of the first sternal segment, as in *typicus*.

Measurements.—Male, holotype, length of carapace 7.3, width of same 8.5, length of cheliped 17 mm.

Type-locality.—Mayaguez Harbor, Porto Rico: Point del Algarrobo, E., 2¾ miles; 75 to 76 fathoms; rky. S. Co.; temp. 68.5° F.; January 20, 1899; station 6063, *Fish Hawk;* 1 male, holotype (24237).

SOLENOLAMBRUS DECEMSPINOSUS Rathbun

Plate 194, figs. 1 and 2

Solenolambrus decemspinosus RATHBUN, Proc. U. S. Nat. Mus., vol. 17, March 30, 1894, advance sheet, p. 2; July, 1894, p. 84 (type-locality, Gulf of Mexico, lat. 28° 44′ N., long. 85°16′ W., 60 fathoms; holotype, Cat. No. 18157, U.S.N.M.).

Diagnosis.—Six spines on posterior and postero-lateral margins. A second spine on branchial ridge. Two tall spines on median line. On outer and lower surfaces of palm a row of large granulated tubercles parallel to each margin; outer and inner margins tuberculated; dactylus nearly at right angles with palm. Cheliped twice as long as carapace.

Description.—Closely allied to *S. typicus*. Antero-lateral margin convex; area between the two anterior gastric ridges narrower than in *S. typicus;* gastric and cardiac prominences terminating in slender

spines. Eight additional dorsal spines—two on each branchial ridge, of which the posterior or marginal is the longer, one at each posterior angle, and one on postero-lateral margin midway between the last and branchial spine. Surface finely punctate. Sternum smooth between bases of chelipeds. Terminal segment of abdomen of male much longer and distally narrower than in *S. typicus*, its sides deeply concave. Merus of the outer maxillipeds narrower and more produced at antero-external angle than in *S. typicus*. Chelipeds similar to those of *S. typicus*. The second, third, and fourth pairs of ambulatory legs more or less cristate below.

Measurements.—Male, holotype, length of carapace 6, width of same 7, length of cheliped 12 mm.

Range.—Gulf of Mexico and Porto Rico. Depth, 45 to 60 fathoms.

Material examined.—

Gulf of Mexico: Off Cape San Blas, Florida; lat. 28° 44′ 00″ N.; long. 85° 16′ 00″ W.; 60 fathoms; gy. S.; March 15, 1885; station 2404, *Albatross;* 1 male, holotype (18157).

Porto Rico: Off entrance to San Juan; Battery on El Boqueron, S. E. ½ E., 7¾ miles; 45 fathoms; S. M.; temp. 77° F.; January 13, 1899; station 6051, *Fish Hawk;* 1 male (24236).

SOLENOLAMBRUS TENELLUS Stimpson

Plate 194, figs. 3 and 4; plate 279, figs. 5–9

Solenolambrus tenellus Stimpson, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 134 (type-localities, off Carysfort, Conch and French Reefs, 35 to 49 fathoms; types not extant).

Pisolambrus nitidus A. Milne Edwards, Crust. Rég. Mex., 1878, p. 158, pl. 30, figs. 4–4*e* (type-locality, Barbados, 100 fathoms; cotypes, Cat. No. 2943, M. C. Z.).

Diagnosis.—No spines or teeth on posterior or postero-lateral margins. Dorsal protuberances rounded. Eyes very large. Margins of arm and hand serrated. Chelipeds three times as long as carapace.

Description.—A small, delicate species. Carapace but little broader than long, and about equally produced in front of and behind the line of the lateral angles. Surface rather coarsely punctate. Protuberances of carapace much less prominent than in *typicus;* those of gastric and cardiac regions obtusely rounded, without angular ridges; ridge of branchial region sufficiently well marked near postero-lateral margin, but almost obsolete anteriorly. Margins of carapace crenulated, the teeth being most distinct on the flattened, expanded, and broadly rounded lateral angle, where they are about six in number, not crenulated, and but little projecting, being defined chiefly by the impressed lines on the marginal limb. Two or three denticulated teeth on hepatic region. Postero-lateral margin slightly concave. Posterior margin convex; its lateral

Material examined of Solenolambrus tenellus

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
Florida:	° ′ ″	° ′ ″									
Off Cape St. George	28 45 00	85 02 00	30	gy. S. brk. Co.		Mar. 15, 1885	2405	*Albatross*	1♂	15169	
Off Key West	Sand Key Light bearing W. NW., Key West Light bearing N.		60			June 19, 1893	24	State Univ. Iowa Exped.	1♂, 1♀	18678	
										Mus. S. U. I.	
Do	Sand Key Light bearing NW. by N., Key West Light, N. ½ E.		50–60			do	27	do	1 ovig. ♀	Mus. S. U. I.	
Off Fowey			100			May, 1917	360	*Eolis*; J. B. Henderson	1 y. ♀	50939	
Bahamas						1886		*Albatross*	1 ovig. ♀	17888	
Barbados:											
Off Barbados	Lazaretto bears SE. by E., ½ mile off shore.		35	rky.		May 24, 1918	42	Univ. Iowa Barbados-Antigua Exped.	1 ovig. ♀	Mus. S. U. I.	
Do			80					U. S. C. S. S. *Hassler*	1 ♂	2071, M.C.Z.	
Do			100			Dec. 27–30, 1871		do	7	2943, M.C.Z.	Cotypes of *Pisolambrus nitidus*.

angles obtuse. Rostrum rather prominent and faintly tridentate at extremity; median tooth smallest and most prominent. External angle of orbit not prominent. Eye large, with a very minute tubercle at summit. Basal joint of external antennae about as long as next joint. Subhepatic region less concave than in *typicus* and without supplementary ridge. External maxillipeds and afferent channels nearly as in *S. typicus*, but with the ridges less strongly tuberculated and the outer angle of merus less acutely prominent. Sternum between bases of chelipeds convex on either side, and nearly smooth. Chelipeds very long and slender; edges denticulated, surfaces smooth and polished; merus with about 13 denticles on either edge, the third denticle from distal end of anterior edge being larger than the others; hand with 11 or 12 sharp, forward-curving teeth on superior edge, the terminal tooth above finger spiniform and considerably longer than the others; outer edge of hand with 11 to 13 obtuse, less prominent, minutely

crenulated teeth; inner edge with 18 to 20 very minute teeth. Legs naked, compressed, without laminiform crests; merus of last pair slightly expanded below near base. Abdomen and sternum of male coarsely pitted, otherwise smooth and glabrous. (After Stimpson.)

Measurements.—Male (18678), length of carapace 5.5, width of same 6.3, length of cheliped 16 mm.

Range.—From Gulf of Mexico (west coast of Florida) to Florida Keys, Bahamas, and Barbados. Depth, 30 to 115 fathoms.

Material examined.—See table, page 542.

Genus LEIOLAMBRUS A. Milne Edwards

Leiolambrus A. Milne Edwards, Crust. Rég. Mex., 1878, p. 148; type, *L. punctatissima* (Owen) [*spinosissima*, by error].

Carapace hexagonal, considerably broader than long, with a strong spine near middle of its lateral margin. Surface depressed, smooth, or nearly so, with three low longitudinal elevations, one median, the others branchial. Front subtruncate, with a minute median point. Orbits with a closed fissure above, a large V-shaped fissure below toward outside, and an inner hiatus in which is lodged the antenna. Basal joint of antenna very small. Antennules folding almost longitudinally. Buccal frame narrowing a little forward, loosely covered by external maxillipeds; these last have an anteriorly tapering ischium, a merus with a semicircular antero-external outline, antero-internal angle rectangularly notched; merus and ischium of the endognath bordered with long hairs which form a ventral covering to the afferent channels of the branchiae; exognath concealed above endognath. Chelipeds very long, sharply trigonal, somewhat subequal; marginal teeth small and numerous. The fingers gape in the larger claw. First pair of ambulatory legs the shortest.

Known only from the two species here described.

KEY TO THE SPECIES OF THE GENUS LEIOLAMBRUS

A¹. Carapace with four strong marginal spines behind....**punctatissimus**, p. 543.
A². Carapace with no strong marginal spines behind.....**nitidus**, p. 545.

Analogous species on opposite sides of the continent: *nitidus* (Atlantic); *punctatissimus* (Pacific).

LEIOLAMBRUS PUNCTATISSIMUS (Owen)

Plate 198

Parthenope punctatissima Owen, Zool. of Beechey's Voy., 1839, p. 81, pl. 24, fig. 4 (type-locality, coast of California; type not extant).—Stimpson, Boston Journ. Nat. Hist., vol. 6, 1857, p. 458 [18].

Parthenope (*Lambrus*) *punctatissima* Lockington, Proc. California Acad. Sci., vol. 7, July 17, 1876 (1877), p. 78 [16].

Leiolambrus spinosissima (by error) A. Milne Edwards, Crust. Rég. Mex., 1878, p. 148.

Leiolambrus punctatissima A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 159.

Leiolambrus punctatissimus HOLMES, Occas. Papers California Acad. Sci., vol. 7, 1900, p. 46.

Diagnosis.—Carapace with four strong marginal spines behind; lateral spine of moderate size. Orbit much narrower than rostrum. Five or six enlarged teeth on anterior margin of arm.

Description.—Carapace smooth, convex, minutely punctate, median gastric and cardiac regions forming a nearly continuous, longitudinal elevation, bounded on either side by a conspicuous, longitudinal depression. Front truncate, but with a small median tooth behind which there is a short, longitudinal groove. Postorbital angle acute. Antero-lateral margins slightly arcuate, and furnished with teeth which become very small toward anterior end. Sides of carapace produced into a prominent, triangular tooth. Two teeth on posterior margin near median line; external to these a pair of larger marginal teeth; margins between teeth of external pair and lateral angles of carapace concave. Posterior and postero-lateral margins marked with a delicate, raised, jagged line; another fine raised line runs upon the branchial region from postero-lateral tooth. Maxillipeds smooth, ischium narrowed distally, antero-internal angle produced forward in a rounded lobe; merus broadly rounded at antero-external angle and produced behind articulation of palp. Chelipeds long, angles denticulated; anterior edge of merus also with several larger denticulated teeth; outer edge of carpus dentate. Immovable finger nearly longitudinal and straight, inner edge dentate; dactyl curved and provided on external portion of base with two converging denticulated ridges which meet not far from tip. Legs smooth, compressed, differing little in length; dactyls lanceolate, flattened in a plane oblique to that of the preceding joints. The transverse elevations of first three segments of abdomen are finely denticulate and are produced at extremities in a tooth. (After Holmes.)

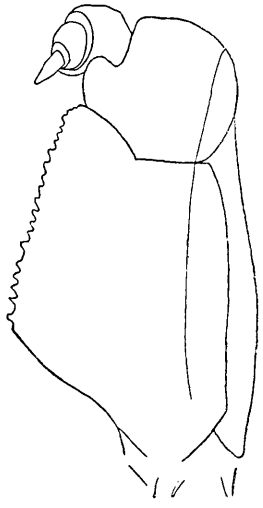

FIG. 149.—LEIOLAMBRUS PUNCTATISSIMUS (17366), MAXILLIPED, × 19.2

Measurements.—Male (18180), median length of carapace 13.2, width 18.7, length of cheliped, below, about 40 mm.

Range.—?California; Gulf of California, Mexico. The records for California are indefinite and may refer to Lower California.

Material examined.—

"California"; 1 ovigerous female (Copenhagen Mus.).

Off Guaymas, Mexico; lat. 27° 45′ 00″ N.; long. 110° 45′ 00″ W.; 20 fathoms; gn. M.; temp. 65.2° F.; March 31, 1889; station 3037, *Albatross;* 11 males, 3 females, 2 young (17366, 18620).

Off La Paz Bay; lat. 24° 18′ 00″ N.; long. 110° 22′ 00″ W.; 26.5 fathoms; brk. Sh.; April 30, 1888; station 2823, *Albatross;* 1 male (18180).

LEIOLAMBRUS NITIDUS Rathbun

Plate 199; plate 281, fig. 1

Leiolambrus nitidus Rathbun, Bull. U. S. Fish Comm., vol. 20, for 1900, pt. 2 (1901), p. 80, text-fig. 12 (type-locality, Mayaguez Harbor, Porto Rico, 12 to 18 fathoms; (holotype, Cat. No. 23776, U.S.N.M.).

Diagnosis.—Carapace without strong marginal spines behind; lateral spine large, involving half of antero-lateral margin. Orbit nearly as wide as rostrum. Three enlarged and distant spines on anterior margin.

Description.—Carapace about three-fifths as long as broad, antero-lateral and postero-lateral margins subequal; surface coarsely punctate in elevated regions, smooth in depressions, a little granulous along summit of branchial, cardiac, and posterior part of mesogastric. Margin of front feebly tridentate, not advanced beyond antennular fossettes. Orbits wider than long and completely filled with large eyes. Antero-lateral margin obscurely toothed, the teeth having denticulate margins. Lateral spine strong, acuminate, directed either outward or somewhat backward, and slightly upward. A small tubercle, sometimes pointed, on postero-lateral margin at end of branchial ridge. Extremities of posterior margin either angular or marked with a small tooth. Inner lobe of orbital floor produced nearly to line of front. Chelipeds narrow, lower surface smooth, upper surface with a scant marginal fringe of hair. Arm with upper surface convex and scabrous, anterior margin armed with many small denticulated teeth, of which three or four are noticeably larger and sometimes spiniform; posterior margin evenly denticulate and terminating in a spine. Outer margin of wrist denticulate, inner margin granulate, a longitudinal line of granules through middle of upper surface. Hand with denticulate inner and outer margins, with granules along outer margin of upper surface. Thumb not bent down or in, prehensile edge with three or four large teeth. Movable finger spinulous on upper surface; a spine at terminal third directed distally; prehensile edge finely toothed. Fingers of larger claw with a small gape. Last three pairs of ambulatory legs reaching beyond end of arm; first pair barely reaching dactylus of second. Legs almost smooth; lower margins of meral joints very finely denticulate. The

Material examined of Leiolambrus nitidus

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	° ′ ″	° ′ ″			° C						
Jamaica: Montego Bay			40			Aug. 4, 1910		C. B. Wilson	1♂ 1♀	49228	
Porto Rico: San Juan Harbor	NW. angle Morro Castle, ⅜ mile.		4.5–5.5	S. M.	25.2	Jan. 16, 1899	6054	*Fish Hawk*	1♂ 2♀	21229	
Mayaguez Harbor	Customhouse, S. 1½ miles.	E. by	7.25	stky. M.	26	Jan. 19, 1899	6058	do	1♂	21228	
Do	Customhouse, S., 2 miles.	E. by	7	stky. M.	27	do	6059	do	2♂	21231	
Do	Customhouse, S. ¼ S., 2¼ miles.	E. by	12	stky. M.	27	do	6060	do	2♂ 1♀	21230	
Do	Black buoy entrance, N. by W. ½ W., ½ mile.		12–18	S. M.	26	Jan. 20, 1899	6061	do	3♂ 5♀	23776	1 ♂ is holotype.
Do						do		do	1♂ 1♀	21232	
Porto Rico						1899		do	1♂	21233	

third, fourth, and fifth abdominal segments in the male fused; all separate in the female.

Measurements.—Male, holotype, length of carapace 6.4, width of same 10.3, length of cheliped about 20 mm.

Range.—Jamaica; Porto Rico.

Material examined.—See table, page 546.

Genus MESORHOEA Stimpson

Mesorhoca STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 135; type, *M. sexspinosa* Stimpson [by error, *sexpinosa*].

Resembles *Solenolambrus* in form and armature of carapace, character of feet and of pterygostomian and hepatic channels, except that the latter are deeper. Differs, however, in the efferent channels meeting at the middle of the endostome, which has there a triangular projection, and a deep notch in its vertical, laminiform wall. Merus of external maxillipeds acutely produced forward at internal angle and behind it the palpus is entirely concealed. Epistome very short. Eyes small and capable of retraction into their deep sockets so as to be almost completely hidden. Basal article of external antennae somewhat shorter than next article. (After Stimpson.)

Contains only the two following species.

KEY TO THE SPECIES OF THE GENUS MESORHOEA

A¹. Movable finger vertical, without smooth bead granule. Branchial ridge nearly straight ..... sexspinosa, p. 547.

A². Movable finger oblique, with smooth bead granule on outer surface. Branchial ridge curved ..... bellii, p. 548.

Analogous species on opposite sides of the continent: *sexspinosa* (Atlantic); *bellii* (Pacific).

MESORHOEA SEXSPINOSA Stimpson

Plate 200

Mesorhoea sexpinosa STIMPSON, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 136 (type-locality, 4 miles southwest of Loggerhead Key, 11 fathoms; type not extant).

Solenolambrus fastigatus A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 163, pl. 29, figs. 5–5*e* (type-locality, Mexico (Gulf of Mexico on plate); type in Paris Mus.).—A. MILNE EDWARDS and BOUVIER, Mem. Mus. Comp. Zoöl., vol. 47, 1923, p. 357.

Mesorhoea sexspinosa A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 164.

Solenolambrus typicus RATHBUN, Bull. U. S. Fish Comm., vol. 20, for 1900, pt. 2 (1901), p. 81 (part: specimen from Punta de Melones).

Diagnosis.—Carapace one-fifth or one-fourth broader than long. Branchial ridge nearly straight. Cardiac spine the most slender. Movable finger vertical, without smooth bead granule. Outer angle of wrist laminate.

Description.—Carapace about equally produced in front and behind, beyond the line of the lateral angles. Surface punctate and inconspicuously pubescent. Protuberances of gastric, cardiac and branchial regions strongly angular, each surmounted by a three-sided spine, the branchial spine being situated on the postero-lateral margin, of which it forms a projection. Angles or ridges more or less crenulated. Lateral edges of gastric protuberance continued forward nearly to front, becoming parallel shortly after diverging from the spine. Cardiac spine more slender than the others, its posterior edge nearly vertical. Branchial ridge nearly straight. Between protuberances and ridges the surface is more or less regularly concave, the sides of the protuberances not being swollen. Rostrum short. Margins of carapace sublaminiform and almost entire, the normal crenulation being indicated only by faint impressed lines; microscopic notches may, however, be detected on antero-lateral margin which is slightly convex toward lateral angle. Postero-lateral margin concave. Posterior margin about half as long as postero-lateral, convex at middle, terminating on either side in a slight tooth. Afferent channels deep, separated from the subhepatic channels by a very thin and sharp, prominent, ciliated lamina, and defined on the inner side by the ciliated outer edge of ischium of outer maxillipeds. From anterior angle of buccal area a

short ridge extends to middle of inner tooth of orbit, which ridge separates the concavity of epistome from that of subhepatic region. Merus [58] of maxillipeds with two tubercles, one towards postero-exterior angle, the other close to antero-exterior angle; anterior margin of joint deeply concave or notched.

Chelipeds short, pubescent, especially on the toothed edges; surface between edges smooth; on basal joint below there is a strong, triangular, pyramidal spine nearly as large as dorsal spines of carapace; margins of merus crenulated with six or seven small teeth on either edge; carpus flattened above, with two strong, crenulated crests, the outer one of which bears a larger spiniform tooth at middle; hand with an elevated 9-toothed superior crest and 11-toothed outer margin; fingers very small; dactylus at right angles with palm. Legs much compressed; carpus and propodus with a laminiform crest above; merus and propodus of posterior pair with slight crest below. Abdomen of female glabrous. (Stimpson.)

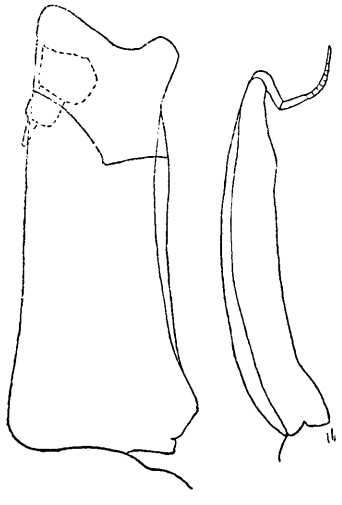

FIG. 150.—MESORHOEA SEXSPINOSA (50456), MAXILLIPED, × 33.8

Measurements.—Female, holotype, length of carapace 8.1, width of same 9.9, length of hand 7.1 mm. Male (49202), length of carapace 6.6, width of same 8.6, length of hand 6.5 mm.

Variation.—This species shows a variation similar to that in *Solenolambrus typicus;* the extremities of the posterior margin may have a distinct tooth as in the young female, or only a slight indication of one as in the larger specimens; the protuberances of the carapace have more slender tips in the young specimen than in the adults.

Range.—West coast of Florida and Florida Keys; Gulf of Mexico (A. Milne Edwards); Porto Rico; Flannegan Passage. Depth, 4¼ to 27 fathoms.

Material examined.—See table, page 549.

MESORHOEA BELLII (A. Milne Edwards)

Plate 201; plate 280, figs. 1–4

Solenolambrus bellii A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 163, pl. 29, figs. 6–6*d* (type-locality, Mexico; type in Paris Mus.).

Mesorhoea gilli RATHBUN, Proc. U. S. Nat. Mus., vol. 16, 1893, p. 235 (type-locality, Gulf of California, 20 to 71 fathoms; holotype, Cat. No. 17370, U.S.N.M.).

[58] Incorrectly represented in Crust. Rég. Mex., pl. 29, fig. 5*a*.

Material examined of Mesorhoea sexspinosa

Locality	Bearings		Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	Latitude N.	Longitude W.									
	° ′ ″	° ′ ″									
Florida: Gulf of Mexico, off Pensacola.	Pensacola Light, N. NW. 7/8 N., 9 3/8 miles.		12	S.	° F 59.7	Jan. 18, 1913	28	*Fish Hawk*	1 ovig. ♀	50456	
North Key Section	29 02 30	83 14 00	4–25	sdy.	° C 14.8	Nov. 28, 1901	7181	do	1♂	49202	"Paratypes" of *S. fastigus.*
Dry Tortugas			16					J. B. Henderson	1♀	49227	
Inside Sombrero			13					*Bache*; Wm. Stimpson.	2	3045, M.C.Z.	
West Indies: Porto Rico	Off Point Molines; Atabaya Rock, N. 1/4 E., 17.5 miles; Point Guaniquilla, S. by E. 3/4 E., 1 1/8 miles.		8		27	Jan. 25, 1899	6073	*Fish Hawk*	1 y. ♀	24238	
Flannegan Passage			27	S. brk. Sh.	° F 77.75	1878–1879	142	*Blake*	1	2762, M.C.Z.	"*S. fastigatus.*"

Diagnosis.—Carapace one-third broader than long. Branchial ridge strongly curved. Branchial spine the most slender. Movable finger oblique, with a large, smooth bead tubercle on outside of base.

Description.—Surface minutely pubescent. Cardiac, gastric, and branchial elevations angular, each prolonged in a three-sided spine, the branchial spine smallest and situated on postero-lateral margin; angles or ridges crenulate or tuberculate; two ridges gradually diverge from gastric spine and are continued nearly to front; cardiac spine longest, laterally compressed; branchial ridge curved, subparallel to antero-lateral margin, and having a larger tubercle at the center; in front of branchial ridge a few scattered tubercles; one or two tubercles on hepatic region. Surface concave behind branchial ridge. Rostrum short, pubescent. Antero-lateral margin convex, distinctly crenulate; postero-lateral and posterior margins entire, thin, faint impressed lines indicating normal crenulation; postero-lateral margin concave, about twice as long as posterior margin, which is slightly convex in the middle and terminates in a triangular flattened spine

at either angle. Ridge between subhepatic and afferent channels minutely crenulate, pubescent, continued on subbranchial region with several beadlike tubercles; suborbital tooth strongly ridged.

First segment of male abdomen very short; second widest, with a transverse denticulate crest, a larger denticle at extremities and middle; third, fourth, and fifth segments fused; sixth wider than long; seventh very short, triangular; abdomen and sternum smooth. Seven separate segments in female abdomen, first almost concealed by carapace, second having a transverse denticulate crest, third with a similar faint crest not continued to margins. Basal antennal joint with a long trigonal spine below. Ischium of maxillipeds punctate, outer margin pubescent, inner margin crenulate; merus with anterior margin concave, surface pubescent, uneven, an oblique groove running forward and outward, two tubercles on outer side of groove, one at antero-external angle; inner angle strongly produced, bearing a granulate ridge.

Chelipeds over twice as long as carapace, strong; merus trigonal, margins irregularly dentate or crenulate; carpus somewhat four-sided, margins finely denticulate or crenulate, a ridge across lower surface; hand long, trigonal, pubescent, upper surface slightly twisted, about 10 teeth on inner and on lower margin and 13 smaller teeth on outer margin; dactyl at right angles to upper surface of palm, a large white bead tubercle on outside of base. Legs compressed; merus, carpus, and propodus with cristate margins.

Measurements.—Female (17370), length of carapace 15.5, width of same 21, length of cheliped about 33 mm.

Range.—Lower California, outer side, from Abreojos Point southward; Gulf of California; Panama Bay. Depth, 9½ to 71 fathoms.

Material examined.—See table, page 551.

Genus AETHRA Leach

Æthra Leach, in Latreille, Nouv. Dict. Hist. Nat., vol. 4, 1816, p. 602; type, *A. scruposa* (Linnaeus).

Œthra Lamarck, Hist. Nat. Anim. sans Vert., vol. 5, 1818, p. 264.—Milne Edwards, Hist. Nat. Crust., vol. 1, 1834, p. 370.

Carapace oval and embossed, circumference dentate, a little raised and expanded so as to cover the ambulatory legs. Eyes very small, orbits circular. Basal article of antennae elongate, joined to the front by its inner angle; flagellum small, situated in the orbital hiatus. Basal article of antennules wide and almost quadrilateral. Buccal cavity narrowing anteriorly, epistome short. Outer maxillipeds very long; merus truncate anteriorly and outside, and without emargination for the insertion of the palpus. The legs can be entirely concealed under the carapace; they are compressed and have cristiform ridges. Abdomen of male composed of five segments, female of seven segments.

Material examined of Mesorhoea bellii

Locality	Bearings: Latitude N.			Bearings: Longitude W.			Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
	°	′	″	°	′	″			°F						
Mexico:															
Gulf of California	31	06	45	114	28	15	33	bn. M	63.8	Mar. 27, 1889	3031	*Albatross*	1 ♀	17370	Holotype of *M. gilli.*
Do	28	07	00	111	39	45	71	fne. gy. S. / brk. Sh	57.9	Mar. 23, 1889	3011	do	1 ♀	17368	
Do	27	45	00	110	45	00	20	gn. M	65.2	Mar. 31, 1889	3037	do	1 ♂ / 1 ♀	17376	M. C. Z.
Do	24	18	00	110	22	00	26.5	brk. Sh		Apr. 30, 1888	2823	do	1 y. ♂	25038	
Do	24	16	00	110	22	00	21	gy. S. brk. Sh		do	2822	do	2 ♂ 1 ♀	17367	
Do	24	11 30 to 24	12 00	109	55	00	9.5–10	Sh		do	2826–2828	do	2 ♂	21970	
Off Abreojos Point, Lower California.	26	14	00	113	13	00	48	yl. M	53.9	May 3, 1888	2834	do	9 ♂ 6 ♀	21972	
Magdalena Bay, Lower California.	24	32	00	111	59	00	12	fne. gy. S		May 2, 1888	2831	do	1 ♂	21971	
Panama: Panama Bay	7	56	00	79	41	30	51.5	gn. M		Mar. 30, 1888	2805	do	1 ♂	21969	

Material examined of Cryptopodia concava

Locality	Bearings: Latitude N.			Bearings: Longitude W.			Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.
	°	′	″	°	′	″			°F / °C					
Florida:														
South of Cape San Blas	28	45	00	85	02	00	30	gy. S. brk. Co		Mar. 15, 1885	2405	*Albatross*	1 ♀	15184.
Off Charlotte Harbor	27	04	00	83	21	15	26	crs. gy. S. brk Sh		Mar. 18, 1885	2409	do	1 ♂	15185.
Do	26	30	00	83	19	00	27.5	gy. S. brk. Sh	67.5	Mar. 23, 1889	5115	*Grampus*	1 ♀	15219.
Off Cape Romano	26	06	00	83	11	00	30	hrd. S. Sh. M	70 / 20	Mar. 18, 1889	5101	do	1 ♂	15218.
Do	25	50	15	82	41	45	21	sdy	20	Apr. 2, 1901	7124	*Fish Hawk*	1 ♂	25600.
Dry Tortugas							16					J. B. Henderson	1 ♀	49201.
Do							4					do	1 ♀	49226.
Off Key West	Sand Key Light, W. ½ N., about 6½ miles.						20			June 24, 1893	39	State Univ. Iowa Exped.	1 ♀	Mus. S. U. I.
Bahamas: Bahama Banks										June 18, 1893			1 ♀	Do.
West Indies: Off St. Thomas	Sail Rock, NW. ½W., 4 miles.						20	Co	25	Feb. 6, 1899		*Fish Hawk*	1 ♀	24239.

Contains only one species, *A. scruposa*, ranging from the Indo-Pacific to the west coast of Mexico.

AETHRA SCRUPOSA SCUTATA Smith

Plate 195

Æthra scutata SMITH, Amer. Journ. Sci., ser. 2, vol. 48, 1869, p. 120 (type-locality, La Paz; holotype in Yale Univ. Mus.).

Œthra scruposa, var. *scutata* A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 170, pl. 31, figs. 2–2*e*.

Cryptopodia fornicata AURIVILLIUS, K. Svenska Vet.-Akad. Handl., vol. 23, 1888 (1889), p. 60. Not *C. fornicata* (Fabricius, 1793).

Diagnosis.—Carapace elliptical, lateral borders expanded so as to conceal the legs and cut by long, closed fissures into shallow teeth. Angles of chelipeds and legs projecting into dentate crests.

Description.—Carapace transversely and regularly elliptical; margins thin, slightly dentate, denticles separated by broad and very shallow sinuses; posterior margin nearly straight in the middle; anterior margin straight and parallel to posterior margin for a short space outside eyes; front projecting horizontally, its margin forming a semicircle; gastric region elevated, with a broad median depression extending to the front; anterior lobe of branchial region large and prominent, the broad space between branchial region and antero-lateral margin concave; summits of elevations and a space along the posterior border tuberculous, rest of upper surface smooth; inferior lateral regions slightly convex and smooth. Chelipeds fitting close to carapace; angles projecting into dentate crests; outer and inferior surface of hand coarsely granulous. Legs short; angles projecting into thin, dentate crests. Sternum and abdomen deeply vermiculated. (Smith.)

Measurements.—Male, holotype, length of carapace 35.3, width of same 56.6 mm. (Smith.) Female, Mazatlan, length of carapace 60, width of same 90, length of hand 45 mm. (A. Milne Edwards.)

Range.—Mexico: La Paz, Lower California (Gulf of California), type-locality; Mazatlan (A. Milne Edwards, Aurivillius).

Remarks.—According to A. Milne Edwards (*loc. cit.*) this American form is only a variety of the Indo-Pacific *A. scruposa* (Linnaeus), differing from it in having the carapace less uneven and less rugose, and the ornamentation and fissures of the lateral borders more distinct. Typical *scruposa* is found in the Indian Ocean, Malay Archipelago, New Caledonia and Fiji Islands.[59]

[59] For synonymy and description, see Alcock, Journ. Asiat. Soc. Bengal, vol. 64, 1895, p. 285.

Genus CRYPTOPODIA Milne Edwards

Cryptopodia Milne Edwards, Hist. Nat. Crust., vol. 1, 1834, p. 360; type, *C. fornicata* (Fabricius).

Carapace very broadly triangular, with very large lateral clypeiform vaulted expansions which conceal the ambulatory legs and are prolonged posteriorly far beyond base of abdomen. A ridge extends from gastric region across branchial region to the postero-lateral margin. Rostrum nearly horizontal, spatuliform and very prominent. Pterygostomian regions smooth, not ridged. Orbits very small, nearly circular, with a suture in superior margin. Epistome well developed; antennulary fossae narrow and somewhat oblique. Eyes very small and retractile. Basal antennal joint slightly dilated, not nearly reaching internal orbital hiatus, which is filled by the second joint. Buccal cavity and external maxillipeds small. Merus of maxillipeds distally truncated, antero-external angle produced. Chelipeds allied to those of *Parthenope*. Ambulatory legs with the fourth, fifth, and six joints more or less cristate. (After Alcock.)

Range.—Gulf of Mexico to West Indies; Lower California; Indo-Pacific region.

KEY TO THE AMERICAN SPECIES OF THE GENUS CRYPTOPODIA

A¹. Carapace 1.2 to 1.33 times as broad as long. Rostrum much broader than long ..... concava, p. 553.

A². Carapace 1.6 times as broad as long. Rostrum a little broader than long. hassleri, p. 554.

Analogous species on opposite sides of the continent: *concava* (Atlantic); *hassleri* (Pacific).

CRYPTOPODIA CONCAVA Stimpson

Plate 202, figs. 3 and 4; plate 282, figs. 6–11

Cryptopodia concava Stimpson, Bull. Mus. Comp. Zoöl., vol. 2, 1871, p. 137 (type-locality, off Conch Reef, 34 fathoms, type not extant).—A. Milne Edwards, Crust. Rég. Méx., 1878, p. 168, pl. 29, figs. 1–1c and 2–2c.

Diagnosis.—Carapace from 1.2 to 1.33 times as broad as long. Rostrum distinctly broader than long. Branchial ridges convex forward.

Description.—Carapace a little broader than long; antero-lateral margins twice as long as postero-lateral and meeting them at an obtuse angle; postero-lateral margins converging posteriorly very slightly, posterior margin straight in female, very slightly emarginate in male. Gastro-branchial ridges granulate; margin cut into small truncate teeth separated by closed fissures and with denticulate margins. The lateral expansions do not quite cover the feet when extended. Surface smooth and shining. Front triangular and flat-

tened. Merus of maxillipeds triangular, its internal angle truncate. Upper surface of arm and hand of cheliped dilated toward middle; margins with a few obscure teeth, also denticulate. Crests of legs denticulate. Sternum very concave in front; a deep hollow fits terminal segment of abdomen; on each side of this hollow is a strong dentate crest prolonged to basal article of cheliped.

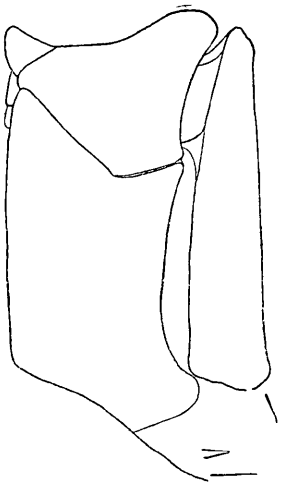

FIG. 151.—CRYPTOPODIA CONCAVA (49226), MAXILLIPED, × 28

Measurements.—Male (15185), length of carapace 6.3, width of same 7.6 mm. Female (49201), length of carapace 9, width of same 12 mm.

Range.—West coast of Florida to Bahama Banks and St. Thomas, West Indies. Depth, 4 to 34 fathoms.

Material examined.—See table, page 551.

CRYPTOPODIA HASSLERI, new species

Plate 202, figs. 1 and 2

Type-locality.—Magdalena Bay, Lower California, Mexico; *Hassler;* holotype, male (Cat. No. 2074, M. C. Z.).

Diagnosis.—Carapace much broader than long. Length and breadth of rostrum subequal. Closed fissures between marginal teeth extending well up on the carapace.

Description.—Closely allied to *C. concava,* from which it is distinguished by its greater breadth (1.6 times its length), narrower rostrum, rounder postero-lateral angles, greater extent of the closed fissures between the marginal teeth.

Measurements.—Male, holotype, length of carapace 6.3, width 10.2 mm.

Range.—Known from type-locality only.

Material examined.—The unique type.

Genus HETEROCRYPTA Stimpson

Heterocrypta STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 10, 1871, p. 102 [129]; type, *H. granulata* (Gibbes).

Differs from *Cryptopodia* in having posterior border of carapace slightly overlapping abdomen but not distinctly produced; lateral clypeiform expansions less produced than in *Cryptopodia,* so that the legs when even moderately extended can be seen beyond them; pterygostomian and subhepatic regions traversed by a granular ridge which runs parallel to antero-lateral border from angle of buccal cavity to base of chelipeds.

Range.—California to Panama; southern New England to West Indies; eastern Atlantic; Mediterranean; Red Sea; India; Japan.

KEY TO THE AMERICAN SPECIES OF THE GENUS HETEROCRYPTA

A¹. Branchial ridge terminating at a point inside lateral angle of carapace.
B¹. Postero-lateral margin straight or nearly so between terminus of branchial ridge and lateral angle of carapace----------granulata, p. 555.
B². Postero-lateral margin concave between terminus of branchial ridge and lateral angle of carapace.
C¹. Carapace wide, at least one and one-fourth times as wide as long. macrobrachia, p. 558.
C². Carapace narrower, one and one-eighth times as wide as long. lapidea, p. 559.
A². Branchial ridge terminating at lateral angle of carapace. occidentalis, p. 559.

Analogous species on opposite sides of the continent: *lapidea* (Atlantic); *macrobrachia* (Pacific).

HETEROCRYPTA GRANULATA (Gibbes)

PENTAGON CRAB

Plate 203, figs. 1 and 2; plate 282, figs. 1–3

Cryptopodia granulata GIBBES, in George White, Statistics Georgia, Savannah, 1849, p. 21 (*nomen nudum*); Proc. Amer. Assoc. Adv. Sci., vol. 3, 1850, p. 173 [9] (type-localities, near Kiawah Island, Sullivans Island, and White Point Shoal, Charleston Harbor, South Carolina; a type-specimen from Sullivans Island and another from Charleston Harbor, 1850, are in the University of South Carolina at Columbia); Proc. Elliott Soc., vol. 1, 1856, p. 35, wood-cut.

Heterocrypta granulata STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 10, 1871, p. 102.—A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 166, pl. 29, figs. 4–4*c*.

Diagnosis.—Carapace nearly one and one-half times as wide as long, margins crenulate. Postero-lateral margin between branchial ridge and lateral angle straight. Branchial ridges united by gastric ridge.

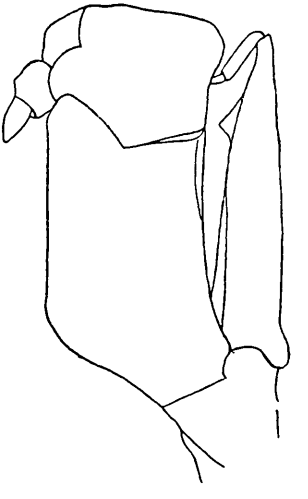

FIG. 152.—HETEROCRYPTA GRANULATA (8485), MAXILLIPED, × 14.6

Description.—Carapace very wide, length two-thirds the width; the branchial ridge runs almost parallel to antero-lateral margin, except on gastric region, where it is transverse; from either end of this transverse portion a longitudinal crest runs forward to upper margin of orbit. A large domelike elevation on cardiac region, granulated at summit. General surface smooth and punctate; margins crenulate. Portion of margin between antero-lateral margin and the branchial ridge straight. The posterior margin forms with the preceding an angle scarcely perceptible except in a rear view. Rostrum broad, blunt, and deflexed, margins rounded. Lower surface is granulous. Merus of

Material examined of Heterocrypta granulata

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
Massachusetts:	° ′ ″	° ′ ″			°F						
Near Succonesset Lightship.			8-10			1871		A. Hyatt, U. S. Fish Comm.	1♂ 2♀	40035	
Nantucket Sound	Bishop & Clerks Lightship, E. ½ N.; Succonesset Lightship, W. ¼ N.		15.5	S. Sh. R.	69.5	Sept. 5, 1887	1243	*Fish Hawk*	1 y	12689	
Off Falmouth						Sept. 3, 1892		do	1♂	26114	
Woods Hole								S. F. Baird	2♂ 1♀	2509	
Do						Oct. 18, 1881		V. N. Edwards	1♂	5159	
Do								J. E. Benedict	2♂	18425	
Vineyard Sound			3-5			1884		U. S. Fish Comm.	1♂	8485	
Virginia:											
Hampton Roads			11-12			Apr. 8, 1887	(1)	*Albatross*	2♂	12454	
Virginia								J. S. Kingsley collection.	1♂	53037	From Boston Soc. Nat. Hist.
North Carolina:											
Off Harkers Island, near Beaufort.								*Fish Hawk*	1♀	51093	
Bogue Sound							Several	do	9	51055	
Do						July, 1912		W. P. Hay	2♀	51391	
Off New River Inlet	New River Inlet, N. by W. ½ W. 34 29 15 77 17 30		6	M. S. Sh. wh. P.	71	Oct. 18, 1913	7999	*Fish Hawk*	2	51104	
South Carolina: Calibogue Sound.						1891	(2)	do	5♂	18200	
Florida:											
Pensacola					°C			J. E. Kauser	1♂	17918	
Deadmans Bay section	29 24 30	83 49 30	10	R. Co.	17	Dec. 6, 1901	7202	*Fish Hawk*	1♀	49203	
Pepperfish Key section	29 23 00	83 27 05	3.5	S. G.	16.3	Nov. 21, 1901	7159	do	1♀	49204	
Cedar Keys			2					H. Hemphill	1♂ 2♀	17887	
Highland section	27 55 30	82 51 30	3	brd. S. brk. Sh.	15.8	Jan. 28, 1902	7249	*Fish Hawk*	1♂	49205	
Sarasota Bay								J. S. Kingsley collection.	1♀	53036	From Boston Soc. Nat. Hist.
Punta Rassa			2					H. Hemphill	5♂ 3♀	17886	
Marco								do	2♂ 2♀	17885	

4 miles east of Cape Romano.			3			Apr. 18, 1887		J. F. Moser	1♂	13061
Smith Shoal, north of Key West.			4–5					J. B. Henderson	1♂ 4♀	50386
Off Sand Key			75					do	1♀	50385
West Indies:										
Jamaica						Mar. 1–11, 1884		*Albatross*	1♀	18566
Port Royal, Jamaica								P. W. Jarvis	1♂	19069
Mayaguez, Porto Rico						Jan. 20, 1899		*Fish Hawk*	1♂	24240

[1] Station 2736 or 2737.

[2] Stations 1645, 1649, and 1651.

Material examined of Heterocrypta macrobrachia

Locality	Bearings		Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.
	Latitude N.	Longitude W.								
	° ′ ″	° ′ ″			° F					
Magdalena Bay, Lower California.	24 38 00	112 17 30	51	gn. M	56.4	May 2, 1888	2832	*Albatross*	1♂ 1♀	21974.
Do	24 35 20 Sail Rock, Entrada Point, S. 53° W.; Redondo Point, S. 15° W.	111 59 35	13.5	S. brk. Sh		Mar. 21, 1911	5678	do	1 y	55762.
Do	24 32 00	111 59 00	12	fne. gy. S		May 2, 1888	2831	do	1♂	21973.

outer maxillipeds notched at inner angle. Chelipeds unequal, rather short and heavy. Upper surfaces of arm and hand dilated toward middle; margins irregularly denticulate. Fingers of larger cheliped gape, those of smaller do not. Merus of last pair of feet barely visible in a dorsal view. Third, fourth, and fifth segments of abdomen of male are fused; sixth segment has a sharp posterior, appressed spine, the tip of which lies between two tubercles on fifth segment.

Measurements.—Female (8485), length of carapace 14.5, width 21 mm.

Habitat.—Dredged on shingly bottom. Bears a striking resemblance to a freshly broken chip or flake of stone, the sharply defined edges of which are wonderfully imitated by the crab, even the claws assisting, so much so as often to deceive the collector even when he is on the alert, for he mistakes it for a small piece of broken pebble. (P. W. Jarvis.)

Range.—From Nantucket Sound, Massachusetts, to Georgia; Gulf coast of Florida and West Indies as far as St. Thomas (A. Milne Edwards).

Material examined.—See table, pages 556–557.

HETEROCRYPTA MACROBRACHIA Stimpson

Plate 203, figs. 3 and 4; plate 282, figs. 4 and 5

Heterocrypta macrobrachia STIMPSON, Ann. Lyc. Nat. Hist. New York, vol. 10, 1871, p. 103 [130] (type-locality, Panama; type not extant).—A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 167, pl. 29, figs. 3–3*b*.

Diagnosis.—Carapace one and one-fourth times as wide as long, margins dentate. Postero-lateral margin between branchial ridge and lateral angle deeply concave. Branchial ridges continued on gastric region and terminating in two high, adjacent, gastric tubercles.

Description.—Carapace narrower and less triangular than that of *H. granulata*, but resembling it in its granulated ridges and protuberances. Antero-lateral margin regularly convex and crenulated with 14 or 15 teeth which are themselves denticulated. Margin between lateral angle of carapace and projecting terminus of branchial ridge deeply concave. Posterior margins crenulated like the anterior, with a somewhat larger tooth on each side at junction of posterior with postero-lateral margins. Chelipeds very long, naked and smooth except at crenulated edges. Legs compressed, carinated; merus joints with sharp, minutely denticulated lower edge. A blunt downward-pointing spine on sixth segment of male abdomen.

Color.—Yellowish; sometimes with bluish-gray patches on the carapace and bands of the same color across the chelipeds. (Stimpson.)

Measurements.—Male (21973), length of carapace 14.2, width of same 18.2, length of cheliped 37.6 mm.

Range.—From Magdalena Bay, Lower California, Mexico, to Panama. Depth, 12 to 51 fathoms.

Material examined.—See table, page 557.

HETEROCRYPTA LAPIDEA Rathbun

Heterocrypta lapidea RATHBUN, Bull. U. S. Fish Comm., vol. 20, for 1900, pt. 2 (1901), p. 83, text-fig. 13 (type-locality, St. Thomas; holotype, Cat. No. 20324, U.S.N.M.).

Diagnosis.—Carapace one and one-eighth times as wide as long, margins dentate or lobate. Postero-lateral margin between branchial ridge and lateral angle concave. Two tubercles on connecting gastric ridge distant.

Description.—Carapace much narrower than in *H. granulata;* some of the granules of branchial ridges are thrown up in tubercles, one at gastric terminus of either ridge; a well-defined angle at other end of branchial ridge; margin concave between this angle and end of antero-lateral margin. A median furrow across front and anterior gastric region. Front longer, chelipeds longer and narrower than in *H. granulata;* margins of arm subparallel; dentation of margins stronger than that of *H. granulata.*

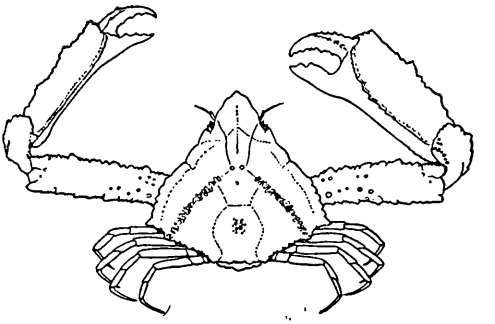

FIG. 153.—HETEROCRYPTA LAPIDEA, FEMALE (20324), CARAPACE 5.9 MM. LONG, DORSAL VIEW. (AFTER RATHBUN)

Measurements.—Female, holotype, length of carapace 5.9, width of same 6.6, length of outer margin of arm and hand each 4 mm.

Range.—Porto Rico and St. Thomas.

Material examined.—

Mayaguez, Porto Rico; January 20, 1899; *Fish Hawk;* 1 young (24227).

St. Thomas; *Albatross;* 1 female, holotype (20324).

HETEROCRYPTA OCCIDENTALIS (Dana)

Plates 204 and 205

Cryptopodia occidentalis DANA, Amer. Journ. Sci., ser. 2, vol. 18, 1854, p. 430, woodcut (type-locality, Monterey; type probably in Yale University Museum.[60] —STIMPSON, Boston Journ. Nat. Hist., vol. 4, 1857, p. 458.—A. MILNE EDWARDS, Crust. Rég. Mex., 1878, p. 169.

[60] It is not possible at this time to verify the existence of the type, as it is perhaps among large collections now in storage.

Lambrus frons-acutis LOCKINGTON, Proc. California Acad. Sci., vol. 7, Feb. 7, 1876 (1877), p. 31 [4] (type-locality, Santa Catalina; type destroyed in San Francisco fire); Proc. California Acad. Sci., vol. 7, July 17, 1876 (1877), p. 78 [16].

Heterocrypta occidentalis HOLMES, Occas. Papers California Acad. Sci., vol. 7, 1900, p. 44.

Diagnosis.—Branchial ridge very sinuous, terminating at lateral angle of carapace. Two tubercles in front of convex part of ridge. A triangular, depressed area each side of buccal cavity. A raised, oval disk above ischium of cheliped.

Description.—Carapace broadly triangular; median gastric region narrow, the flattened upper surface bounded by two granulated ridges which converge to a point behind; cardiac region furnished with a three-sided, pyramidal elevation, the edges of which are usually granulated. Postero-lateral regions large, crossed by a sinuous, granulated crest, which extends from near the posterior end of the median gastric region to the acute lateral angles of the carapace; in front of the anterior bend of this crest there is a pair of small tubercles. Rostrum triangular, subacute, not deflexed. Antero-lateral margins straight or slightly concave in front, convex near the middle, the posterior portion passing outwards and backwards, arching over the legs; the teeth on the anterior part are small and irregular, but they become larger posteriorly where they are furnished with secondary denticles. Postero-lateral margins transverse, posterior margin produced beyond them but not overhanging abdominal segments. Ischium of maxilliped smooth, antero-internal angle produced; merus small, surface concave, a prominent tooth near middle. A long triangular concave area extends from the subhepatic region back to the afferent branchial openings; it includes the exognath and is surrounded by a fringe of hair; outside this area, and above the ischium of the cheliped there is a raised, level, oval area against which the inner surface of the manus plays, when the cheliped is flexed.

Chelipeds long, trigonal; surface of merus convex, edges sharply granulate to dentate; carpus with three or four granular lines; angles of hand prominent and dentate, surfaces concave. Legs compressed, strongly carinated; dactyls narrow, strongly sulcate, and with long corneous tips. (Holmes, amended.)

Color.—Tips of tubercles white, ridges bearing tubercles light purplish, remainder of carapace mottled with numerous minute spots of white and purplish, giving a pink effect which often closely approaches white. Legs usually a light yellow. (Weymouth.)

Measurements.—Male (48905), length of carapace 19.4, width of same 32, length of cheliped 56.2 mm.

Variation.—Rostrum usually more acute in young than in adult; in the young there is also considerable pubescence along angles of chelipeds and especially in branchial and frontal regions, sometimes covering greater part of carapace, while carapace of adult is commonly smooth. Middle of posterior margin of carapace more prominently rounded in female than in male.

Range.—From the Farallones, California, to Los Coronados Islands, Mexico. Boca de Los Piedras, Sinaloa, Mexico (Lockington). Depth, 13 to 50 fathoms.

Material examined.—See table, page 562.

Family HYMENOSOMIDAE

Pinnothériens MILNE EDWARDS (part), Hist. Nat. Crust., vol. 2, 1837, p. 28.

Pinnotheridae-Hymenicinae DANA, U. S. Expl. Exped., vol. 13, Crust., 1852, pp. 379 and 384.

Hymenosminae [*Hymenosominae*] MILNE EDWARDS, Ann. Sci. Nat., Zool., ser. 3, vol. 20, 1853, p. 221 [187].

Hymenosomidae STIMPSON, Proc. Acad. Nat. Sci. Philadelphia, vol. 10, 1858, p. 108 [54].—BORRADAILE, Ann. Mag. Nat. Hist., ser. 7, vol. 19, 1907, p. 480.—ALCOCK, Journ. Asiat. Soc. Bengal, vol. 69, 1900, pp. 280, 282, 285, 291 and 385.

Pinnotheridae-Hymenosominae MIERS, *Challenger* Rept., Zool., vol. 17, 1886, pp. 274–275.

Majoidea-Hymenosomidae ORTMANN, in Bronn's Thier Reich, vol. 5, pt. 2, Arthropoda, 1898, p. 1168.

Hymenosomatidae STEBBING, Marine Invest. S. Africa, vol. 4, 1905, p. 49.

Carapace thin and flat. Chelipeds not long or especially mobile or with fingers bent at an angle with the hand. Male openings sternal. There are no orbits and the eyes are exposed and little retractile. The palp of the external maxillipeds articulates near the antero-external angle of the merus. Antennular fossae shallow and ill defined. Antennal peduncle slender. No hooked hairs.

Genus HALICARCINUS White

Halicarcinus WHITE, Ann. Mag. Nat. Hist., vol. 18, 1846, p. 178; type, *H. planatus* (Fabricius).

Liriopea NICOLET, in Gay, Hist. Chile, Zool., vol. 3, 1849, p. 158; type, *L. leachii* (Guérin).

Epistome well defined. Antennules not concealed by front. No septum between antennules. Merus and ischium of outer maxillipeds of subequal size.

South Temperate zone. Only one species is American.

Material examined of Heterocrypta occidentalis

Locality	Bearings: Latitude N.	Bearings: Longitude W.	Fathoms	Bottom	Temp.	Date	Station	Collector	Specimens	Cat. No.	Remarks
California:	° ′ ″	° ′ ″			°F						
Gulf of the Farallones	37 42 00	122 53 20	33	yl. S.	50.8	Mar. 10, 1890	3101	*Albatross*	1 ♀	15598	
Monterey Bay	36 56 20	122 03 20	13	fne. S. rky.		Mar. 15, 1890	3142	do	2 ♂	15597	
Do	36 56 00	122 06 00	24	fne. gy. S. M.	53	do	3141	do	1 ♂	15599	
Do	36 55 30	122 02 00	19	fne. S. M. St.	55.4	do	3138	do	1 ♀	17378	
Do	Santa Cruz Lighthouse, N. 71° W., 2.4 miles.		10-12	fne. gy. S. R.		June 11, 1904	4560	do	1 ♂ 2 ovig. ♀	50400	
Do	Santa Cruz Lighthouse, N. 73° W., 3.3 miles.		14-15	ers. S. Sh. R.		do	4561	do	1 ♀	49206	
Do	Santa Cruz Lighthouse, N. 72° W., 8.1 miles.		10-11	hrd. S. R.		do	4562	do	1 ♂	48905	
Do	Point Pinos Lighthouse, S. 67° W., 4.6 miles.		26-31	fne. gy. S.		May 10, 1904	4442	do	1 y	49207	
Do	Point Pinos Lighthouse, S. 42° W., 7.6 miles.		13-15	fne. gy. S.		May 12, 1904	4459	do	1 ♂	48906	
Pacific Grove						July —, 1895		J. O. Snyder	1 ♂ 1 ♀	19816	
Off Santa Rosa Island	Off Brockway Point		40-45			Apr. 15, 1904	4431	*Albatross*	1 ovig. ♀	50397	
Off Venice						1913-1914	(1)	*Anton Dohrn*	34	50124-6 50128 50131 50133-4 50136-9 50144-5	From Venice Mar. Biol. Lab.
Off San Pedro						1912-1914	(2)	do	22	50127 50129-30 50132 50135 50147	Do.
San Pedro								M. Baldridge	1 ♀	41496	
Do								H. N. Lowe	1 ♂	19732	
Off Catalina Island			50					do	2 ♂ 3 ♀ 2y	29958	
San Clemente Island						Jan. —, 1899		do	1 ♂	23062	
Off San Diego	32 35 00	117 13 30	22	gr. M. crs. G.	66	Mar. 24, 1898	3679	*Albatross*	1 ♂	21771	
Mexico:											
Off Los Coronados Islands	32 28 45	117 16 15	36	fne gy. S.	57 3	Jan. 26, 1889	2933	do	1 ♀	17377	

[1] 13 stations.

[2] 26 stations.

HALICARCINUS PLANATUS (Fabricius)

Plate 202, fig. 5; plate 283

?Cancer orbiculus FABRICIUS, Syst. Ent., 1775, p. 402 (type-locality, New Zealand; type in Brit. Mus.).

Cancer planatus FABRICIUS, Syst. Ent., 1775, p. 403 (type-locality, Terra del Fuego; type in Brit. Mus.).

Leucosia planata FABRICIUS, Entom. Syst., Suppl., 1798, p. 350.

Halicarcinus planatus WHITE, Ann. Mag. Nat. Hist., ser. 1, vol. 18, 1846, p. 178, pl. 2, fig. 1.—DANA, U. S. Expl. Exped., vol. 13, Crust., pt. 1, 1852, p. 385; atlas, 1855, pl. 24, figs. 7*a* and *b*.—STEBBING, Proc. Zool. Soc. London, 1900, p. 524, pl. 36B, and synonymy, except probably *Hymenosoma planatum* Haswell; Trans. Roy. Soc. Edinburgh, vol. 50, 1914, p. 271, and synonymy.—CHILTON, Subantarctic Ids. of New Zealand, art. 26, 1909, p. 609.—DOFLEIN and BALSS, Jahrb. Hamburg. Wiss. Anst., vol. 29, 1912, p. 35.

Liriopea leachii NICOLET, in Gay, Hist. Chile, Zool., vol. 3, 1849, p. 160; atlas, vol. 2, 1854, Crust., pl. 1, figs. 1-1*f*; type-locality, Chile; type not extant).

Liriopea lucasii NICOLET, in Gay, Hist. Chile, Zool., vol. 3, 1849, p. 161 (type-locality, Chile; type not extant).

?Halicarcinus pubescens DANA, Proc. Acad. Nat. Sci. Philadelphia, vol. 5, 1851, p. 253; U. S. Expl. Exped., vol. 13, Crust., pt. 1, 1852, p. 386; atlas, 1855, pl. 24, fig. 8 (type-locality, off Cape Blanco, Patagonia, 50 fathoms; type not extant).

Diagnosis.—Lateral teeth of carapace below the marginal rim. Median frontal tooth a little smaller and less advanced than the lateral teeth. Supero-terminal tooth of merus of cheliped absent or obscure. Dactyli of ambulatory legs moderately curved.

Description.—Carapace distinctly broader than long, ovate, narrowed before; flat or even depressed, surrounded except the marginal teeth by a sharp rim; median grooves linear, the branchial groove strongly angled, the gastro-cardiac groove bent slightly backward at the middle; a median cardiac groove. Three similar frontal teeth, the median somewhat smaller. Two lateral teeth forming angles below the marginal rim; the posterior of these teeth is well developed and acute; the anterior is smaller and variable, usually obtuse, sometimes acute, sometimes obsolescent on one or both sides.

Chelipeds stout, especially in male; palms swollen, fingers nearly horizontal, gaping slightly in basal half, prehensile margins denticulate, a tooth on the dactyl within the gape. Legs slender, diminishing in length from the first to the fourth pair, the longer pairs exceeding the chelipeds; dactyli flattened, not very slender, moderately curved.

Abdomen of male constricted between the sixth and seventh segments, the seventh segment subtriangular.

Color.—Varying from slaty-blue to reddish-brown, legs banded (Mawson Exped.).

Measurements.—Male (18209), length of carapace 8.4, width 10.3 mm.

Habitat.—Under stones and kelp (Stebbing).

Range.—From Valparaiso, Chile, by way of Straits of Magellan to Patagonia; Falkland Islands; South Orkney Islands; Prince Edward Islands; Kerguelen Island; Macquarie Island; Campbell Island; Auckland Islands; New Zealand. To a depth of 270 meters (148 fathoms) (Doflein and Balss).

Material examined.—

Off Atlantic entrance to Straits of Magellan, Patagonia; lat. 52° 23′ 00″ S.; long. 68° 11′ 00″ W.; 10 fathoms; fne. gy. S.; January 17, 1888; station 2773, *Albatross;* 11 females (9 ovigerous) (22114).

Straits of Magellan; Patagonia; 1888; *Albatross:* Lat. 52° 22′ 30″ S.; long. 69° 22′ 00″ W.; 29.5 fathoms; S. St.; January 18; station 2775; 1 young female (22115). Lat. 52° 41′ 00″ S.; long. 69° 55′ 30″ W.; 21 fathoms; S. G.; January 18; station 2776; 1 female (22116).

Laredo Bay, Patagonia; January 22, 1888; *Albatross;* 3 males, 4 females (18209, 22120).

Sandy Point, Patagonia; January 24, 1888; *Albatross;* 2 males, 11 females (22117).

Borja Bay, Patagonia; February 1, 1888; *Albatross;* 1 female (22123).

Port Churruca, Patagonia; February 2, 1888; *Albatross;* 26 specimens (18210, 22118).

Mayne Harbor, Patagonia; February 5, 1888; *Albatross;* 1 female (22121).

Latitude Cove, Patagonia; February 6, 1888; *Albatross;* 30 females (22119).

Port Otway, Patagonia; February 9, 1888; *Albatross;* 3 females (22122).

Patagonia; Barnum Brown; 4 females (3 ovigerous) (53356); received from American Museum of Natural History.

Valparaiso, Chile; specimens in Copenhagen Mus.

Chiloe Island, Chile; January, 1923; Luis Moreira, collector; received from C. E. Porter; 1 male, 1 female (57003).

Falkland Islands; W. L. Josselyn; 1 female (53355); received from American Museum of Natural History.

Kerguelen Island; 1874; Dr. J. H. Kidder, U. S. N.; Transit of Venus Expedition; 1 male (19412); dredged in 5 fathoms, 3 specimens (2206); on rocky beach, 4 specimens (2207).

Macquarie Island; Mawson Expedition; 50 specimens; 4 specimens in U. S. National Museum (49091).

Cape Campbell, New Zealand; from Otago University Museum; 1 male, 1 female (16234).

EXPLANATION OF PLATES

The photographs of the Parthenopidae were taken and retouched by John Howard Paine. The remainder of the photographs made for this report, unless otherwise indicated, were taken by the U. S. National Museum and retouched by Seward H. Rathbun.

PLATE 1

Dasygyius depressus, male (21873), carapace 25.3 mm. long between tips of spines

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 2

Stenorynchus seticornis, male (42956), carapace 48.7 mm. long, dorsal view

PLATE 3

Stenorynchus seticornis, same specimen as plate 2, ventral view

PLATE 4

Stenorynchus debilis, male (15544), carapace 34.5 mm. long, dorsal view

PLATE 5

Stenorynchus debilis, same specimen as plate 4, ventral view

PLATE 6

Metoporhaphis calcarata, male (50981), carapace 21.3 mm. long, dorsal view

PLATE 7

Metoporhaphis calcarata, same specimen as plate 6, ventral view

PLATE 8

FIG. 1. *Anomalothir frontalis*, male (15157), carapace 13 mm. long to tip of horns, dorsal view.
2. *Anomalothir furcillatus*, female (54427), carapace 20.8 mm. long to end of horns, dorsal view.

PLATE 9

FIG. 1. *Anomalothir frontalis*, male (15157), carapace 13 mm. long to tips of horns, ventral view.
2. *Anomalothir furcillatus*, female (54427), carapace 20.8 mm. long to tips of horns, ventral view.

PLATE 10

Achaeopsis thomsoni

FIG. 1. Male (18672), carapace 10.3 mm. long to tips of horns, dorsal view.
2. Same, ventral view.
3. Female (18679), carapace 11.5 mm. long to tips of horns, dorsal view.

PLATE 11

FIG. 1. *Podochela riisei*, male (18075), carapace 18.7 mm. long, ventral view.
2. Same, dorsal view.
3. *Podochela lobifrons*, male holotype, carapace 20.4 mm. long, dorsal view.
4. Same, ventral view.

PLATE 12

Podochela sidneyi, male holotype, carapace 14 mm. long, dorsal view

PLATE 13

Podochela sidneyi, same specimen as plate 12, ventral view

PLATE 14

Podochela vestita, female (17330), carapace 9.8 mm. long. A bryozoan encrusts the right hepatic region

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 15

Podochela margaritaria, male holotype, carapace 15 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

The loose legs are numbered according to their position on the body.

PLATE 16

Podochela macrodera, male (18670), carapace 11.5 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 17

Podochela gracilipes, male (18089), carapace 12.3 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 18

Podochela hemphillii, male (21862), carapace 24.1 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 19

Podochela curvirostris, female (6945), carapace 21 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 20

FIG. 1. *Podochela lamelligera*, female (18076), carapace 20 mm. long, dorsal view.
2. *Podochela lamelligera*, male (18076), carapace 18.2 mm. long, ventral view.
3. *Podochela barbarensis*, male holotype, carapace 23.8 mm. long, dorsal view. Rostrum bent abnormally to the right.
4. Same, ventral view.

PLATE 21

Podochela latimanus, male holotype, carapace 26 mm. long

FIG. 1. Dorsal view
2. Ventral view.

PLATE 22

FIG. 1. *Inachoides microrhynchus*, male (40463), carapace 17.8 mm. long, dorsal view.
2. Same, ventral view.
3. *Inachoides laevis*, female (50641), with appendages separate, carapace 6.6 mm. long, dorsal view.
4. Same, ventral view.
5. *Inachoides laevis*, old male (1247, M.C.Z.), carapace 10.7 mm. long, ventral view.
6. Same, dorsal view. Figures 5 and 6 photographed by George Nelson, Museum of Comparative Zoölogy.

PLATE 23

FIG. 1. *Eucinetops blakiana*, male holotype, carapace 4.4 mm. long, dorsal view.
2. Same, ventral view.
3. *Eucinetops panamensis*, male holotype, carapace 10.5 mm. long to tip of horns, dorsal view.
4. Same, ventral view. Photographs of figures 3 and 4 by George Nelson, Museum of Comparative Zoölogy.
5. *Anasimus fugax*, male (24222), carapace 8 mm. long, ventral view.
6. Same specimen, dorsal view.

PLATE 24

Oregonia gracilis, male (48833), carapace 65.4 mm. to tips of horns, dorsal view

PLATE 25

Oregonia gracilis, same specimen as plate 24, ventral view

PLATE 26

Oregonia bifurca, female holotype, carapace 26.4 mm. long, dorsal view

PLATE 27

Oregonia bifurca, same specimen as plate 26, ventral view

PLATE 28

Oregonia bifurca, male (46489), carapace 28.2 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 29

Collodes robustus, male (18763), carapace 26.3 mm. long to tips of horns

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 30

Eurypodius latreillii, male (21887), carapace 69 mm. long, dorsal view

PLATE 31

Eurypodius latreillii, same specimen as plate 30, ventral view

PLATE 32

FIG. 1. *Arachnopsis filipes*, male (18117), carapace 7 mm. long, dorsal view.
2. Same, ventral view.
3. *Aepinus septemspinosus*, male (24150), carapace 8 mm. long from tip of posterior spine, dorsal view.
4. Same, ventral view.

PLATE 33

FIG. 1. *Euprognatha rastellifera*, male (46979), carapace 9.3 mm. long, profile.
2. Same, dorsal view. *a*. Carapace and cheliped. *b*. Ambulatory leg.
3. *Euprognatha rastellifera marthae*, male holotype, carapace 14.3 mm. to tip of rostrum, ventral view.
4. Same, dorsal view.

PLATE 34

FIG. 1. *Euprognatha rastellifera acuta*, male (18108), carapace 10 mm. long.
2. Same, profile.
3. *Euprognatha gracilipes*, male (9509), carapace 8.8 mm. long, dorsal view.
4. Same, ventral view.
5. *Euprognatha bifida*, male holotype, carapace 9 mm. long to tips of rostrum, dorsal view.
6. Same, ventral view.

PLATE 35

FIG. 1. *Eurypodius longirostris*, male holotype, Chile, carapace 19 mm. long to base of rostrum, dorsal view. After Miers.
2. Same, in profile. After Miers.
3. *Euprognatha rastellifera=inermis*, male, Guadeloupe, carapace 8.5 mm. long, in profile. After A. Milne Edwards.
4. Same, anterior part, ventral view. After A. Milne Edwards.
5. *Euprognatha granulata*, female cotype, carapace 8.9 mm. long, dorsal view. After Faxon.
6. Same, anterior part, ventral view. After Faxon.

PLATE 36

FIG. 1. *Collodes granosus*, female (21863), carapace 8.5 mm. long, dorsal view.
2. Same, ventral view.
3. *Collodes obesus*, female (46984), carapace 11 mm. long, dorsal view.
4. Same, ventral view.
5. *Collodes trispinosus*, male (9783), carapace 14 mm. long to tips of horns, dorsal view.
6. Same, ventral view.
7. *Collodes rostratus*, male (21864), carapace 11.4 mm. long, dorsal view.
8. Same, ventral view.

PLATE 37

Collodes tenuirostris, male (21867), carapace 18 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 38

FIG. 1. *Collodes levis*, female cotype, carapace 5.3 mm. long, dorsal view.
2. Same, ventral view.
3. *Collodes inermis*, male (24142), carapace 8.6 mm. long, dorsal view.
4. Same, ventral view.
5. *Collodes leptocheles*, male holotype, carapace 16.5 mm. long to tips of horns, dorsal view.
6. Same, ventral view.

PLATE 39

FIG. 1. *Batrachonotus fragosus*, male (47069), carapace 7.2 mm. long from tip of posterior spines to tips of rostrum, ventral view; also outer view of left cheliped.
2. Same specimen, dorsal view.
3. *Batrachonotus fragosus*, female (19943), carapace 6.6 mm. long, ventral view, chelipeds detached.
4. Same specimen, dorsal view.
5. *Batrachonotus nicholsi*, male (21872), carapace 9 mm. long, dorsal view.
6. Same, ventral view.
7. *Batrachonotus nicholsi*, female (21869), carapace 12.5 mm. long, dorsal view.
8. Same, ventral view.

PLATE 40

FIG. 1. *Collodes tumidus*, male holotype, carapace 11.6 mm. long, dorsal view.
2. Same, ventral view.
3. *Pyromaia tuberculata*, young male (21880), carapace 9 mm. long, dorsal view.

PLATE 41

FIG. 1. *Pyromaia cuspidata*, female (46778), carapace 29 mm. long, dorsal view.
2. Same, ventral view.
3. *Pyromaia cuspidata*, male (46778), carapace 40.6 mm. long, with barnacles attached to rear, ventral view showing development of chelipeds.

PLATE 42

Pyromaia arachna, male holotype, carapace 45 mm. long, dorsal view. A *Lepas* attached to rear

PLATE 43

Pyromaia arachna, same specimen as plate 42, ventral view

PLATE 44

Acanthonyx petiverii, male (18673), carapace 14.8 mm. long to tips of horns

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 45

FIG. 1. *Epialtus kingsleyi*, male holotype, carapace 7.7 mm. long. *a*. Dorsal view of carapace. *b*. Outer view of left cheliped.
2. *Epialtus dilatatus*, female (47085), carapace 8.6 mm. long, dorsal view.
3. *Epialtus bituberculatus*, male (24849), carapace 13.8 mm. long, dorsal view.
4. Same, ventral view.

PLATE 46

FIG. 1. *Epilatus hiltoni*, male (18136), total length of carapace 10.8 mm., dorsal view.
2. Same, ventral view.
3. *Epialtus sulcirostris*, male, San Marcos Island, carapace 11.2 mm. long, ventral view.

PLATE 47

FIG. 1. *Epialtus minimus*, male, San Marcos Island, carapace 16 mm. long, dorsal view.
2. *Epialtus sulcirostris*, male, San Marcos Island, carapace 11.2 mm. long, dorsal view.

PLATE 48

Epialtus dilatatus forma elongata, male holotype, total length of carapace 11.5 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 49

FIG. 1. *Menaethiops portoricensis*, female holotype, carapace 5.4 mm. long to tips of horns, dorsal view.
2. *Menaethiops portoricensis*, male paratype, × 3⅓; horns broken off, ventral view.
3. *Mocosoa crebripunctata*, male (18129), carapace 7 mm. long, dorsal view.
4. Same, ventral view.
5. *Eupleurodon peruvianus*, female holotype, total length of carapace 10 mm., dorsal view, legs detached.
6. Same, ventral view, legs removed.

PLATE 50

Taliepus nuttallii, male (3108), total length of carapace 100.5 mm., dorsal view

PLATE 51

Taliepus nuttallii, same specimen as plate 50, ventral view

PLATE 52

Taliepus marginatus, male (40459), total length of carapace 99.8 mm., dorsal view

PLATE 53

Taliepus marginatus, same specimen as plate 52, ventral view

PLATE 54

Taliepus dentatus, male (21903), total length of carapace 94.7 mm., dorsal view

PLATE 55

Taliepus dentatus, same specimen as plate 54, ventral view

PLATE 56

Pugettia producta, old male (47970), total length of carapace 87 mm., dorsal view

PLATE 57

Pugettia producta, same specimen as plate 56, ventral view

PLATE 58

Pugettia gracilis, old male (5771), carapace 53.3 mm. long to tips of horns

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 59

FIG. 1. *Pugettia dalli*, male (17506), total length of carapace 10.8 mm., dorsal view.
2. Same, ventral view.
3. *Pugettia dalli*, female (17506), total length of carapace 12 mm., dorsal view.
4. Same, ventral view.
5. *Pugettia venetiae*, male (50268), total length of carapace 16 mm.
6. *Pugettia venetiae*, male (50268), left cheliped, upper length of palm 5.7 mm.
7. *Pugettia venetiae*, female holotype, total length of carapace 20.7 mm., dorsal view.

PLATE 60

Mimulus foliatus, male (3291), total length of carapace 23 mm.; encrusted with bryozoans

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 61

Leucippa pentagona, male (21900), total length of carapace 16.3 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 62

Sphenocarcinus corrosus, female (51071), total length of carapace 20.2 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 63

Sphenocarcinus agassizi, male holotype, total length of carapace 35 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 64

Loxorhynchus grandis, male (17379), total length of carapace 84 mm., dorsal view

PLATE 65

Loxorhynchus grandis, same specimen as plate 64, ventral view

PLATE 66

Loxorhynchus crispatus, male (15601), total length of carapace 90 mm., dorsal view

PLATE 67

Loxorhynchus crispatus, same specimen as plate 66, ventral view

PLATE 68

Rochinia crassa, male (18671), total length of carapace 102.3 mm., dorsal view; encrusted with many barnacles, *Poecilasma inaequilaterale* Pilsbry

PLATE 69

Rochinia crassa, same specimen as plate 68, ventral view

PLATE 70

Rochinia hystrix, male (46703), total length of carapace 41.4 mm., dorsal view

PLATE 71

Rochinia hystrix, same specimen as plate 70, ventral view

PLATE 72

Rochina umbonata, male (11377), total length of carapace 26.5 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 73

FIG. 1. *Rochinia umbonata*, female (11377), total length of carapace 30.5 mm., dorsal view.
2. *Lissa brasiliensis*, female holotype, carapace 16.6 mm. long, dorsal view. Photograph by George Nelson, Museum of Comparative Zoölogy.
3. *Lissa bicarinata*, female (24120), carapace 9.6 mm. long, dorsal view.
4. Same, ventral view.

PLATE 74

Libidoclaea smithii, male (21922), total length of carapace 48 mm., dorsal view

PLATE 75

Libidoclaea smithii, same specimen as plate 74, ventral view

PLATE 76

Libidoclaea granaria, male (21919), total length of carapace 38.7 mm., dorsal view

PLATE 77

Libidoclaea granaria, same specimen as plate 76, ventral view

PLATE 78

Libidoclaea granaria, old male (1870, M. C. Z.), carapace 90.5 mm. long to tips of rostrum, dorsal view; encrusted with *Balanus*. Photograph by George Nelson, Museum of Comparative Zoölogy

PLATE 79

Scyra acutifrons, male (31547), total length of carapace 32.4 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 80

Trachymaia cornuta, male (11400), total length of carapace 16.2 mm.

FIG. 1. Ventral view.
2. Dorsal view.

PLATE 81

Notolopas lamellatus, male (48805), total length of carapace 20.2 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 82

Leurocyclus gracilipes, male (21907), carapace 12.7 mm. long, dorsal view

PLATE 83

Leurocyclus gracilipes, same specimen as plate 82, ventral view

PLATE 84

Chionoecetes opilio, male (10207), total length of carapace 93.6 mm., dorsal view; encrusted with serpulids

PLATE 85

Chionoecetes opilio, same specimen as plate 84, ventral view

PLATE 86

Chionoecetes bairdi, male (19307), total length of carapace 70.3 mm., dorsal view

PLATE 87

Chionoecetes bairdi, same specimen as plate 86, ventral view

PLATE 88

Chionoecetes tanneri, male (46468), total length of carapace 94.5 mm., dorsal view

PLATE 89

Chionoecetes tanneri, same specimen as plate 88, ventral view

PLATE 90

Chionoccetes angulatus, male holotype, median length of carapace 73 mm., dorsal view

PLATE 91

Chionoccctes angulatus, same specimen as plate 90, ventral view

PLATE 92

Hyas araneus, male (10229), total length of carapace 72.4 mm., dorsal view

PLATE 93

Hyas araneus, same specimen as plate 92, ventral view

PLATE 94

Hyas coarctatus, male (4554), total length of carapace 29.5 mm., dorsal view

PLATE 95

Hyas coarctatus, same specimen as plate 94, ventral view

PLATE 96

Hyas coarctatus alutaceus, male (15873), total length of carapace 77 mm., dorsal view

PLATE 97

Hyas coarctatus alutaceus, same specimen as plate 96, ventral view

PLATE 98

FIG. 1. *Pelia pacifica*, male (46077), total length of carapace 12.2 mm., ventral view.
2. *Pelia mutica*, male (14458), total length of carapace 12.8 mm., dorsal view.
3. Same, ventral view.

PLATE 99

FIG. 1. *Pelia pacifica*, male (46077), total length of carapace 12.2 mm., dorsal view; overgrown with sponge and bryozoans.
2. *Pelia tumida*, male (16348), total length of carapace 12.5 mm., dorsal view.
3. Same, ventral view.

PLATE 100

Pelia rotunda, male (17321), total length of carapace 17.5 mm.; *Balanus* attached

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 101

Micropisa violacea, male (334, Mus. Paulista), length of carapace 51 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 102

Nibilia antilocapra, male (14091), total length of carapace 54.2 mm., dorsal view

PLATE 103

Nibilia antilocapra, same specimen as plate 102, ventral view

PLATE 104

FIG. 1. *Herbstia depressa*, female, Barbados, total length of carapace 14.8 mm., dorsal view. (After Rathbun.) Photograph lent by State University of Iowa.
2. *Herbstia pyriformis*, male (1895, M. C. Z.), total length of carapace 14.7 mm., dorsal view.
3. Same, ventral view. Figures 2 and 3 photographed by George Nelson, Museum of Comparative Zoölogy.

PLATE 105

FIG. 1. *Herbstia camptacantha*, male cotype (991, M. C. Z.), length of carapace 17.1 mm., dorsal view.
2. Same, ventral view.

FIG. 3. *Herbstia edwardsii*, female (1879, M. C. Z.), total length of carapace 10.5 mm., dorsal view.
4. Same, ventral view. Figures 1–4 photographed by George Nelson, Museum of Comparative Zoölogy.
5. *Herbstia tumida*, female (Amer. Mus.), total length of carapace 13.5 mm., dorsal view.
6. Same, ventral view.

PLATE 106

Herbstia parvifrons, male (32962), total length of carapace 43.3 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 107

Chorinus heros, male (47353), total length of carapace 54 mm.

FIG. 1. Ventral view.
2. Dorsal view.

PLATE 108

Holoplites armata, female (6941), total length of carapace 23.4 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 109

Libinia erinacea, immature female (46292), length of carapace measured between tips of spines 32.2 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 110

Libinia emarginata, male (3136), total length of carapace 82.6 mm., dorsal view

PLATE 111

Libinia emarginata, same specimen as plate 110, ventral view

PLATE 112

Libinia emarginata, variety, female (15203), total length of carapace 71.5 mm., dorsal view

PLATE 113

Libinia emarginata, variety, same specimen as plate 112, ventral view

PLATE 114

Libinia dubia, male (4905), total length of carapace 83.4 mm., dorsal view

PLATE 115

Libinia dubia, same specimen as plate 114, ventral view

PLATE 116

Libinia rhomboidea, male (48671), total length of carapace 90 mm., dorsal view

PLATE 117

Libinia rhomboidea, same specimen as plate 116, ventral view

PLATE 118

Libinia ferreirae, female (47833), total length of carapace 50.6 mm., dorsal view

PLATE 119

Libinia ferreirae, same specimen as plate 118, ventral view. Endopodite of right outer maxilliped removed

PLATE 120

Libinia spinosa, male, Ilha Victoria (Mus. Paulista), total length of carapace 69.8 mm., dorsal view

PLATE 121

Libinia spinosa, same specimen as plate 120, ventral view

PLATE 122

FIG. 1. *Libinia dubia*, young male (Phila. Acad.), holotype of *L. subspinosa* Streets, median length of carapace 37 mm., dorsal view.
2. *Libinia rostrata*, male, Brazil (Phila. Acad.), median length of carapace 70.4 mm., dorsal view. Photograph by the Philadelphia Academy of Natural Sciences.

PLATE 123

Paramithrax bäckströmi, male (55121), length of carapace 16.3 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 124

FIG. 1. *Hemus cristulipes*, female (19724), carapace 7.6 mm. long, dorsal view.
2. *Hemus analogus*, female (21573), carapace 8.2 mm. long, dorsal view; chelipeds and legs detached.
3. Same, ventral view; chelipeds and legs detached, outer maxillipeds removed.
4. *Thoe aspera*, male (23773), carapace 10 mm. long to tips of rostrum, dorsal view.
5. Same, ventral view.

PLATE 125

FIG. 1. *Thoe puella*, male (46739), carapace 11.4 mm. long to tips of rostrum, dorsal view.
2. Same, ventral view.
3. *Thoe sulcata*, male (47121), carapace 13.6 mm. long to tips of rostrum, dorsal view.
4. Same, ventral view.
5. *Thoe panamensis*, male (48786), carapace 13.4 mm. long to tips of rostrum, dorsal view; inclined a little to left side.
6. Same, ventral view.

PLATE 126

Picroceroides tubularis, male (49084), carapace 20 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 127

Pitho aculeata, male (14054), carapace 24.2 mm. wide

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 128

FIG. 1. *Pitho lherminieri*, male (51003), carapace 14.8 mm. wide, dorsal view.
2. *Pitho lherminieri*, female (51058), carapace 15.2 mm. wide, dorsal view.
3. *Pitho mirabilis*, female (15807), carapace 17.7 mm. wide, dorsal view.

PLATE 129

FIG. 1. *Pitho lherminieri*, male (51003), carapace 14.8 mm. wide, ventral view.
2. *Pitho lherminieri*, female (51058), carapace 15.2 mm. wide, ventral view.
3. *Pitho mirabilis*, male (15807), carapace 13.7 mm. wide, ventral view.

PLATE 130

FIG. 1. *Pitho sexdentata*, female (55116), carapace 12.3 mm. wide, dorsal view.
2. *Pitho picteti*, male (50654), carapace 17.6 mm. wide, dorsal view.
3. Same, ventral view.

PLATE 131

Pitho anisodon, male (15093), carapace 28.7 mm. wide

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 132

FIG. 1. *Pitho dispar*, female (24205), carapace 16 mm. wide, dorsal view.
2. *Pitho quadridentata*, male (19585), carapace 23 mm. wide, dorsal view.
3. *Pitho laevigata*, female (53051), carapace 34.4 mm. wide, dorsal view.
4. *Pitho laevigata*, carapace of Herbst's specimen, 34.8 mm. wide, dorsal view.

PLATE 133

FIG. 1. *Pitho dispar*, female (24205), carapace 16 mm. wide, ventral view.
2. *Pitho quadridentata*, male (19585), carapace 23 mm. wide, ventral view.
3. *Pitho laevigata*, female (53051), carapace 34.4 mm. wide, ventral view.

PLATE 134

FIG. 1. *Leptopisa setirostris*, male (47065), total length of carapace 22.6 mm., dorsal view.
2. Same, ventral view.
3. *Leptopisa setirostris*, male (6929), total length of carapace 22 mm., dorsal view.
4. *Anaptychus cornutus*, male (46076), total length of carapace 17 mm., dorsal view.
5. Same, ventral view.

PLATE 135

Mithrax spinosissimus, old male (41777), total length of carapace 170 mm., dorsal view

PLATE 136

FIG. 1. *Mithrax aculicornis*, male (25592), carapace 18.7 mm. wide, dorsal view.
2. Same, ventral view.
3. *Mithrax spinipes*, male (16064), carapace 10.3 mm. wide, ventral view.
4. Same, dorsal view.

PLATE 137

FIG. 1. *Mithrax bahamensis*, male (42513), carapace 16.4 mm. wide, ventral view.
2. Same, dorsal view.
3. *Mithrax cornutus*, female (32717), total length of carapace 40.4 mm., dorsal view.

FIG. 4. *Mithrax cornutus* (9502), carapace only, total length 32.4 mm., dorsal view.

PLATE 138

FIG. 1. *Mithrax holderi*, female (25567), total length of carapace 27 mm., dorsal view.
2. Same, ventral view.
3. *Mithrax pilosus*, female, type of *Cancer aculeatus* Herbst in Berlin Museum, much reduced.

PLATE 139

Mithrax hemphilli

FIG. 1. Male, Guadeloupe, in Geneva Museum, total length of carapace 34.5 mm., dorsal view.
2. Female (21948), total length of carapace 25.3 mm., dorsal view.
3. Same, ventral view.

PLATE 140

Mithrax orcutti, female, Mexico, in Philadelphia Academy, total length of carapace 49 mm., dorsal view

PLATE 141

Mithrax orcutti, same specimen as plate 140, ventral view

PLATE 142

Mithrax bellii, male (25672), total length of carapace 63.6 mm., dorsal view

PLATE 143

Mithrax bellii, same specimen as plate 142, ventral view

PLATE 144

Mithrax verrucosus, male (15075), total length of carapace 47.4 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 145

Mithrax hispidus, old male (41523), length of carapace 84.2 mm., dorsal view

PLATE 146

Mithrax hispidus, male (20706), total length of carapace 25.5 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 147

FIG. 1. *Mithrax braziliensis*, male (Rio de Janeiro) in Geneva Museum, total length of carapace 23 mm., dorsal view.
2. *Mithrax tortugae*, female (50442), carapace 24.8 mm. wide, dorsal view.
3. *Mithrax hispidus*, variety, male (21949), total length of carapace 51.1 mm., dorsal view.

PLATE 148

Mithrax caribbaeus, male holotype, total length of carapace 66.3 mm., dorsal view. (After Rathbun)

PLATE 149

Mithrax caribbaeus, same specimen as plate 148, ventral view

PLATE 150

Mithrax pleuracanthus

FIG. 1. Male (7651), total length of carapace 23.8 mm., dorsal view.
2. Male (6983), total length of carapace 28.3 mm., dorsal view.

PLATE 151

FIG. 1. *Mithrax tuberculatus*, male (23178), carapace 13 mm. wide, dorsal view.
2. Same, ventral view.
3. *Mithrax sinensis*, male (21951), carapace 12.7 mm. wide, dorsal view.
4. Same, ventral view.

PLATE 152

Mithrax (*Mithraculus*) *sculptus*, male (14058), carapace 22.2 mm. wide

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 153

Mithrax (*Mithraculus*) *coryphe*, male (21957), carapace 26.5 mm. wide

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 154

FIG. 1. *Mithrax* (*Mithraculus*) *areolatus*, young (53961), total length of carapace 5.3 mm., dorsal view.
2. *Mithrax* (*Mithraculus*) *denticulatus*, male (3209), carapace 18.9 mm. wide, dorsal view.
3. Same, ventral view.

PLATE 155

Mithrax (*Mithraculus*) *nodosus*, male (25673), carapace 29.4 mm. wide. Right hind leg aborted

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 156

Mithrax (*Mithraculus*) *forceps*, male (46810), carapace 20.5 mm. wide

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 157

Mithrax (*Mithraculus*) *ruber*, male (50377), carapace 13.2 mm. wide

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 158

Mithrax (*Mithraculus*) *cinctimanus*, male (17963), carapace 18.7 mm. wide

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 159

FIG. 1. *Teleophrys cristulipes*, female (1226, M. C. Z.), much enlarged, ventral view.
2. Same, dorsal view. Figures 1 and 2 photographed by George Nelson, Museum of Comparative Zoölogy.
3. *Teleophrys ornatus*, female (23774), carapace 5.5 mm. long, ventral view.
4. Same, dorsal view.
5. *Teleophrys pococki*, male (25765), carapace 7.3 mm. long, ventral view.
6. Same, dorsal view.
7. *Teleophrys cristulipes*, male (46079), carapace 8 mm. long, ventral view, to show chelae.
8. *Teleophrys tumidus*, old male (40466), carapace 19 mm. wide, inclined a little to right, dorsal view.
9. Same, ventral view.

PLATE 160

Stenocionops furcata, male (49902), total length of carapace 126.3 mm. long, dorsal view

PLATE 161

Stenocionops furcata, same specimen as plate 160, ventral view

PLATE 162

Stenocionops contigua, old male (18512), total length of carapace 66.4 mm., dorsal view

PLATE 163

Stenocionops contigua, same specimen as plate 162, ventral view

PLATE 164

Stenocionops furcata coelata, male (51018), carapace 44 mm. long

FIG. 1. Ventral view.
2. Dorsal view.

PLATE 165

FIG. 1. *Stenocionops triangulata*, male (21940), total length of carapace 30 mm., dorsal view.
2. *Stenocionops spinosissima*, female (32712), total length of carapace 94 mm., dorsal view.

PLATE 166

FIG. 1. *Macrocoeloma trispinosum*, male (17959), total length of carapace 33.7 mm., ventral view.
2. *Macrocoeloma trispinosum nodipes*, male (46915), total length of carapace 44.8 mm., ventral view.

PLATE 167

Macrocoeloma trispinosum

FIG. 1. Male (17959), total length of carapace 33.7 mm., dorsal view.
2. Male (43027), covered with sponge, dorsal view, length of right chela 21.5 mm.

PLATE 168

FIG. 1. *Macrocoeloma trispinosum*, variety, male (43015), total length of carapace 42.6 mm., dorsal view.
2. *Macrocoeloma trispinosum nodipes*, male (46915), total length of carapace 44.8 mm., dorsal view.

PLATE 169

FIG. 1. *Macrocoeloma diplacanthum*, female (9365), total length of carapace 28.2 mm., dorsal view.
2. *Macrocoeloma laevigatum*, male (46933), total length of carapace 24.8 mm., dorsal view.
3. Same, ventral view.

PLATE 170

FIG. 1. *Macrocoeloma eutheca*, female (46932), total length of carapace 24 mm., dorsal view.
2. *Macrocoeloma intermedium*, male (9492), total length of carapace 25.3 mm., dorsal view.
3. *Macrocoeloma concavum*, female (24214), total length of carapace 37 mm., dorsal view.

PLATE 171

FIG. 1. *Macrocoeloma eutheca*, female (46932), total length of carapace 24 mm., ventral view.
2. *Macrocoeloma intermedium*, male (9492), total length of carapace 25.3 mm., ventral view.
3. *Macrocoeloma concavum*, female (24214), total length of carapace 37 mm., ventral view.

PLATE 172

Macrocoeloma subparallelum, male (48666), total length of carapace 34.6 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 173

FIG. 1. *Macrocoeloma heptacanthum*, female (21933), total length of carapace 11.1 mm., dorsal view.
2. *Macrocoeloma septemspinosum*, male (15128), total length of carapace 24 mm., dorsal view.
3. Same, ventral view.

PLATE 174

FIG. 1. *Microphrys interruptus*, male, Antigua (Mus. S. U. I.), total length of carapace 16.7 mm., dorsal view. (After Rathbun.) Photograph lent by the State University of Iowa.
2. *Microphrys interruptus*, male (48753), total length of carapace 10.7 mm., ventral view. Rhizocephalid parasite under abdomen.
3. Same, dorsal view.
4. *Macrocoeloma camptocerum*, male (46912), total length of carapace 40.8 mm., ventral view.

PLATE 175

Microphrys bicornutus, male (7580), total length of carapace 36.8 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 176

FIG. 1. *Microphrys platysoma*, male (20292), total length of carapace 17.2 mm., dorsal view. (After Rathbun.)
2. Same, ventral view.
3. *Microphrys antillensis*, male (43017), total length of carapace 14.1 mm., dorsal view.
4. Same, ventral view.
5. *Microphrys branchialis*, male (21576), total length of carapace 15.3 mm., dorsal view.
6. Same, ventral view.

PLATE 177

Microphrys triangulatus, male (21943), total length of carapace 15.2 mm.

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 178

Parthenope agonus, male (15173), carapace 15.2 mm. long, dorsal view

PLATE 179

Parthenope agonus, same specimen as plate 178, ventral view

PLATE 180

Parthenope (*Platylambrus*) *serrata*, male (18675), carapace 18.6 mm. long, dorsal view

PLATE 181

Parthenope (*Platylambrus*) *serrata*, same specimen as plate 180, ventral view

PLATE 182

Parthenope (*Platylambrus*) *pourtalesii*, male (48883), carapace 36.2 mm. long, dorsal view

PLATE 183

Parthenope (*Platylambrus*) *pourtalesii*, same specimen as plate 182, ventral view

PLATE 184

Parthenope (*Platylambrus*) *exilipes*, female (20599), carapace 27.4 mm. long, dorsal view

PLATE 185

Parthenope (*Platylambrus*) *exilipes*, same specimen as plate 184, ventral view

PLATE 186

Parthenope (*Platylambrus*) *fraterculus*, male (15182), carapace 14.4 mm. long, dorsal view

PLATE 187

Parthenope (*Platylambrus*) *fraterculus*, same specimen as plate 186, ventral view

PLATE 188

Parthenope (*Platylambrus*) *depressiuscula*, female (17866), carapace 26.7 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 189

Parthenope (*Pseudolambrus*) *excavata*, female (3270), carapace 32.3 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 190

FIG. 1. *Parthenope* (*Platylambrus*) *guerini*, (45.7*a* Brit. Mus.), type of *Lambrus crenatus* White, dorsal view. Photographed by the British Museum.
2. *Parthenope* (*Platylambrus*) *fraterculus*, female (46043), carapace 12.2 mm. long, dorsal view.

PLATE 191

Parthenope (*Platylambrus*) *guerini*, female (55783), carapace 31.4 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 192

Solenolambrus typicus, male (48885), carapace 11.7 mm. long

FIG. 1. Front view.
2. Dorsal view.
3. Ventral view.

PLATE 193

Solenolambrus typicus, male (18438), carapace 10 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 194

FIG. 1. *Solenolambrus decemspinosus*, male (18157), carapace 6 mm. long, dorsal view.
2. Same, ventral view.
3. *Solenolambrus tenellus*, male (18678), carapace 5.6 mm. long, dorsal view.
4. Same, ventral view.
5. *Solenolambrus portoricensis*, male (24237), carapace 7.3 mm. long, dorsal view.
6. Same, ventral view.

PLATE 195

Aethra scruposa scutata, male, Mazatlan, carapace 60 mm. long. After A. Milne Edwards

FIG. 1. Chela.
2. Outer maxilliped.
3. First leg.
4. Antennal region.
5. Fourth leg.
6. Entire animal, dorsal view.

PLATE 196

Thyrolambrus astroides, male (18160), carapace 18 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 197

Thyrolambrus erosus, male (21577), carapace 14.4 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 198

Leiolambrus punctatissimus, male (18180), carapace 13 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 199

Leiolambrus nitidus, male (23776), carapace 6.4 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 200

Mesorhoea sexspinosa, male (49202), carapace 6.8 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 201

Mesorhoea bellii, female (17370), carapace 15.5 mm. long

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 202

FIG. 1. *Cryptopodia hassleri*, male holotype, carapace 6.3 mm. long, ventral view.
2. Same, dorsal view. Figures 1 and 2 photographed by George Nelson, Museum of Comparative Zoölogy.
3. *Cryptopodia concava*, female (49201), carapace 9 mm. long, dorsal view.
4. Same, ventral view.
5. *Halicarcinus planatus*, female (22117), carapace 9.5 mm. long, dorsal view.

PLATE 203

FIG. 1. *Heterocrypta granulata*, male (5159), carapace 13.2 mm. long, ventral view.
2. Same, dorsal view.
3. *Heterocrypta macrobrachia*, male (21973), carapace 14 mm. long, dorsal view.
4. Same, ventral view.

PLATE 204

Heterocrypta occidentalis, male (48905), carapace 19.4 mm. long, dorsal view

PLATE 205

Heterocrypta occidentalis, same specimen as plate 204, ventral view

PLATE 206

Anomalothir furcillatus, male, Samboes, carapace 13.6 mm. long. After A. Milne Edwards

FIG. 1. Dorsal view.
2. Antennal region, ventral view.
3. Carapace in profile.
4. Abdomen.
5. Outer maxilliped.

PLATE 207

Anomalothir frontalis, male, Barbados, carapace 13.6 mm. long. After A. Milne Edwards.

FIG. 1. Dorsal view.
2. Antennal region, ventral view.
3. Carapace in profile.
4. Chela, outer view.
5. Sternum and abdomen.

PLATE 208

FIG. 1. *Podochela grossipes*, male, St. Thomas, carapace 13.5 mm. long, dorsal view. After Stimpson.
2. *Podochela riisei*, female, St. Thomas, carapace 18 mm. long, dorsal view. After Stimpson.

PLATE 209

FIG. 1. *Podochela margaritaria*, male holotype, carapace 15 mm. long, dorsal view. After Rathbun.
2. *Podochela hemphillii*, male (21862), carapace 24.1 mm. long, dorsal view. After Rathbun.

PLATE 210

Podochela curvirostris, male, Barbados, carapace 29 mm. long. After A. Milne Edwards

FIG. 1. Dorsal view.
2. Antennal region, ventral view.
3. Carapace in profile.
4. Sternum and abdomen.

PLATE 211

Anasimus fugax, male, Antilles, carapace 14.4 mm. long. After A. Milne Edwards

FIG. 1. Dorsal view.
2. Antennal region, ventral view.
3. Carapace in profile.
4. Outer maxilliped.

PLATE 212

Erileptus spinosus, male (17341), carapace 8.3 mm. long, dorsal view. After Rathbun

PLATE 213

Erileptus spinosus, female (17340), type of *Anasimus rostratus*, carapace 7.5 mm long, dorsal view. After Rathbun

PLATE 214

Anasimus latus, male holotype, carapace 25.5 mm. long. After Rathbun

FIG. 1. Dorsal view.
2. Outer maxilliped.
3. Ventral view of body.
4. Carapace in profile.

PLATE 215

Eurypodius latreillii. After Targioni Tozzetti. The two forms which he called *latreillii* and *audouini* are here combined

FIG. 1. Cheliped (*latreillii*).
2. Leg (*audouini*).
3. Second leg (*audouini*).
4. Third leg (*audouini*).
5. Cheliped (*audouini*).
6. Outer maxilliped (*audouini*).
7. Second maxilliped (*audouini*).
8. Abdomen of female (*latreillii*).
9. Anterior portion, ventral view (*audouini*).
10. Carapace (*audouini*).
11. Dactyl, upper view (*latreillii*).
12. First maxilliped (*audouini*).
13. Anterior portion, ventral view (*latreillii*).
14. Second maxilliped (*latreillii*).
15. First maxilliped (*latreillii*).

PLATE 216

Euprognatha rastellifera marthae, male, station 922, *Fish Hawk*, carapace about 14 mm. long. After Smith

FIG. 1 Dorsal view.
2. Carapace in profile.

PLATE 217

FIG. 1. *Collodes granosus*, female holotype, carapace 9.1 mm. long, dorsal view. After Stimpson.
2. *Collodes obesus*, female, Florida Strait, carapace 14.2 mm. long, anterior part, ventral view.
3. Same, left chela.
4. Same, dorsal view.
5. Carapace of same, in profile.
Figures 2 to 5, after A. Milne Edwards.
6. *Collodes armatus*, female holotype, carapace 9 mm. long, dorsal view. After Rathbun.

PLATE 218

FIG. 1. *Pyromaia tuberculata*, male (17350), carapace 14.6 mm. long, in profile.
2. Same, dorsal view.
3. Body of same, ventral view.
4. Outer maxilliped.
Figures 1 to 4, after Rathbun.
5. *Collodes tumidus*, male (21571), carapace 11.6 mm. long, dorsal view. After Rathbun.

PLATE 219

FIG. 1. *Aepinus septemspinosus*, male, Florida Strait, carapace 11 mm. long, sternum and abdomen.
2. Carapace, in profile.
3. Dorsal view.
4. *Arachnopsis filipes*, male, Florida Strait, carapace 6.6 mm. long, in profile.
5. Dorsal view.

Figures 1 to 5, after A. Milne Edwards.

6. *Eucinetops rubellula*, male holotype, total length of carapace 8 mm., dorsal view. After Stimpson.

PLATE 220

FIG. 1. *Epialtus brasiliensis*, male, Rio de Janeiro, carapace about 14 mm. long, dorsal view. After Dana.
2. *Taliepus marginatus*, young female, Rio de Janeiro, slightly reduced, dorsal view. After Bell.

PLATE 221

Taliepus marginatus, male, Valparaiso, carapace 102 mm. long, dorsal view. After Bell

PLATE 222

FIG. 1. *Acanthonyx petiverii*, male, Guadeloupe, about natural size, dorsal view.
2. Anterior half, ventral view.
3. Chela.
4. End of first ambulatory leg.
5. End of third ambulatory leg.
6. End of fourth ambulatory leg.

Figures 1 to 6, after A. Milne Edwards.

7. *Leucippa pentagona*, male, Rio de Janeiro, carapace 9 mm. long to end of rostrum, dorsal view.
8. Anterior portion, ventral view.
9. Part of cheliped.

Figures 7 to 9, after Dana.

10. *Esopus crassus*, female holotype, carapace 13 mm. long, dorsal view.
11. Same, anterior part, ventral view.
12. Carapace in profile.

Figures 10 to 12, after A. Milne Edwards.

PLATE 223

FIG. 1. *Sphenocarcinus agassizi*, male, Panama, total length of carapace 39 mm., dorsal view.
2. Anterior part, ventral view.

Figures 1 and 2, after Faxon.

3. *Sphenocarcinus corrosus*, female, Barbados, carapace 16 mm. long, dorsal view.
4. Carapace, in profile.
5. Anterior part, ventral view.

Figures 3 to 5, after A. Milne Edwards.

PLATE 224

After Dana

FIG. 1. *Chorilia longipes*, female, carapace 42 mm. long, dorsal view.
2. Frontal region of same, in profile.
3. Anterior half of same, ventral view.
4. *Scyra acutifrons*, male, Oregon, total length of carapace 28 mm., dorsal view.
5. Anterior half of same, ventral view.

PLATE 225

Chorilia longipes turgida, male (15500), carapace 69.8 mm. long, dorsal view. After Rathbun

PLATE 226

Rochinia crassa, after Smith

FIG. 1. Male, *Blake* station 319, total length of carapace 35.2 mm., dorsal view.
2. Female (5693), total length of carapace 71 mm., dorsal view.
3. Anterior half of same, ventral view.

PLATE 227

FIG. 1. *Rochinia tanneri*, male, cotype, *Fish Hawk* station 1043, total length of carapace 28 mm., dorsal view. After Smith.
2. *Rochinia cornuta*, male (21572), carapace 35.9 mm. long from posterior margin to end of rostrum, dorsal view. After Rathbun.

PLATE 228

Rochinia occidentalis, male (4404, M. C. Z.), median length of carapace 45 mm., dorsal view. After Faxon

PLATE 229

FIG. 1. *Rochinia gracilipes*, male, Cape Corrientes, carapace 23 mm. long, anterior half, ventral view.
2. Same, dorsal view of entire specimen.
3. Carapace of same, in profile.
4. Chela.
Figures 1 to 4, after A. Milne Edwards.
5. *Rochinia occidentalis*, male (4404, M. C. Z.), median length of carapace 45 mm., ventral view. After Faxon.

PLATE 230

Rochinia vesicularis, male, holotype, total length of carapace 20.7 mm. After Rathbun

FIG. 1. Dorsal view.
2. Anterior portion, ventral view.

PLATE 231

FIG. 1. *Libidoclaea granaria*, male, E. Patagonia, total length of carapace 60 mm., abdomen.
2. Same, anterior part, ventral view.
Figures 1 and 2, after Dana.

FIG. 3. *Libidoclaea smithii*, male, Chile, carapace nearly 26 mm. long, anterior part, ventral view. After Miers.
4. *Libidoclaea granaria*, male holotype, Valparaiso, carapace 67 mm. long, anterior part in profile.
5. Same, outer maxilliped.
6. Same, anterior part, ventral view.

Figures 4 to 6, after Milne Edwards and Lucas.

PLATE 232

FIG. 1. *Oplopisa spinipes*, female, Florida Strait, carapace including rostrum, 12.5 mm. long, anterior part, ventral view.
2. Same, dorsal view.
3. *Trachymaia cornuta*, male (2763, M. C. Z.), carapace 12 mm. long, seen in profile.
4. Same, anterior part, ventral view.
5. Same, dorsal view.

Figures 1 to 5, after A. Milne Edwards.

6. *Leurocyclus tuberculosus*, male type, carapace 52 mm. long, anterior part, ventral view.
7. Same, mouth parts.
8. Same, outer maxilliped.
9. Same, chela.
10. Same, merus of outer maxilliped.
11. Same, antennal region.

Figures 6 to 11, after Milne Edwards and Lucas.

PLATE 233

Leurocyclus tuberculosus, male type, carapace 52 mm. long. After Milne Edwards and Lucas

FIG. 1. Dorsal view.
2. Sternum.

PLATE 234

Chionoecetes tanneri, male holotype, carapace 119 mm. long to base of horns, dorsal view. After Rathbun

PLATE 235

Hyas lyratus, male (15922), total length of carapace 85 mm., dorsal view. After Rathbun

PLATE 236

Pisoides edwardsii

FIG. 1. Specimen from Valparaiso, antennal and orbital region, ventral view.
2. Same, outer maxilliped.

Figures 1 and 2, after Dana.

3. Cotype, 23 mm. long, dorsal view.
4. Same, rostrum and orbits, viewed obliquely.
5. Same, antennal and orbital region, ventral view.
6. Same, outer maxilliped.
7. Same, dactylus of an ambulatory leg.

Figures 3 to 7, after Milne Edwards and Lucas.

PLATE 237

Notolopas brasiliensis, male (16315), carapace 13 mm. long on median line, dorsal view. After Rathbun

PLATE 238

After Miers

FIG. 1. *Notolopas lamellatus*, male (Brit. Mus.), anterior portion, ventral view, × 5.5.
2. *Notolopas brasiliensis*, male holotype, carapace 10 mm. long on median line, abdomen.
3. *Notolopas brasiliensis*, variety with horns more divergent, male, carapace 16 mm. long on median line, anterior portion, ventral view.
4. *Notolopas brasiliensis*, male holotype, carapace 10 mm. long on median line, dorsal view.

PLATE 239

Nibilia antilocapra, male, Guadeloupe, total length of carapace 102 mm., dorsal view. After A. Milne Edwards

PLATE 240

FIG. 1. *Herbstia edwardsii*, male, Galapagos, total length of carapace about 17 mm., anterior portion, ventral view.
2. Same, abdomen.
3. Same, dorsal view.
4. *Herbstia edwardsii*, female, Galapagos, abdomen, enlarged.
5. *Herbstia pyriformis*, male, Galapagos, carapace about 20 mm. long, anterior part, ventral view.
6. Same, cheliped.
7. Same, abdomen.
8. Same, dorsal view of entire animal.
Figures 1 to 8, after Bell.
9. *Herbstia camptacantha*, male, Acapulco, carapace 16.5 mm. long, anterior part, ventral view.
10. Same, carapace in profile.
11. Same, abdomen.
12. Same, chela.
13. Same, entire animal, dorsal view.
Figures 9 to 13, after A. Milne Edwards.

PLATE 241

FIG. 1. *Pelia pulchella*, male, Galapagos, carapace 7 mm. long, anterior part, ventral view.
2. Same, abdomen.
3. Same, cheliped.
4. Same, entire animal, dorsal view.
Figures 1 to 4, after Bell.
5. *Micropisa violacea*, Cape Verde Islands, chela of well-developed male.
6. Same species, anterior part, ventral view.
7. Same species, sternum and abdomen of male.
8. Same species, dorsal view of entire animal, slightly enlarged.
Figures 5 to 8, after A. Milne Edwards.

PLATE 242

Libinia rostrata, male, Peru, total length about 71.5 mm., dorsal view. After Bell

PLATE 243

Libinia setosa, male (2300), total length of carapace 68 mm., dorsal view. After Rathbun

PLATE 244

After Rathbun

FIG. 1. *Libinia mexicana*, young male (16072), median length of carapace 10 mm., dorsal view.
2. *Lepteces ornatus*, male (9546), total length of carapace 16.4 mm., dorsal view.

PLATE 245

FIG. 1. *Libinia rhomboidea*, male, Cuba, total length of carapace about 82 mm., outer maxilliped.
2. Same, anterior portion, ventral view.
3. Same, abdomen.

Figures 1–3, after A. Milne Edwards.

4. *Libinia ferreirae*, carapace 68 mm. long, dorsal view.
5. Same, anterior portion, ventral view.

Figures 4 and 5, after Brito Capello.

6. *Holoplites armata*, male, Antilles, total length of carapace 25 mm., anterior part, ventral view.
7. Same, abdomen.
8. Same, entire animal, dorsal view.

Figures 6–8, after A. Milne Edwards.

PLATE 246

FIG. 1. *Lissa tuberosa*, male (21574), carápace 16.9 mm. long, dorsal view. After Rathbun.
2. *Lissa aurivilliusi*, male (21575), carapace 12.5 mm. long, dorsal view. After Rathbun.
3. *Chorinus heros*, male, total length of carapace 64 mm., dorsal view.
4. Same, anterior portion, ventral view.
5. Same, maxilliped.

Figures 3–5, after H. Milne Edwards.

PLATE 247

Maiopsis panamensis, male holotype, length of carapace exclusive of rostrum 112 mm. After Faxon

FIG. 1. Dorsal view.
2. Anterior portion, ventral view.
3. Sternum and abdomen.
4. Fingers.

PLATE 248

After A. Milne Edwards

FIG. 1. *Thersandrus compressus*, male, Guadeloupe, carapace 23 mm. long, ventral view.
2. Same, anterior half, ventral view.
3. Same, dorsal view.
4. Same, first leg.
5. Same, fourth leg.
6. Same, abdomen.
7. Same, carapace in profile.
8. Same, carpus and chela.
9. *Hemus cristulipes*, male, Contoy, carapace 6 mm. long, anterior portion, ventral view.
10. Same, carapace in profile.
11. Same, outer maxilliped.
12. Same, second leg.
13. Same, outer antenna.
14. Same, dorsal view of entire animal.
15. Same, posterior view of carapace.

PLATE 249

FIG. 1. *Thoe erosa*, Galapagos, anterior portion, ventral view.
2. Same, posterior view of carapace and abdomen.
3. Same, male, carapace 15 mm. long, dorsal view of entire animal.
4. Same, abdomen.
5. Same species, abdomen of female.
6. Same species, cheliped of male.
Figures 1–6, after Bell.
7. *Temnonotus granulosus*, female (1937, M. C. Z.), median length of carapace 23 mm., in profile.
8. Same, entire animal, dorsal view.
9. Same, anterior portion, ventral view.
10. *Temnonotus simplex*, male (1938, M. C. Z.), median length of carapace 12 mm., in profile.
11. Same, entire animal, dorsal view.
12. Same, anterior portion, ventral view.
Figures 7–12, after A. Milne Edwards.

PLATE 250

FIG. 1. *Pitho quinquedentata*, male, Galapagos, carapace 17 mm. long, dorsal view.
2. Same, chela.
3. Same, anterior part, ventral view.
Figures 1 to 3, after A. Milne Edwards.
4. *Pitho quinquedentata*, female, type, carapace about 13 mm. long, dorsal view. After Bell.
5. *Pitho sexdentata*, female, type, carapace about 20 mm. wide, abdomen
6. Same, antennule.
7. Same, cheliped.
8. Same, dorsal view of entire animal.
9. Same, anterior part, ventral view.
Figures 5 to 9, after Bell.

FIG. 10. *Pitho quadridentata*, cotype, carapace 29.4 mm. wide, dorsal view. After Miers.
11. *Pitho laevigata*, male type,c arapace 40 mm. wide, anterior part, ventral view.
12. Same, abdomen.
13. Same, dorsal view of carapace.
Figures 11 to 13, after A. Milne Edwards.

PLATE 251

After Rathbun

FIG. 1. *Pitho aculeata*, male (14054), carapace 24.3 mm. wide, dorsal view.
2. *Pitho anisodon*, male (15093), carapace 28.7 mm. wide, dorsal view.

PLATE 252

After Rathbun

FIG. 1. *Pitho picteti*, young female (15822), carapace 8.5 mm. wide, dorsal view.
2. *Pitho lherminieri*, male (3158), type of *Othonia carolinensis*, carapace 14 mm. wide, dorsal view.

PLATE 253

After Rathbun

FIG. 1. *Pitho mirabilis*, female (15807), carapace 17.5 mm. wide, dorsal view.
2. *Leptopisa setirostris*, male (6929), total length of carapace 22 mm., dorsal view.

PLATE 254

FIG. 1. *Anaptychus cornutus*, male, holotype, length of carapace 25.4 mm., dorsal view. After Stimpson.
2. *Picrocerοides tubularis*, male, type, median length of carapace about 16 mm., dorsal view.
3. Same, anterior part, ventral view.
4. Same, chela and carpus.
5. Same, carapace in profile.
Figures 2 to 5, after Miers.

PLATE 255

After Bell

FIG. 1. *Mithrax rostratus*, male, type, total length of carapace 56 mm., dorsal view.
2. Same, abdomen.
3. Same species, abdomen of female.

PLATE 256

Mithrax cornutus, male, Martinique, total length of carapace 92 mm. After A. Milne Edwards

FIG. 1. Dorsal view.
2. Anterior part, ventral view.

PLATE 257

After Rathbun

FIG. 1. *Mithrax acuticornis*, male (15817), total length of carapace 15 mm. dorsal view.
2. *Mithrax holderi*, female (25567), total length of carapace 27 mm., dorsal view.

PLATE 258

Mithrax pilosus, male (16299), total length of carapace 28 mm., dorsal view. After Rathbun

PLATE 259

After Rathbun

FIG. 1. *Mithrax bahamensis*, male (42513), carapace 16.4 mm. wide, dorsal view.
2. *Mithrax hemphilli*, female (15823), total length of carapace 17.2 mm., dorsal view.

PLATE 260

Mithrax sinensis, young male (16065), total length of carapace 9.2 mm., dorsal view

PLATE 261

Mithrax laevimanus, male, Guadeloupe, length of carapace 65 mm. After A. Milne Edwards

FIG. 1. Dorsal view.
2. Anterior part, ventral view.
3. Abdomen.

PLATE 262

FIG. 1. *Mithrax pygmaeus*, male holotype, length of carapace about 7 mm., dorsal view.
2. Same, abdomen.
3. Same, cheliped.
4. Same, anterior part, ventral view.
Figures 1 to 4, after Bell.
5. *Mithrax spinipes*, male, Galapagos, anterior portion, ventral view. After Bell.
6. *Mithrax armatus*, female, type, total length of carapace 47.3 mm., dorsal view. After Saussure.
7. *Teleophrys cristulipes*, male, type, carapace 7.6 mm. long, dorsal view. After Stimpson.
8. *Teleophrys ornatus*, young male, Fernando Noronha, carapace about 5 mm. long, carpus and chela.
9. Same, entire animal, dorsal view.
Figures 8 and 9, after Miers.

PLATE 263

Coelocerus spinosus, female, type of *C. grandis*, length of carapace exclusive of rostrum 98 mm., dorsal view. After Rathbun

PLATE 264

FIG. 1. *Coei cerus spinosus*, young male, type (1989, M. C. Z.), carapace 23 mm. long, anterior part, ventral view.
2. Same, dorsal view of entire animal.
Figures 1 and 2, after A. Milne Edwards.
3. *Stenocionops spinosissima*, female, Guadeloupe, carapace 61 mm. long, dorsal view. After Saussure.
4. Same species, male, Rio de Janeiro, total length of carapace 135 mm., anterior part, ventral view. After Moreira.
5. *Stenocionops ovata*, female, Galapagos, total length of carapace 25.4 mm., dorsal view.
6. Same, outer maxilliped.
7. Same, anterior part, ventral view.
Figures 5 to 7, after Bell.

PLATE 265

Stenocionops spinosissima, male, Rio de Janeiro, total length of carapace 97 mm., dorsal view. After Moreira

PLATE 266

After Rathbun

FIG. 1. *Stenocionops triangulata*, young female, holotype, total length of carapace 18.7 mm., dorsal view.
2. *Stenocionops contigua*, young female (16067), total length of carapace 28 mm., dorsal view.

PLATE 267

Stenocionops spinimana, male holotype, total length of carapace 89 mm., dorsal view. After Rathbun

PLATE 268

Stenocionops macdonaldi, male holotype, total length of carapace 88 mm., dorsal view. After Rathbun

PLATE 269

FIG. 1. *Macrocoeloma diplacanthum*, female, Guadeloupe, total length of carapace about 32 mm., ventral view.
2. Same species, male, Guadeloupe, total length of carapace about 44 mm., dorsal view.
3. Same species, male, Guadeloupe, total length of carapace 39 mm., ventral view.
Figures 1 to 3, after Desbonne and Schramm.
4. *Macrococloma villosum*, male, Guayaquil, carapace about 43 mm. long. dorsal view.
5. Same species, abdomen of female.
6. Same species, abdomen of male.
7. Same species, anterior part, ventral view.
8. *Macrocoeloma heptacanthum*, male, Puerto Portrero, carapace about 37 mm. long, dorsal view.
9. Same species, abdomen of female.
10. Same species, abdomen of male.
11. Same species, anterior part, ventral view.
Figures 4 to 11, after Bell.

PLATE 270

After Rathbun

FIG. 1. *Microphrys branchialis*, male (21576), total length of carapace 15.3 mm., dorsal view.
2. *Macrocoeloma camptocerum*, male (15141), total length of carapace 35 mm., dorsal view.

PLATE 271

FIG. 1. *Microphrys aculeatus*, female, Galapagos, carapace about 20 mm. long, dorsal view. After Bell.
2. *Microphrys weddelli*, female, carapace about 34 mm. long, posterior view.
3. Same, anterior part, ventral view.
4. Same. entire animal, dorsal view.
5. Same, outer maxilliped.

Figures 2 to 5, after A. Milne Edwards.

6. *Microphrys weddelli*, male type, ventral view of body.
7. Same, dorsal view of entire animal.

Figures 6 and 7, after H. Milne Edwards.

PLATE 272

Tyche emarginata, female, Guadeloupe, carapace about 25 mm. long. After Desbonne and Schramm

FIG. 1. Dorsal view.
2. Ventral view.

PLATE 273

FIG. 1. *Tyche lamellifrons*, male, Panama, carapace about 18 mm. long, anterior part, ventral view.
2. Same, entire animal, dorsal view.
3. Same, antennule.
4. Same, outer maxilliped.
5. Same, abdomen.
6. Same, cheliped.

Figures 1 to 6, after Bell.

7. *Tyche emarginata*, female, Guadeloupe, total length of carapace 35 mm., ventral view.
8. Same, outer maxilliped.
9. Same, carapace in profile.
10. Same, anterior part, ventral view.
11. Same, dorsal view of entire animal.
12. Same, chela.

Figures 7 to 12, after A. Milne Edwards.

PLATE 274

After Bell

FIG. 1. *Dasygyius gibbosus*, male holotype, Galapagos, carapace, 15.2 mm. long, abdomen.
2. Same, cheliped.
3. Same, antenna.
4. Dorsal view of entire animal.
5. *Dasygyius depressus*, female holotype, Galapagos, carapace 15.2 mm., long, abdomen.
6. Anterior portion, ventral view.
7. Cheliped.
8. Dorsal view of entire animal.

PLATE 275

After A. Milne Edwards

FIG. 1. *Parthenope agonus*, male, Florida Strait, carapace 12 mm. long, dorsal view.
2. Same, chela.
3. Same, anterior part, ventral view.
4. *Parthenope hyponca*, female, Mazatlan, carapace 29 mm. long, dorsal view.
5. Same, chela.
6. Same, anterior part, ventral view.
7. *Parthenope (Platylambrus) serrata*, male, Vera Cruz, carapace 24 mm. long, chela.
8. Same, abdomen.
9. Same, anterior portion, ventral view.
10. Same, entire animal, dorsal view.

PLATE 276

Parthenope (Platylambrus) pourtalesii, female (7308), carapace 32.8 mm. long, dorsal view. After Smith

PLATE 277

FIG. 1. *Parthenope (Platylambrus) exilipes*, male (4481, M. C. Z.), ventral view.
2. Same species, female (20599), length of carapace 27.4 mm., dorsal view.
Figures 1 and 2, after Faxon.
3. *Tutankhamen cristatipes*, male, St. Vincent, carapace 14 mm. long, dorsal view.
4. Same, anterior part, ventral view.
5. Same, outer maxilliped.
Figures 3 to 5, after A. Milne Edwards.

PLATE 278

FIG. 1. *Parthenope (Pseudolambrus) triangula*, male, Cape St. Lucas, carapace 12 mm. long, chela, outer view.
2. Same, chela, inner view.
3. Same, dorsal view of entire animal.
Figures 1 to 3, after A. Milne Edwards.
4. *Parthenope (Platylambrus) guerini*, male, type, carapace 36 mm. long, dorsal view. After Brito Capello.

PLATE 279

After A. Milne Edwards

FIG. 1. *Solenolambrus typicus*, male, Florida Strait, carapace 8.5 mm. long, in profile.
2. Same, chela.
3. Same, anterior portion, ventral view.
4. Same, entire animal, dorsal view.
5. *Solenolambrus tenellus*, male, Barbados, carapace 6 mm. long, anterior portion, ventral view.
6. Same, chela.
7. Same, abdomen.
8. Same, entire animal, dorsal view.
9. Same, outer maxilliped.

PLATE 280

FIG. 1. *Mesorhoea bellii*, Mexico, carapace 13 mm. long, anterior part, ventral view. (The palps of the maxillipeds should not show.)
2. Same, chela and carpus.
3. Same, carapace in profile.
4. Same, entire animal, dorsal view.

Figures 1 to 4, after A. Milne Edwards.

5. *Thyrolambrus astroides*, female, Andaman Sea, carapace about 18 mm. long, anterior part, ventral view.
6. Same, entire animal, dorsal view.

Figures 5 and 6, after Alcock.

PLATE 281

After Rathbun

FIG. 1. *Leiolambrus nitidus*, male (23776), carapace 6.4 mm. long, dorsal view.
2. *Thyrolambrus erosus*, female (21577), carapace 18.4 mm. long, dorsal view.

PLATE 282

After A. Milne Edwards

FIG. 1. *Heterocrypta granulata*, Charleston, carapace 8.3 mm. long, male abdomen.
2. Same species and locality, anterior part, ventral view.
3. Same, entire animal, dorsal view.
4. *Heterocrypta macrobrachia*, Panama, carapace 10.8 mm. long, entire animal, dorsal view.
5. Same, anterior part, ventral view.
6. *Cryptopodia concava*, male, Florida, carapace 8.7 mm. long, dorsal view.
7. Same, ventral view.
8. Same, outer maxilliped.
9. *Cryptopodia concava*, female, Florida, carapace 10 mm. long, dorsal view.
10. Same, chela, outer view.
11. Same, entire animal, ventral view.

PLATE 283

Halicarcinus planatus

FIGS. 1–7. Specimen from Falkland Islands, carapace 7 mm. long. After Stebbing.
1. Rostrum.
2. Mandible.
3. Second maxilla.
4. First maxilliped.
5. Second maxilliped.
6. Third maxilliped.
7. Dactylus of an ambulatory leg, and end of same still more enlarged.

8. Abdomen of male (18209) ×5.

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