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LITTORAL BRACHYURAN FAUNA OF THE GALAPAGOS ARCHIPELAGO

(PLATES 49-87; 1 TEXT FIGURE)

by

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THE UNIVERSITY OF SOUTHERN CALIFORNIA
LOS ANGELES, CALIFORNIA
1946

REPORTS ON THE COLLECTIONS OBTAINED BY ALLAN HANCOCK PACIFIC EXPEDITIONS OF VELERO III OFF THE COAST OF MEXICO, CENTRAL AMERICA, SOUTH AMERICA, AND GALAPAGOS ISLANDS IN 1932, IN 1933, IN 1934, IN 1935, IN 1936, IN 1937, IN 1938, IN 1939, AND IN 1940.

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* Species not collected in the Galapagos by Hancock Expeditions, nor by any expedition in the last 115 years.

† Species not collected in the Galapagos by Hancock Expeditions, but collected by other recent expeditions.

LITTORAL BRACHYURAN FAUNA OF THE GALAPAGOS ARCHIPELAGO

(Plates 49-87; 1 Text Figure)

By JOHN S. GARTH
Research Associate
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INTRODUCTORY REMARKS

The present study is essentially a report on the brachyuran Crustacea obtained in the Galapagos Islands by the Allan Hancock Expeditions of 1932, 33, 34, 35, and 1938. However, *Velero III* collections were found to represent so large a proportion of the known insular fauna that the scope of the work has been expanded to include references to the remainder, albeit without descriptions or figures which would have had to be duplicated from other sources.

It was thought that by publishing several short papers containing descriptions of new species as rapidly as discovered the work could be kept current and tedious descriptive material could be avoided at this writing. However, it has been found necessary in the interest of taxonomic clarity to designate as new one species in addition to those included in Rathbun (1933, 1935), Garth (1939), and Glassell (1940). Supplementary descriptions are given of two species previously known from one sex only and of one species heretofore represented solely by immature specimens. Several species known previously from unique types are listed in numbers and from several localities within the islands. A total of 44 species, 32 genera, and 5 families of Brachyura are recorded for the first time from the Galapagos area. New information on range, habitat, depth, variation, and relationship is presented concerning the 102 species, 77 genera, and 15 families represented among the nearly 15,000 specimens obtained by *Velero III* collectors, which with the 18 species of 10 genera not encountered by Hancock Expeditions increases the known Galapagos brachyuran fauna to 120 species, 87 genera, and 15 families.

Excluded from the present paper and from the above compilation are larval forms and species which, because of the depths at which they were taken, belong in the abyssal rather than in the littoral benthos. The latter include *Rochinia cornuta* (Rathbun), *R. vesicularis* (Rathbun), and *R.*

occidentalis (Faxon), dredged in over 300 fathoms; *Trachycarcinus corallinus* Faxon, dredged in over 600 fathoms; and *Ethusina gracilipes* Miers, dredged in over 800 fathoms, all by the *Albatross* (Rathbun, 1898, 1907; Faxon, 1893, 1895).

It is intended that the study be used in connection with the Rathbun monographs (Grapsoid, 1918; Spider, 1925; Cancroid, 1930; and Oxystome, 1937), to which it is assumed each worker will take recourse for full descriptions of families, genera, and previously known species. However, the introduction of two genera new to the Americas in the writer's *New Brachyuran Crabs from the Galapagos Islands* (1939) calls for the inclusion of their descriptions, which occur in scattered or generally unavailable publications rather than in the above accessible works. Simplified keys to species, sufficient only to distinguish known Galapagos congeners one from another, are introduced whenever two or more species of a genus are represented in the insular fauna. Keys to genera are not given, since they would be nearly as extensive as the Rathbun keys and should, in the opinion of the writer, be reserved for similar monographic reports.

References to literature have of necessity been limited to the original description, the first use of the name in its current combination, and the citation placing the organism in the Galapagos fauna, if not included in the above two. In cases of involved synonymy, the reader is referred to the appropriate Rathbun monograph; citations of the occurrence of the species in the Eastern Pacific subsequent to the publication dates of the respective monographs are, however, given in full.

The inconvenience experienced by *Velero III* workers in attempting to use lengthy descriptions under field conditions has resulted in the substitution of brief diagnoses of the outstanding characters of each species as observable without microscopic examination. These, with the aid of the keys and illustrations given, should enable the field collector to identify his specimens quickly and accurately, a task in which he will be greatly assisted by Mr. Anker Petersen's notes on living specimens based on Ridgway, *Color Standards and Color Nomenclature* (1912).

Since the publication in the Rathbun monograph (1937) of the oxystomatous and allied crabs taken on the Hancock Expeditions of 1933-34, approximately one half of the specimens so recorded have been returned by the U. S. National Museum to the Allan Hancock Foundation, and it has been possible to list such specimens herein, as well as to enumerate for the first time the oxystomes obtained on the 1935 and 1938 cruises. Subsequent to the publication of this paper a similar division of the non-oxystomatous crabs will be worked out, approximately one half of the specimens of each species to be returned by the Allan Hancock Foundation

to the U. S. National Museum. For this reason it has not been possible to assign permanent catalogue numbers to the collection beyond the Oxystomata.

The major problem in any Galapagos brachyuran fauna is how best to treat the 17 species collected by Cuming *circa* 1829 and reported upon by Bell (1835-36) with types attributed to the Galapagos Islands. Few of these have been collected there since, while practically all of them have been turned up along the mainland coast of South America from Santa Elena Bay, Ecuador, to the Bay of Panama, localities also visited by Cuming. Ten of the 18 species herein recorded as occurring in Galapagos waters but as not having been obtained there by Allan Hancock Expeditions are Bell species which have not been found in the islands by any collector subsequent to Cuming, if indeed he found them there. Eight of the 10, however, have been obtained by *Velero III* collectors at mainland or other insular stations. Since the writer's unpublished distributional studies have shown that mainland species, whether Peruvian, Panamanian, or Gulf of Californian, may occur sporadically in the Galapagos Islands, it cannot be stated categorically that the 10 Bell species were not collected in the archipelago, or that they may not be found there again. For this reason they are included in the fauna, with emphasis upon the fact that they have not been taken in Galapagos waters for 115 years.

The same situation does not obtain in the case of the Miers and Milne Edwards species, *Leptodius cooksoni* and *Eriphia granulosa,* or Mier's Chilean records of Bell's species, *Mithrax (Mithrax) bellii* Gerstaecker (name substituted for *Mithrax ursus* Bell) and *Mithrax (Mithraculus) nodosus*. Here it is the early mainland record which lacks recent specimen authentication, the species in question being otherwise Galapagos endemics.

Six new species, one species not previously illustrated, one species not recognizable from the existing illustration, one species known only from the young, the adult of which is represented for the first time, and two species known only from the female, the males of which are represented for the first time, are illustrated in pen and ink drawings by Mr. Anker Petersen, staff artist, Allan Hancock Foundation. The remaining species obtained by Hancock or other recent expeditions in the Galapagos are illustrated photographically. It has not been thought best, however, to draw upon Hancock collections from the mainland for illustrations of Galapagos species not obtained in the islands, since photographs of these will undoubtedly be included in forthcoming accounts of collecting on continental shores.

The writer wishes to acknowledge his indebtedness to Captain Allan Hancock, master of the *Velero III* and director of the expeditions, for

the opportunity of visiting the Galapagos Islands and of studying the collections, to Dr. Waldo L. Schmitt, former curator of marine invertebrates, U. S. National Museum, for assistance both in the field and in the laboratory, to the late Dr. Mary J. Rathbun, associate in zoology, U. S. National Museum, for assistance in the early stages of the work, to Dr. Isabella Gordon of the British Museum, Dr. Fenner A. Chace of the Harvard Museum of Comparative Zoology, and Miss Jocelyn Crane of the New York Zoological Society for comparison of specimens with types not easily accessible to the writer and for the loan of valuable specimens, to Mr. Steve A. Glassell, research associate, San Diego Society of Natural History, for the loan of rare publications, and to Messrs. Fred C. Ziesenhenne, Granville P. Ashcraft, and Anker Petersen, staff members of the Allan Hancock Foundation, for help in collecting, cataloguing, and color noting, respectively, the multitude of individual specimens.

Tribe BRACHYURA
Subtribe GYMNOPLEURA
Family *RANINIDAE*
Genus **RANINOIDES** Milne Edwards, 1837
Raninoides ecuadorensis Rathbun

Plate 49, Figs. 1-5

Raninoides ecuadorensis Rathbun, Proc. Biol. Soc. Washington, vol. 48, p. 1, 1935; Bull. 166, U.S. Nat. Mus., p. 15, pl. 80, figs. 5-7, 1937.

Type locality.—La Plata Island, Ecuador.

Type.—USNM No. 69319.

Range.—Previously known only from the type locality. Unpublished data on the Hancock collections in the possession of the writer show it to be an abundant member of the Gulf of California fauna.

Diagnosis.—Carapace barrel shaped, anterior portion roughened. Outer orbital tooth almost as advanced as outer rostral tooth. Three long spines on lower border of manus. Dactyls of legs 1-3 crescentic, of leg 4 suboval.

Material examined.—

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 1 female (AHF no. 38001).

Measurements.—Male from the type series: length 20.1 mm, width 11.6 mm.

Color in life.—Ground color of carapace yellowish deep olive buff, entirely overcast with red, giving the appearance of light yellow orange.

Chelipeds and ambulatory legs lightly touched with red, appearing much lighter in color than the carapace. Eyes dark brown. Ventral side white. (Petersen) (Notes made from a Gulf of California specimen.)

Habitat.—Sand.

Depth.—35-55 fms.

Remarks.—Since this species was not taken by the earlier Allan Hancock Expeditions in the Galapagos Islands, it is not recorded in Rathbun (1937) as a member of the Galapagos fauna. The single female from Sulivan Bay, James Island, has been compared with the type series from La Plata Island, Ecuador, also dredged by *Velero III* collectors, and agrees in every particular.

R. ecuadorensis is now recorded from the Galapagos Islands. The specimen illustrated is, however, a paratype from La Plata Island, Ecuador.

Genus **RANILIA** Milne Edwards, 1837

Ranilia fornicata (Faxon)

Plate 60, Figs. 1, 2

Raninops fornicata Faxon, Bull. Mus. Comp. Zool., vol. 24, p. 162, 1893; Mem. Mus. Comp. Zool., vol. 18, p. 41, pl. 7, figs. 1, 1a, and 1b, 1895.

Ranilia fornicata Milne Edwards and Bouvier, Mem. Mus. Comp. Zool., vol. 47, p. 302, 1923. Rathbun, Bull. 166, U.S. Nat. Mus., p. 20, pl. 5, figs. 3 and 4, 1937.

Type locality.—*Albatross* station 3369.

Type.—MCZ No. 4506.

Range.—From Magdalena Bay, Lower California (Glassell), to La Plata Island, Ecuador *(Velero III);* Galapagos *(Velero III).*

Atlantic analogue.—*R. constricta* (A. Milne Edwards).

Diagnosis.—Carapace subcylindrical, punctate, narrowing abruptly forward of lateral angle. Rostral spine exceeding outer orbital. A terminal spine on merus and carpus of cheliped. Inner border of dactyl of leg 3 convex.

Material examined (24 specimens from 10 stations).—

147-34. Tagus Cove, Albemarle Island, 30 fms, Jan. 13, 1934, 1 male (USNM No. 69198).

183-34. James Bay, James Island, 50-70 fms, Jan. 24, 1934, 1 male (USNM No. 69341).

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 2 females (USNM No. 69201).

191-34. Lat. 0° 55′ S, Long. 90° 30′ W, 70 fms, Jan. 26, 1934, 3 females (USNM No. 69200), 2 females (AHF no. 34001).

195-34. North of Charles Island, 70-80 fms, Jan. 29, 1934, 1 female (AHF no. 34002).

325-35. Off Tagus Cove, Albemarle Island, 80 fms, Dec. 10, 1934, 1 male (AHF no. 35001).

327-35. Tagus Cove, Albemarle Island, 12 fms, Dec. 10, 1934, 1 male, 2 females (AHF no. 35002).

792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 1 female (AHF no. 38002).

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 1 male (photographed), 5 females, 2 fragments (AHF no. 38003).

816-38. North of Hood Island, 50-100 fms, Jan. 29, 1938, 1 male, 2 females (AHF no. 38004).

Measurements.—Largest specimen, male: length 12.6 mm, width 8.7 mm.

Color in life.—Ground color of carapace white, overcast with small patterns of various shades of pale dull yellow and striated with pale ochraceous orange. Eyestalks white, banded with ochraceous orange; eye apple green. Cheliped white with large spot of ochraceous orange at distal end of merus. Hand ochraceous orange, brighter on upper surface, fading on under side. First two ambulatory legs clear white, third and fourth with ochraceous orange along under side to dactyl, which is clear white. Ventral side clear white. (Petersen)

Habitat.—Sand, sand and mud, sand and nullipore; rock and sand; coral, nullipore, and rock.

Depth.—7-100 fms.

Remarks.—Judging from the number of Galapagos stations at which *R. fornicata* was taken, it, rather than the preceding *Raninoides ecuadorensis* Rathbun, is the abundant member of the family Raninidae in the archipelago. An excellent series of motion pictures, showing the manner in which this species buries itself in sand, is in the photographic library of the Allan Hancock Foundation.

The family Raninidae had not been recorded in the Galapagos Islands prior to the work of *Velero III* collectors.

Subtribe DROMIACEA
Family *DROMIIDAE*
Genus **DROMIDIA** Stimpson, 1858
Dromidia larraburei Rathbun

Plate 61, Figs. 1, 2

Dromidia sarraburei (by error) Rathbun, Proc. U.S. Nat. Mus., vol. 38, p. 553, pl. 48, fig. 4, 1910.

Dromidia larraburei Schmitt, Univ. California Publ. Zool., vol. 23, p. 183, pl. 33, fig. 1, 1921. Boone, Zoologica, vol. 8, no. 4, p. 285, fig. 102a, b, c, and d, 1927. Rathbun, Bull. 166, U.S. Nat. Mus., p. 35, pl. 7, figs. 4 and 5, text fig. 13, and synonymy, 1937. Crane, Zoologica, vol. 22, no. 7, p. 106, 1937.

Type locality.—Sechura Bay, Peru.

Type.—USNM No. 40475.

Range.—Monterey Bay, California (Weymouth), to Sechura Bay, Peru; Galapagos Islands *(Arcturus)*.

Atlantic analogue.—D. antillensis Stimpson.

Diagnosis.—Carapace convex, hairy, broader than long. Frontal and marginal teeth stout and blunt. A well-marked branchial groove, behind it an acute tooth. Palm studded with rounded tubercles. Carries a sponge cover.

Material examined (32 specimens from 22 stations).—

147-34. Tagus Cove, Albemarle Island, 30 fms, Jan. 13, 1934, 1 young (AHF no. 34003).

148-34. Tagus Cove, Albemarle Island, 12-15 fms, Jan. 13, 1934, 1 young (AHF no. 34004).

149-34. Tagus Cove, Albemarle Island, 20 fms, Jan. 13, 1934, 1 male, 1 female (AHF no. 34005).

152-34. Tagus Cove, Albemarle Island, coral, Jan. 14, 1934, 1 male, 1 ovig. female, 1 young (USNM No. 69240).

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 1 male (USNM No. 70769).

155-34. Off Tagus Cove, Albemarle Island, 50-60 fms, Jan. 15, 1934, 1 young (AHF no. 34006).

157-34. Tagus Cove, Albemarle Island, 10-18 fms, Jan. 15, 1934, 2 males (USNM No. 69620), 1 male, 1 soft shell (AHF no. 34007).

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 1 male (USNM No. 70771).

169-34. Academy Bay, Indefatigable Island, 15-25 fms, Jan. 20, 1934, 1 female (AHF no. 34008).

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 1 young (AHF no. 34009).

182-34. James Bay, James Island, 30 fms, Jan. 24, 1934, 1 young (USNM No. 69337).

183-34. James Bay, James Island, 50-70 fms, Jan. 24, 1934, 1 young (AHF no. 34010).

189-34. Cartago Bay, Albemarle Island, coral, Jan. 25, 1934, 1 ovig. female (AHF no. 34011).

197-34. Off Post Office Bay, Charles Island, 35-40 fms, Jan. 31, 1934, 1 female, 1 young (AHF no. 34012).

204-34. Gardner Bay, Hood Island, 30 fms, Jan. 31, 1934, 1 female (USNM No. 69242).

322-35. Tagus Cove, Albemarle Island, 10 fms, Dec. 10, 1934, 1 male, 1 young (AHF no. 35003).

326-35. Tagus Cove, Albemarle Island, 15 fms, Dec. 10, 1934, 1 young (USNM).

327-35. Tagus Cove, Albemarle Island, 12 fms, Dec. 10, 1934, 1 male (AHF no. 35004).

346-35. Between South Seymour and Daphne Islands, 55 fms, Dec. 13, 1934, 1 soft shell (AHF no. 35005).

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 2 males, 1 female (AHF no. 38005).

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 1 male (AHF no. 38006).

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 1 female (photographed), (AHF no. 38007).

Measurements.—Largest specimen, ovigerous female: length 21.8 mm, width 22.6 mm. This is one of the largest specimens of the species in Hancock collections.

Habitat.—A variety of bottoms, including sand and shell, coral, nullipore, and rock. *D. larraburei* was encountered also in shore collecting and even in *Pocillopora* coral.

Depth.—Shore to 60 fms.

Remarks.—*D. larraburei* is one of the few Galapagos brachyuran species occurring as far north as California waters. Rathbun (1937) records a specimen taken at Long Beach by H. N. Lowe, in territory familiar to the writer, as well as the Weymouth specimen from Monterey Bay. This dromid crab slips into and out of his sponge "house" with great facility.

Genus **HYPOCONCHA** Guerin, 1854

Hypoconcha panamensis Smith

Plate 61, Figs. 3, 4

Hypoconcha panamensis Smith, in Verrill, Amer. Nat., vol. 3, p. 249, 1869. Rathbun, Bull. 166, U.S. Nat. Mus., p. 47, pl. 9, figs. 6 and 7, and synonymy, 1937.

Type locality.—Panama.

Type.—In Peabody Mus., Yale.

Range.—From Angeles Bay, Gulf of California (Glassell), to Matapalo, Peru (Coker); Galapagos Islands *(Albatross).*

Atlantic analogue.—H. arcuata Stimpson.

Diagnosis.—Frontal and lateral margins expanded in a broad arc concealing eyes and antennules. Cardiac area paper thin. A distinct lobe at widest part of dorsum. Manus with 3 granulate tubercles near fingers. Last two pairs of legs prehensile.

Material examined (11 specimens from 7 stations).—

55-33. Lat. 1° 03′ 30″ S, Long. 90° 17′ 30″ W, 60 fms, Feb. 5, 1933, 1 female (USNM No. 68260).

147-34. Tagus Cove, Albemarle Island, 30 fms, Jan. 13, 1934, 1 female (USNM No. 69340), 2 males, 1 young (AHF no. 34013).

182-34. James Bay, James Island, 30 fms, Jan. 24, 1934, 1 female (USNM No. 69338).

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 1 young (USNM No. 69251), 1 young (AHF no. 34014).

200-34. Off Black Beach, Charles Island, 25-40 fms, Jan. 30, 1934, 1 male (USNM No. 69245).

810-38. (D-2) Barrington Island, 73 fms, Jan. 26, 1938, 1 male (photographed) (AHF no. 38008).

816-38. North of Hood Island, 50-100 fms, Jan. 29, 1938, 1 male (AHF no. 38009).

Measurements.—Largest specimen, female: length 33.5 mm, width 36.0 mm.

Habitat.—Sand, sand and nullipore; coral, nullipore, and rock.

Depth.—3-100 fms.

Remarks.—Unlike the preceding species, *Dromidia larraburei* Rathbun, *H. panamensis* carries a shell "house" instead of a sponge. The shells selected are not always of the same species, but are always the single valve of a bivalve shell, pectens and clams being favorites. In this way they differ from the hermit crabs of the tribe Anomura, which invariably select a univalve, or gastropod, shell for their temporary abode.

Family *DYNOMENIDAE*

Genus **DYNOMENE** Latreille, 1825

Dynomene ursula Stimpson

Plate 61, Figs. 5, 6

Dynomene ursula Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 239 (111), 1860. Rathbun, Bull. 166, U.S. Nat. Mus., p. 54, pl. 12, figs. 1-4, 1937. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 25, 1939.

Type locality.—Cape San Lucas, Lower California.

Type.—Not extant.

Range.—From Ensenada de los Muertos, Gulf of California (Glassell), to San Juan del Sur, Nicaragua (Lowe); Galapagos Islands *(Velero III)*.

Diagnosis.—Carapace densely hairy, *Pilumnus*-like. Front triangular, notched at tip. Five anterolateral spines, excluding outer orbital. First 3 legs setose, nails black; legs of pair 4 reduced, dorsal in position.

Material examined (199 specimens from 35 stations).—

24-33. Gardner Bay, Hood Island, shore, Jan. 24, 1933, 1 female (AHF no. 33001).

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 2 females (AHF no. 33002).

28-33. Gardner Bay, Hood Island, 2 fms, Jan. 25, 1933, 1 female (AHF no. 33003).

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 2 males, 3 females (USNM No. 68313).

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 6 males, 2 females (USNM No. 68314).

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 3 males, 1 female (AHF no. 33004).

48-33. Barrington Island, shore, Feb. 2, 1933, 1 female (USNM No. 68318).

65-33. Reef north of Tagus Hill, Albemarle Island, reef, Feb. 9, 1933, 1 male (USNM No. 68321).

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 12 males, 10 females (AHF no. 33005).

71-33. James Bay, James Island, shore, Feb. 12, 1933, 1 male, 1 female (USNM No. 68323).

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 10 males, 14 females (3 ovig.) (AHF no. 33006).

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 8 males, 9 females (3 ovig.) (USNM No. 68316).

94-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 1 male, 1 female (USNM No. 68324).

97-33. Darwin Bay, Tower Island, coral, Feb. 24, 1933, 1 male (AHF no. 33007).

148-34. Tagus Cove, Albemarle Island, 12-15 fms, Jan. 13, 1934, 1 female, 4 young (AHF no. 34015).

149-34. Tagus Cove, Albemarle Island, 20 fms, Jan. 13, 1934, 3 females (AHF no. 34016).

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 3 females (AHF no. 34017).

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 1 young female (AHF no. 34018).

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 1 young (AHF no. 34019).

182-34. James Bay, James Island, 30 fms, Jan. 24, 1934, 1 young (AHF no. 34020).

183-34. James Bay, James Island, 50-70 fms, Jan. 24, 1934, 1 young (AHF no. 34021).

189-34. Cartago Bay, Albemarle Island, coral, Jan. 25, 1934, 1 young female (AHF no. 34022).

194-34. Post Office Bay, Charles Island, coral from Onslow Island crater, Jan. 27, 1934, 1 female (AHF no. 34023).

199-34. Black Beach, Charles Island, shore, Jan. 30, 1934, 1 male (AHF no. 34024).

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 3 males (AHF no. 34025).

309-35. Marchena Island, 8 fms, Dec. 3, 1934, 1 young (AHF no. 35006).

311-35. Marchena Island, 20 fms, Dec. 3, 1934, 1 female (AHF no. 35007).

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 1 female, 1 young (AHF no. 35008).

317-35. Opposite Gordon Rocks, Indefatigable Island, 25-30 fms, Dec. 8, 1934, 1 young (AHF no. 35009).

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 1 male, 3 females (1 ovig.), 1 young (AHF no. 35010).

344-35. Bartholomew Island near James Island, coral, Dec. 12, 1934, 4 females (AHF no. 35011).

784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 3 males, 2 females (AHF no. 38010).

789-38. South Seymour Island, shore, Jan. 19, 1938, 4 females (2 ovig.) (AHF no. 38011).

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 28 males, (1 photographed), 24 females, 3 young (AHF no. 38012).

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 4 males, 4 females (AHF no. 38013).

Measurements.—Largest specimen, male: length 18.5 mm, width 23.2 mm; female: length 14.0 mm, width 17.8 mm.

Habitat.—Rocky shore; occasionally in *Pocillopora* coral.

Depth.—Shore to 30 fms; rarely to 70 fms.

Remarks.—With no other Galapagos species of Brachyura is the field collector so likely to be misled as to identity as with *D. ursula.* Unless he notices that the fourth pair of walking legs are reduced to minute size and carried dorsally, he will believe himself to have found a species of *Pilumnus.* In the preliminary sorting of the Hancock Brachyura, all *Dynomene* were placed with the Xanthidae and retained by the writer instead of being placed with the oxystome crabs consigned to the National Museum, and they had to be sent for later in order to be included in the Rathbun monograph of 1937.

In view of the fact that *D. ursula* is one of the very few oxystomatous and allied crabs taken commonly in shore collecting, it is surprising that it had not been collected in the Galapagos Islands previous to the Hancock Expeditions, which found it to outnumber such common nonoxystomatous species as *Herbstia edwardsi* Bell and *Ozius perlatus* Stimpson.

Subtribe OXYSTOMATA
Family *DORIPPIDAE*
Genus **ETHUSA** Roux, 1828
Ethusa lata Rathbun

Plate 60, Fig. 3

Ethusa lata Rathbun, Proc. U.S. Nat. Mus., vol. 16, p. 258, 1893; Bull. 166, U.S. Nat. Mus., p. 84, pl. 24, fig. 1, pl. 25, fig. 1, pl. 28, fig. 3, text fig. 19, and synonymy, 1937. Crane, Zoologica, vol. 22, no. 7, p. 105, 1937.

Type locality.—Gulf of California, 33 fms.

Type.—USNM No. 17483.

Range.—From 20 miles south of San Roque Island, Lower California (Glassell), to La Plata Island, Ecuador *(Velero III);* Galapagos Islands *(Velero III).*

Atlantic analogue.—*E. microphthalma* Smith.

Diagnosis.—First and second ambulatory legs stout, dactyls flattened, long as meri; last two pairs slight, dorsally placed, bearing hooked dactyli. Eyestalks very short, not extending beyond outer orbital spine. First 3 abdominal segments visible dorsally.

Material examined (13 specimens from 5 stations).—

147-34. Tagus Cove, Albemarle Island, 30 fms, Jan. 13, 1934, 1 young (USNM No. 69180).

201-34. Off Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 1 male (AHF no. 34026).

792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 6 young (AHF no. 38014).

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1 male, 1 fragment (AHF no. 38015).

816-38. North of Hood Island, 50-100 fms, Jan. 29, 1938, 3 young (1 photographed) (AHF no. 38016).

Measurements.—Largest specimen, male: length 12.3 mm, width 12.0 mm, cheliped 17.0 mm, chela 7.3 mm, dactyl 4.0 mm.

Habitat.—Sand and shell, sand and mud; coral, nullipore, and rock.

Depth.—2-100 fms.

Remarks.—*E. lata* is another species which carries a protective armor dorsally. In this case it is neither a sponge, as with the *Dromidias,* nor a clam shell, as with the *Hypoconchas,* but a particle of a shell no bigger than the carapace, which leaves the long, slender legs protruding instead of tucked underneath, as in the other two.

With the exception of *Ethusina gracilipes* Miers, dredged by the *Albatross* in depths of from 885 to 1,360 fathoms, far below the limits of the littoral zone, no member of the family Dorippidae was known to inhabit Galapagos waters prior to the dredging operations of the *Velero III.*

Genus **CLYTHROCERUS** A. Milne Edwards and Bouvier, 1899

Clythrocerus laminatus Rathbun

Plate 50, Figs. 1-7

Clythrocerus laminatus Rathbun, Proc. Biol. Soc. Washington, vol. 48, p. 2, 1935; Bull. 166, U.S. Nat. Mus., p. 115, pl. 80, figs. 1-4, 1937.

Type locality.—Wenman Island, Galapagos Islands, 100-150 fms.

Type.—USNM No. 69221.

Range.—Clarion Island, Mexico *(Velero III);* Galapagos Islands *(Velero III).*

Diagnosis.—Carapace wider than long. Frontal teeth broad, subacute; outer orbital tooth bluntly rounded. One lateral marginal tooth in front of widest part of carapace. Carpus of male bearing a large square plate on inner edge. Last two legs dorsal, prehensile; crab carries a bit of shell.

Material examined (48 specimens from 9 stations).—

143-34. Wenman Island, 100-150 fms, Jan. 11, 1934, 4 males, 2 females (USNM Nos. 69221 (the type), 69194, 69192, 69222, and 69193), 5 males, 2 females, 1 young (AHF no. 34027).

148-34. Tagus Cove, Albemarle Island, 12-15 fms, Jan. 13, 1934, 1 young (AHF no. 34028).

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 2 males (1 illustrated), 2 females (USNM No. 69185), 5 males (AHF no. 34029).

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 1 young (AHF no. 34030).

185-34. Cartago Bay, Albemarle Island, 32 fms, Jan. 25, 1934, 3 males, 3 females (USNM No. 69187), 8 females (1 illustrated in part) (AHF no. 34031).

187-34. Cartago Bay, Albemarle Island, 8-10 fms, Jan. 25, 1934, 3 females (AHF no. 34032).

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 1 male (AHF no. 34033).

201-34. Off Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 1 male, 3 females (AHF no. 34034).

323-35. Tagus Cove, Albemarle Island, 15 fms, Dec. 10, 1934, 1 female (AHF no. 35012).

Measurements.—Male: length 4.5 mm, width 5.0 mm; female: length 2.7 mm, width 3.3 mm.

Habitat.—Sand and rock, sand and coral, sand and nullipore; mud; coral, nullipore, and calcareous worm tubes.

Depth.—8-150 fms.

Remarks.—The range as given by Rathbun (1937), "Mexico to the Galapagos Islands," is very misleading, as it implies continuous distribution along the mainland shore. Actually, the only Mexican record is one of *Velero III* from Clarion Island, 600 miles off the Mexican coast. Obviously, we have here either a true Galapagos endemic species which has extended its range to Clarion Island, or a Clarion Island endemic species which has migrated to the Galapagos Islands. A parallel distribution is that of *Leptodius cooksoni* Miers. In neither case has the species established itself on continental shores.

No new records of the species were obtained on the Allan Hancock Expedition of 1938.

Family *LEUCOSIIDAE*

Subfamily EBALIINAE

Genus **EBALIA** Leach, 1817

Ebalia hancocki Rathbun

Plate 51, Figs. 1-6

Ebalia hancocki Rathbun, Proc. Biol. Soc. Washington, vol. 46, p. 183, 1933; Bull. 166, U.S. Nat. Mus., p. 128, pl. 36, figs. 6-8; pl. 82, figs. 1 and 2, 1937.

Type locality.—Charles Island, Galapagos Islands, 56 fms.

Type.—USNM No. 67988.

Range.—Braithwaite Bay, Socorro Island *(Velero III);* Galapagos Islands *(Velero III).*

Diagnosis.—Carapace broader than long, covered with large mushroom granules. Front divided into 2 blunt teeth. Hepatic and branchial regions elevated. A pterygostomian tooth. Posterior lobes broad and shallow. A triangular tooth on upper base of movable finger.

Material examined (44 specimens from 18 stations).—

55-33. Lat. 01° 03′ 33″ S, Long. 90° 17′ 30″ W, 60 fms, Feb. 5, 1933, 1 ovig. female (the type, USNM No. 67988).

147-34. Tagus Cove, Albemarle Island, 30 fms, Jan. 13, 1934, 1 male, 2 females (USNM No. 69278), 2 males, 2 females (1 illustrated in part) (AHF no. 33008).

148-34. Tagus Cove, Albemarle Island, 12-15 fms, Jan. 13, 1934, 1 male, 3 females (AHF no. 33009).

156-34. In channel off Tagus Cove, Albemarle Island, 80-100 fms, Jan. 15, 1934, 1 female (USNM No. 69744).

157-34. Tagus Cove, Albemarle Island, 10-18 fms, Jan. 15, 1934, 1 male, 3 ovig. females (USNM No. 67273).

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 2 ovig. females (AHF no. 34035).

171-34. East of Wreck Bay, Chatham Island, 35-40 fms, Jan. 21, 1934, 2 females (USNM No. 69277).

173-34. South Seymour Island, 5 fms, Jan. 22, 1934, 1 young female (AHF no. 34036).

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 2 females (AHF no. 34037).

183-34. Near Albany Island, James Island, 50-70 fms, Jan. 24, 1934, 1 male, 2 females (USNM No. 69275).

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 2 females (USNM No. 69760).

193-34. Post Office Bay, Charles Island, 8-10 fms, Jan. 27, 1934, 1 male (AHF no. 34038).

197-34. Off Post Office Bay, Charles Island, 35-40 fms, Jan. 31, 1934, 2 females (AHF no. 34039).

201-34. Off Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 1 male, 2 ovig. females (USNM No. 69281).

324-35. Tagus Cove, Albemarle Island, 45 fms, Dec. 10, 1934, 2 young (AHF no. 35013).

328-35. Tagus Cove, Albemarle Island, 14 fms, Dec. 10, 1934, 3 young males (AHF no. 35014).

792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 1 male (illustrated) (AHF no. 38017).

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 1 male, 2 young (AHF no. 38018).

Measurements.—Female holotype: length 7.2 mm, width 8.0 mm.

Color in life.—General appearance pinkish cinnamon with a great number of granules lightly colored with red and vermilion. Some granules a shade darker and a few very highly colored. Eye greenish black. Ventral side same as dorsal but lighter. (Petersen)

Habitat.—Sand and rock, sand and shell, sand and coral; rock; coral, nullipore, and rock.

Depth.—5-100 fms.

Remarks.—This is another instance of a species common to the Galapagos Islands and the Revilla Gigedo group, but not to the adjacent mainland. This time it is Socorro Island, which is nearer the Mexican mainland than Clarion, but still over 400 miles offshore. The remarks made for the preceding species, *Clythrocerus laminatus* Rathbun, apply here as well.

Genus **LITHADIA** Bell, 1855

Lithadia cumingii Bell

Plate 62, Fig. 1

Lithadia cumingii Bell, Trans. Linn. Soc. London, vol. 21, p. 305, pl. 33, figs. 6 and 7, 1855. Rathbun, Bull. 166, U.S. Nat. Mus., p. 136, pl. 38, figs. 1 and 2, 7-15, 1937. Crane, Zoologica, vol. 22, no. 7, p. 102, 1937.

Type locality.—Potrero, Costa Rica.

Type.—In Mus. Bell.

Range.—From Magdalena Bay, Lower California *(Albatross),* to La Plata Island, Ecuador *(Velero III);* Galapagos Islands *(Velero III).*

Atlantic analogue.—*L. granulosa* A. Milne Edwards.

Diagnosis.—Skull like in appearance. Carapace with deep hollows and upstanding ridges, especially in male. Rostrum produced, narrow, upturned, bilobate at tip. A hepatic lobe or tooth, a posterior branchial lobe, and an intestinal pair closely approximated. Hand carinate.

Material examined.—

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 1 male (photographed) (USNM No. 69418).

Measurements.—Young specimen, male: length 5.3 mm, width 5.4 mm.

Color in life.—Ground color of carapace olive buff. Granules of frontal and anterolateral portion reddish cadmium orange, those of other areas cadmium yellow to cadmium orange. Eye light yellowish olive. Chelipeds same as carapace but granules on merus and carpus reddish cadmium orange, on hand pale orange. Base of fingers light cadmium orange. Merus and carpus of ambulatory legs same as cheliped but a little more reddish; propodus and dactylus without color, very pale olive buff. Ventral side white. (Petersen)

Habitat.—Rock and sand.

Depth.—2-51 fms.

Remarks.—The single male recorded above appears to be the only Galapagos record for the species, which is common enough along the mainland coast from Lower California to Ecuador. *L. cumingii* is a variable species: not only is there considerable difference between the sexes in shape of carapace, but young specimens show sufficient differences from adults to raise the question as to whether or not more than one species might be present in a given series.

Genus **UHLIAS** Stimpson, 1871

Uhlias ellipticus Stimpson

Plate 60, Figs. 4, 5

Uhlias ellipticus Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 10, p. 117, 1871. Rathbun, Bull. 166, U.S. Nat. Mus., p. 149, pl. 36, figs. 1 and 2, 1937.

Type locality.—Panama.

Type.—Not extant.

Range.—From San Jose Island, Gulf of California (Glassell), to Panama (Stimpson); Galapagos Islands *(Velero III).*

Atlantic analogue.—*U. limbatus* Stimpson.

Diagnosis.—Carapace thick, broadly elliptical, the expanded margin concealing eyes and antennules. Carapace covered with deep, round or oval pits. Legs cristate; dactyls close against a process of the propodi.

Material examined (8 specimens from 5 stations).—

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 1 female (USNM No. 68261), 1 female (AHF no. 33010).

94-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 1 female (USNM No. 68259).

789-38. South Seymour Island, shore, Jan. 19, 1938, 2 males (1 photographed), 1 female (AHF no. 38019).

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 1 male (AHF no. 38020).

811-38. Barrington Island, shore, Jan. 26, 1938, 1 female (AHF no. 38021).

Measurements.—Male: length 5.4 mm, width 8.1 mm; female: length 5.6 mm, width 8.6 mm.

Color in life.—Pure white.

Habitat.—Rocky shore.

Depth.—Shore

Remarks.—A minute species, but positively identifiable in the field because of its pure white, elliptical, eroded carapace. *U. ellipticus* is one of the few oxystomatous crabs not dredged, and like *Dynomene ursula* Stimpson was not known in the Galapagos Islands prior to the advent of *Velero III* collectors.

Subfamily PHILYRINAE
Genus PERSEPHONA Leach, 1817
Persephona edwardsii Bell

Persephona edwardsii Bell, Trans. Linn. Soc. London, vol. 21, p. 294, pl. 31, fig. 8, 1855. Rathbun, Bull. 166, U.S. Nat. Mus., p. 154, pl. 45, figs. 3, 4, and synonymy, 1937.

Type locality.—Galapagos Islands.

Types.—In Mus. Bell.

Range.—From Panama (Stimpson) to Cape San Francisco, Ecuador *(Velero III);* Galapagos Islands (Bell).

Diagnosis.—Three posteriorly directed carapace spines; subhepatic spines wanting. Length and breadth of carapace subequal, a distinct lateral line of granules. Palm high, width equal to more than half of length.

Material examined.—None from Galapagos. Hancock collections contain specimens from Pt. Piaxtla, Mexico, to Cape San Francisco, Ecuador, the first an unpublished record.

Genus LEUCOSILIA Bell, 1855
Leucosilia jurinei (Saussure)

Guaia (Ilia) jurinei Saussure, Rev. Mag. Zool., no. 8, p. 65 (12), pl. 13, fig. 4-4b, 1853.

Leucosilia jurinii Bell, Trans. Linn. Soc. London, vol. 2, p. 295, pl. 32, fig. 1, 1855.

Leucosilia jurinei Rathbun, Proc. U.S. Nat. Mus., vol. 38, p. 552, pl. 45, fig. 1, 1910; Bull. 166, U.S. Nat. Mus., p. 170, pl. 48, figs. 1-8, and synonymy, 1937.

Type locality.—Mazatlan, Mexico.

Type.—In Geneva Mus.

Range.—Mexico to Peru (Coker); Galapagos Islands (Bell).

Diagnosis.—Front bidentate. Carapace with single intestinal, double hepatic, and single subhepatic protuberances; carapace and chelipeds coarsely granulate. Sixth segment of male abdomen protruding backward over fifth.

Material examined.—None from the Galapagos Islands. The Hancock collections contain several specimens of this species from Sechura Bay, Peru.

Genus **RANDALLIA** Stimpson, 1857

Randallia agaricias Rathbun

Plate 62, Fig. 2

Randallia agaricias Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 614, pl. 44, figs. 7 and 7a, 1898; Bull. 166, U.S. Nat. Mus., p. 178, pl. 50, figs. 3 and 4, text fig. 40, 1937.

Type locality.—Off Cape San Lucas, Lower California, 31 fms.

Type.—USNM No. 21601.

Range.—From Thurloe Bay, Lower California *(Velero III),* to La Libertad, Ecuador *(Velero III);* Galapagos Islands *(Velero III).*

Diagnosis.—Carapace subglobular, a deep pit on either side of median ridge, 4 lobes on posterior border. Frontal margin with a blunt outer tooth. Dorsal tubercles mushroomlike, those of sternum and abdomen beadlike.

Material examined (2 specimens from as many stations).—

186-34. Cartago Bay, Albemarle Island, 32 fms, Jan. 25, 1934, 1 male (photographed) (USNM No. 69298).

187-34. Cartago Bay, Albemarle Island, 8-10 fms, Jan. 25, 1934, 1 male (USNM No. 69303).

Measurements.—Male specimen: length 6.3 mm, width 6.5 mm.

Habitat.—Sand and nullipore, sand and rock.

Depth.—3-55 fms.

Remarks.—The extreme northern and southern records of the occurrence of the species along the mainland coast of the Americas, as well as the Galapagos record, are the results of the work of Hancock Expedition collectors.

R. agaricias is now recognized as a member of the Galapagan fauna.

Family *CALAPPIDAE*
Subfamily CALAPPINAE
Genus CALAPPA Weber, 1795
Calappa convexa Saussure

Plate 62, Fig. 6

Calappa convexa Saussure, Rev. Mag. Zool., ser. 2, vol. 5, p. 362 (9), pl. 13, fig. 3, 1853. Rathbun, Zoologica, vol. 5, no. 14, p. 159, 1924; Bull. 166, U.S. Nat. Mus., p. 206, pl. 62, figs. 1-3, and synonymy, 1937.

Type locality.—Cape San Lucas, Lower California.

Type.—Not extant.

Range.—From Magdalena Bay, Lower California (Glassell), to Salinas, Ecuador (Schmitt), Galapagos Islands (Williams Expedition).

Atlantic analogue.—*C. flammea* (Herbst).

Diagnosis.—Carapace broad, one and one-half times as wide as long, rounded in front, surface low tuberculate, a series of transverse granlated ridges arising from the posterolateral borders. Chelipeds closely approximating carapace; hands with a high dentate crest.

Material examined (2 specimens from as many stations).—

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 1 young (USNM No. 69334).

173-34. South Seymour Island, 5 fms, Jan. 22, 1934, 1 young (photographed) (USNM No. 69758).

Measurements.—Young specimen: length 7.0 mm, width 7.9 mm.

Color in life.—Carapace hazel on frontal and gastric areas, an undertone of Eugenia red on branchial areas, and white across carapace at cardiac level. A large Eugenia red patch on anterolateral area extending over branchial area but almost covered with small patterns of ochraceous orange and russet. Marginal teeth ochraceous orange. Eyestalks tawny; eye pale blue. Chelipeds same as carapace with a large Eugenia red spot across distal end of hand and base of movable finger. Fingers tawny olive shading to very light tips. (Petersen)

Habitat.—Sand.

Depth.—0-32 fms.

Remarks.—*C. convexa* is the commonly encountered "Shame-faced Crab" of the equatorial Pacific. It may be distinguished from the nearly related *C. saussurei* Rathbun by the short, transverse, granulated ridges on the posterolateral portions of the carapace, those of *C. saussurei* being extended beyond the margin of the carapace onto the teeth at the posterolateral angles. It is also taken at shallower depths.

Rathbun (1937) records *Calappa saussurei* from Wreck Bay, Chatham Island, 32 fms, Hancock Expedition of 1934. After examining this specimen, the writer is convinced that it is a young *C. convexa;* indeed, he is unable to distinguish it in any way from the South Seymour Island specimen and has recorded both above.

Genus **MURSIA** Leach, 1823

Mursia gaudichaudii (Milne Edwards)

Plate 62, Figs. 3, 4

Platymera gaudichaudii Milne Edwards, Hist. Nat. des Crustaces, vol. 2, p. 108, 1937.

Mursia gaudichaudii Rathbun, Bull. 166, U.S. Nat. Mus., p. 220, pl. 66, figs. 1-3, pl. 67, figs. 1-6, and synonymy, 1937. Crane, Zoologica, vol. 22, no. 7, p. 99, 1937.

Type locality.—Chile.

Type.—In Paris Mus.

Range.—From Farallon Islands *(Albatross)* to Valparaiso, Chile (type loc.); Galapagos Islands *(Velero III).*

Diagnosis.—Carapace transversely oval, anterolateral margins arcuate and minutely dentate, posterolateral margins sinuous, entire. A strong lateral spine directed outward; a similar spine at distal end of merus.

Material examined (27 specimens from 7 stations).—

191-34. Lat. 0° 55′ S, Long. 90° 30′ W, 70 fms, Jan. 26, 1934, 2 young (USNM No. 69224), 1 young (AHF no. 34040).

195-34. North of Charles Island, 70-80 fms, Jan. 29, 1934, 10 young (AHF no. 34041).

788-38. SE of Daphne Major Island, 55 fms, Jan. 19, 1938, 1 male (AHF no. 38022).

792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 1 female, 4 young (AHF no. 38023).

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 1 young (AHF no. 38024).

810-38. (D-2) Barrington Island, 73 fms, Jan. 26, 1938, 2 young (AHF no. 38025).

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 1 male (photographed), 4 young (AHF no. 38026).

Measurements.—Largest specimen, male: length 16.6 mm, width including lateral spine 35.2 mm, length of spine 6.8 mm, cheliped 22.8 mm, chela 11.0 mm, height of chela 8.5 mm, dactyl 5.8 mm.

Color in life.—Carapace light olive gray on frontal and anterolateral regions to pale olive gray on intestinal and posterolateral regions, covered with granules of orange red to dragon's blood red. Tubercles of carapace light orange to almost white tips. Eyestalks with blotches of dark orange red; eye dark olive green. Color of carapace extending about one third on spine, blending into bright orange and fading to white at tip. A light touch of orange on marginal teeth. Distal meral spine of cheliped similar to lateral spine of carapace. Carpus darker than carapace with two spines of orange red. Hand pale dull gray above, crested with orange yellow shading to dull pale yellow on middle outer portion and white beneath. Ambulatory legs pale olive gray with touches of vinaceous purple; tips of dactyls white. (Petersen)

Habitat.—Sand, sand and coral, sand and mud, sand and rock, sand and shell.

Depth.—20-218 fms.

Remarks.—*M. gaudichaudii* has the greatest latitudinal range of all Galapagos brachyuran species, from San Francisco, California, to Valparaiso, Chile. This exceeds the range of the dromid, *Dromidia larraburei* Rathbun, which occurs from Monterey Bay, California, to Sechura Bay, Peru, *M. gaudichaudii* has also an extreme bathymetric range, 20-218 fathoms, exceeded by but one other Galapagos species, *Euchirograpsus americanus* A. Milne Edwards, found from 32-278 fathoms; the extreme depth in this case is an Atlantic record. Apparently *Mursia* is widely tolerant to changes in temperature and pressure.

The affinities of this species are with Japan and Australia, the genus not being found in the Atlantic Ocean. It is characterized by a long lateral spine, suggestive of the attenuated spine of the portunids, particularly *Portunus (A.) acuminatus* Stimpson (not Rathbun, 1930).

M. gaudichaudii was not previously recorded from the Galapagos Islands.

Genus **CYCLOËS** de Haan, 1837

Cycloës bairdii Stimpson

Plate 62, Figs. 7, 8

Cyclois bairdii Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 237 (109), 1860.

Cycloës bairdii Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 610, 1898; Bull. 166, U.S. Nat. Mus., p. 225, pl. 69, figs. 3 and 4, and synonymy, 1937. Crane, Zoologica, vol. 22, no. 7, p. 100, 1937.

Type locality.—Cape San Lucas, Lower California.

Types.—USNM No. 2001.

Range.—From Cape San Lucas, Lower California (Xantus), to La Libertad, Ecuador *(Velero III);* Galapagos Islands (Crocker Expedition); also occurs in the Atlantic.

Diagnosis.—Carapace circular except for slightly concave posterolateral margins, length and breadth subequal. Anterolateral margins with beaded edge and a terminal denticle. Eyes large, orbits prominent, especially in young.

Material examined (69 specimens from 18 stations).—

25-33. Gardner Bay, Hood Island, 2 fms, Jan. 24, 1933, 3 young (USNM No. 68019).

57-33. Post Office Bay, Charles Island, 4 fms, Feb. 6, 1933, 2 young (AHF no. 33011).

81-33. Conway Bay, Indefatigable Island, 6 fms, Feb. 16, 1933, 1 soft shell (USNM No. 68018).

84-33. South Seymour Island, 13 fms, Feb. 18, 1933, 2 young (AHF no. 33012).

87-33. South Seymour Island, 15 fms, Feb. 19, 1933, 1 male, 2 young, soft shell (AHF no. 33013).

145-34. North end of Albemarle Island, 6-7 fms, Jan. 12, 1934, 3 males, 2 females (USNM No. 69165).

146-34. North end of Albemarle Island, shore, Jan. 12, 1934, 2 males (USNM No. 69172).

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 2 young (AHF no. 34042).

173-34. South Seymour Island, 5 fms, Jan. 22, 1934, 5 young (USNM No. 69329).

196-34. North of Charles Island, 8-10 fms, Jan. 29, 1934, 1 young (AHF no. 34043).

204-34. Gardner Bay, Hood Island, 30 fms, Jan. 31, 1934, 3 females (AHF no. 34044).

329-35. Tagus Cove, Albemarle Island, 10 fms, Dec. 10, 1934, 1 young (AHF no. 35015).

360-35. Gardner Bay, Hood Island, 3 fms, Dec. 19, 1934, 4 young (AHF no. 35016).

783-38. Darwin Bay, Tower Island, 40-70 fms, Jan. 16, 1938, 1 male (AHF no. 38027).

785-38. Darwin Bay, Tower Island, 20-40 fms, Jan. 17, 1938, 13 young (1 photographed) (AHF no. 38028).

790-38. South Seymour Island, 10-20 fms, Jan. 19, 1938, 7 young (AHF no. 38029).

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 1 young (AHF no. 38030).

807-38. Academy Bay, Indefatigable Island, 10-25 fms, Jan. 24, 1938, 1 male, 10 young (AHF no. 38031).

Measurements.—Male: length 20.4 mm, width 20.9 mm.

Color in life.—Ground color of carapace light olive gray with numerous deep purplish vinaceous spots. Ambulatory legs French gray with stripes of purplish lilac, salmon color at distal end of merus. Dactyls light amber yellow. Eyestalks French gray; eyes light green. (Petersen)

Habitat.—Sand, sand and coral, sand and rock.

Depth.—2-70 fms; 1 shore record, presumably extreme low tide.

Remarks.—*C. bairdii* is the only Galapagos oxystome to be found also in the Atlantic. It is even commoner in dredge hauls than the foregoing species, *Mursia gaudichaudii* (Milne Edwards), but has a much more normal range, both geographic and bathymetric. Its Pacific distribution coincides nicely with the belt of warm water extending from Lower California to Cape Santa Elena, Ecuador, its bathymetric range to the surface layers of warmer water also.

Subfamily MATUTINAE
Genus **OSACHILA** Stimpson, 1871
Osachila galapagensis Rathbun

Plate 52, Figs. 1-7

Osachila galapagensis Rathbun, Proc. Biol. Soc. Washington, vol. 48, p. 3, 1935; Bull. 166, U.S. Nat. Mus., p. 254, pl. 82, fig. 5; pl. 83, fig. 3, 1937.

Type locality.—Wenman Island, Galapagos Islands, 100-150 fms.

Type.—USNM No. 69215.

Range.—Known only from the Galapagos Islands.

Atlantic analogue.—Not *O. antillensis* Rathbun (see *Remarks* below).

Diagnosis.—Carapace granulate, length little more than three fourths width. Rostrum thick, bilobed. Anterolateral margin completely denticulate, teeth in clusters of 3. Postbranchial prominence high; outer branchial elevation extending both forward and backward of lateral angle. Leg surfaces nearly smooth, edges dentate.

Material examined (14 specimens from 6 stations).—

143-34. Wenman Island, 100-150 fms, Jan. 11, 1934, 1 male, 4 females (USNM No. 69215), the type series; 2 females (1 ovig., 1 illustrated) (AHF no. 34045).

147-34. Tagus Cove, Albemarle Island, 30 fms, Jan. 13, 1934, 1 male (USNM No. 69212).

155-34. Off Tagus Cove, Albemarle Island, 50-60 fms, Jan. 15, 1934, 1 male (illustrated in part) (AHF no. 34046).

157-34. Tagus Cove, Albemarle Island, 10-18 fms, Jan. 15, 1934, 1 young female (USNM No. 69213).

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 1 female (USNM No. 69214), 1 female, 1 carapace (AHF no. 34047).

325-35. Outside of Tagus Cove, Albemarle Island, 80 fms, Dec. 10, 1934, 1 male (USNM).

Measurements.—Female: length 20.6 mm, width 24.7 mm.

Habitat.—Sand and shell, sand and nullipore; coral, nullipore and rock.

Depth.—10-150 fms.

Remarks.—*O. galapagensis* is not the true Pacific analogue of the Atlantic *O. antillensis* Rathbun (1916) as given by Rathbun (1937, p. 250). Another and better analogue has been proposed by the writer (1940) in *O. sona* Garth from the Panamanian mainland.

Osachila levis Rathbun

Plate 62, Fig. 5

Osachila levis Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 612, 1898; Bull. 166, U.S. Nat. Mus., p. 254, pl. 78, figs. 3 and 4, 1937.

Osachila lata Crane, Zoologica, vol. 22, no. 7, p. 100, 1937 (part: the female specimen, Sta. 150: D16, pl. 1, figs. 3 and 4).

Type locality.—Off Cape San Lucas, Lower California, 31 fms.

Type.—USNM No. 21598.

Range.—From off Cape San Lucas, Lower California *(Albatross),* to La Plata Island, Ecuador *(Velero III);* Galapagos Islands *(Velero III).*

Diagnosis.—Surface smooth and punctate, length almost as great as width. Front projecting, bilobate. Anterolateral margins dentate on anterior two-thirds only. Hand paved with sharp tubercles arranged in rows. Leg surfaces entirely smooth.

Material examined (8 specimens from 5 stations).—

155-34. Off Tagus Cove, Albemarle Island, 50-60 fms, Jan. 15, 1934, 1 male, 1 female (USNM No. 69754), 1 male (AHF no. 34048).

172-34. East of Wreck Bay, Chatham Island, 12 fms, Jan. 21, 1934, fragment of carapace (AHF no. 34049).

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 1 female (AHF no. 34050).

792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 2 young males (AHF no. 38032).

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 1 male (photographed) (AHF no. 38033).

Measurements.—Male: length 11.0 mm, width 12.6 mm.

Habitat.—Sand and shell, sand and nullipore, sand and mud; rock, coral, nullipore, and bryozoa.

Depth.—12-80 fms.

Remarks.—Before the Hancock Expeditions began their work in 1931 this species was known only from the unique type, an ovigerous female taken by the *Albatross* off Cape San Lucas, Lower California, in 1888. Its congener, *O. lata* Faxon, was known from but a single specimen, a male (MCZ No. 4497), taken by the *Albatross* off Tres Marias Islands, Mexico, in 1891. Because the disparity between the male and female of each species, as shown by specimens in Hancock collections, is greater than that between the males of both or the females of both, Crane (1937, pl. 1, figs. 1-4) mistakenly figured the male of one and the female of the other as one and the same species.

From a study of the extensive Hancock series of the 3 species, it would seem that *O. lata* is the Gulf of California-Mexican species, *O. galapagensis* Rathbun the Galapagos endemic species, and *O. levis* the widely distributed species of warmer equatorial waters.

Subtribe BRACHYGNATHA
Superfamily **OXYRHYNCHA**
Family ***MAJIDAE***
Subfamily INACHINAE
Genus **STENORYNCHUS** Lamarck, 1818
Stenorynchus debilis (Smith)

Plate 63, Fig. 1

Leptodia sagittaria Milne Edwards and Lucas, d'Orbigny's Voy. l'Amer. Merid., vol. 6, pt. 1, p. 3, 1843; atlas, vol. 9, Crust., pl. 4, figs. 3-3c, 1847; not *L. sagittaria* Leach.

Leptodia debilis Smith, Rept. Peabody Acad. Sci. for 1869 and 1870, appendix, p. 87, 1871.

Stenorynchus debilis Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 568, 1898; Proc. Washington Acad. Sci., vol. 4, p. 283, 1902; Bull. 129, U.S. Nat. Mus., p. 18, pls. 4 and 5, and synonymy, 1925. Boone, Zoologica, vol. 8, no. 4, p. 131, fig. 34, 1927. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 617, 1931. Crane, Zoologica, vol. 22, no. 3, p. 50, 1937.

Type locality.—Bay of Realejo, Nicaragua.

Type.— MCZ No. 3948.

Range.—From Magdalena Bay, Lower California *(Albatross),* to Chile (Milne Edwards and Lucas); Galapagos Islands (Hopkins-Stanford Expedition); low water to 50 fathoms (Crane).

Atlantic analogue.—*S. seticornis* (Herbst).

Diagnosis.—Rostrum as long as, or longer than, remainder of carapace, its lateral margins spinulous. A small spine located at end of basal article of antenna. Legs exceedingly long and slender.

Material examined (26 specimens from 12 stations).—

157-34. Tagus Cove, Albemarle Island, 10-18 fms, Jan. 15, 1934, 1 large male.

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 1 male, 2 ovig. females.

186-34. Cartago Bay, Albemarle Island, 32 fms, Jan. 25, 1934, 1 young.

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 1 male.

310-35. Marchena Island, 15 fms, Dec. 3, 1934, 1 male, 1 female.

311-35. Marchena Island, 20 fms, Dec. 3, 1934, 1 young.

322-35. Tagus Cove, Albemarle Island, 10 fms, Dec. 10, 1934, 1 male, 1 female.

326-35. Tagus Cove, Albemarle Island, 15 fms, Dec. 10, 1934, 1 young female.

330-35. Tagus Cove, Albemarle Island, 12 fms, Dec. 10, 1934, 1 male.

345-35. South Seymour Island, 30 fms, Dec. 13, 1934, 1 male, 1 female.

362-35. Hood Island, 20 fms, Dec. 19, 1934, 1 young.

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 5 males, 5 females (1 ovig.). All but ovigerous female very young.

Measurements.—Largest male specimen: length, 20.0 mm, width 7.8 mm, cheliped 36.7 mm, chela 16.4 mm, first ambulatory leg 66.0.

Color in life.—Ground color of carapace a warm buff with faint orange tint. Rostrum bright apricot orange which becomes darker toward tip. Spines of carapace bright orange red. Stripes of carapace pale apricot orange with double dotted stripe on top. Four stripes of pale yellow on carapace. Ambulatory legs same color as carapace with tint of apricot orange which appears in irregular bands. Legs with numberless tiny spots of brownish black. Dactyl bright apricot orange; nail pale yellow. (Petersen)

Habitat.—A variety of bottom conditions is recorded, including rock with sand patches, shell, nullipore, and mud.

Depth.—*S. debilis* has been taken by *Velero III* collectors from shore to 60 fms.

Remarks.—Because of their exceeding fragility and the fact that most of the specimens were obtained by the cotton swabs of the tangles, only a few of our *S. debilis* from the Galapagos Islands are in perfect condition. The series as a whole is remarkable for the minute size of the specimens. Only two may be considered at all well developed. These, being males, have enlarged and thickened palms, and one of them shows the supplementary spinules along the rostral spine and walking legs particularly well. The fingers of this specimen are hairy.

The vertical range of the species has been extended to 60 fathoms.

Genus ANOMALOTHIR Miers, 1879

Anomalothir hoodensis Garth

Plate 64, Figs. 1, 2

Anomalothir hoodensis Garth, Allan Hancock Pac. Exped., vol. 5, no. 2, pp. 9-11, pl. 1, figs. 1-4, 1939.

Type locality.—North of Hood Island, Galapagos Islands, 140-160 fms.

Type.—AHF no. 381.

Range.—Waters of the central and southern islands of the Galapagos group.

Atlantic analogue.—*A. frontalis* (A. Milne Edwards).

Diagnosis.—Postorbital spine longer than preorbital. Third and fourth legs of approximately equal length. A single spine on the carpus of the cheliped. Merus of the third leg entire. Carapace little produced posteriorly; no tubercle in front of posterior margin.

Material examined (8 specimens from 5 stations).—

792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 2 males.

810-38. (D-1) Barrington Island, 48 fms, Jan. 26, 1938, 1 male, 1 female.

810-38. (D-2) Barrington Island, 73 fms, Jan. 26, 1938, 1 female.

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 1 male.

817-38. North of Hood Island, Lat. 1° 20′ S, Long. 89° 40′ W, 140-160 fms, Jan. 29, 1938, 1 male, 1 female (holotype, AHF no. 381).

Measurements.—Female holotype: length 10.8 mm, width 5.6 mm, cheliped 12.6 mm, first ambulatory leg 21.8 mm.

Color in life.—Carapace clear pearly gray with numerous orange red dots along midline and continued on rostrum. Eye dark purplish red with green highlights; a few red dots on eyestalk. Merus of ambulatory legs banded with similar dots. Chela with faint tint of orange along upper surface. (Petersen)

Habitat.—Sand, sand and shell, sand and mud.

Depth.—20-160 fms.

Remarks.—This species is the only representative of its genus thus far found on the Pacific side of the Isthmus of Panama. Its similarity to *A. frontalis* (A. Milne Edwards) (1879) of the Atlantic has been noted in the original description. Because of its wide bathymetric range, 20-160 fms, *A. hoodensis* belongs at once to both littoral and abyssal faunas.

Genus **PODOCHELA** Stimpson, 1860

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Podochela*

A¹ Rostrum acuminate, typically bifurcate; a laciniate postorbital lobe . . . . . *P. schmitti*

A² Rostrum hood shaped; postorbital lobe lacking . *P. margaritaria*

Podochela margaritaria Rathbun

Plate 64, Figs. 5, 6

Podochela margaritaria Rathbun, Proc. Washington Acad. Sci., vol. 4, p. 283, pl. 12, fig. 12, 1902; Bull. 129, U.S. Nat. Mus., p. 43, pl. 15; pl. 209, fig. 1, 1925.

Type locality.—Tagus Cove, Albemarle Island, Galapagos Islands.

Type.—USNM No. 24834.

Range.—Previously known only from the type locality, Tagus Cove, Albemarle Island (Hopkins-Stanford Expedition).

Diagnosis.—Rostrum broad, hood shaped. Postorbital lobe absent.

Material examined (50 specimens from 24 stations).—

66-33. Tagus Cove, Albemarle Island, 10-20 fms, Feb. 9, 1933, 1 female.

148-34. Tagus Cove, Albemarle Island, 12-15 fms, Jan. 13, 1934, 1 male, 1 female.

157-34. Tagus Cove, Albemarle Island, 10-18 fms, Jan. 15, 1934, 1 male.

161-34. Black Beach, Charles Island, 3 fms, Jan. 17, 1934, 1 large ovig. female.

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 1 ovig. female.

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 2 males, 1 ovig. female.
182-34. James Bay, James Island, 30 fms, Jan. 24, 1934, 1 specimen.
183-34. James Bay, James Island, 50-70 fms, Jan. 24, 1934, 2 females.
193-34. Post Office Bay, Charles Island, 8-10 fms, Jan. 27, 1934, 1 ovig. female.
197-34. Off Post Office Bay, Charles Island, 35-40 fms, Jan. 29, 1934, 2 males, 1 female.
307-35. Marchena Island, 20 fms, Dec. 3, 1934, 2 large males.
310-35. Marchena Island, 15 fms, Dec. 3, 1934, 1 male, 2 females.
316-35. Opposite Gordon Rocks, Indefatigable Island, 20 fms, Dec. 8, 1934, 1 male.
318-35. Opposite Gordon Rocks, Indefatigable Island, 45 fms, Dec. 8, 1934, 1 female.
320-35. Academy Bay, Indefatigable Island, 8-10 fms, Dec. 8, 1934, 2 males.
327-35. Tagus Cove, Albemarle Island, 12 fms, Dec. 10, 1934, 1 female.
328-35. Tagus Cove, Albemarle Island, 14 fms, Dec. 10, 1934, 1 male, 1 female (photographed).
339-35. Sulivan Bay, James Island, 10 fms, Dec. 12, 1934, 1 ovig. female.
340-35. Sulivan Bay, James Island, 8 fms, Dec. 12, 1934, 1 male, 1 female.
341-35. Sulivan Bay, James Island, 20 fms, Dec. 12, 1934, 3 females.
355-35. Gardner Bay, Hood Island, 12 fms, Dec. 17, 1934, 3 males, 6 females (2 ovig.).
356-35. Gardner Bay, Hood Island, 12-15 fms, Dec. 17, 1934, 2 males, 2 ovig. females.
795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 1 male, 1 female.
814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 1 female (color noted).

Measurements.—Largest female: length 15.6 mm, width 12.5 mm, first ambulatory leg 45.0 mm, cheliped 17.0 mm.

Color in life.—Frontal, gastric, and cardiac areas brick red. Branchial areas a little lighter and with a few light patches. Chela carrot red. Ventral side dark coral pink. Eye brownish black. (Petersen)

Habitat.—Rock, sand, shell, coral, and nullipore bottoms.

Depth.—3-70 fms.

Remarks.—Only the male of the species shows the granulate sternum and abdomen mentioned by Rathbun in the original description. The globular abdomen of the fully developed female is smooth and bare, and the small portion of the sternum left exposed consists of a series of convoluted ridges leading to the bases of the walking legs. The edges of these are cristate, the centers depressed, giving the whole the vermiculate appearance of the corresponding region in *Podochela vestita* Stimpson. But for the fact that in so many instances a male with granulate abdomen and a female with the bare ridges described above, obviously a pair, were taken together, one might be led to believe them two species.

The largest series, taken at two adjacent stations, consists of 13 specimens dredged in 12-15 fathoms in Gardner Bay, Hood Island. This shows not only the wide geographical range of the species within the archipelago but also indicates that the metropolis of the species may be in southern Galapagos waters.

This hooded decorator crab, heretofore believed to be the sole representative of its genus in the archipelago, makes way for a companion species, *P. schmitti* Garth, from which it must now be carefully distinguished by the points given in the above diagnosis.

P. margaritaria, hitherto known only from the type specimens of the Hopkins-Stanford Expedition taken at Tagus Cove, occurs throughout the Galapagos Islands at depths of from 5 to 70 fms.

Podochela schmitti Garth

Plate 64, Figs. 3, 4

Podochela schmitti Garth, Allan Hancock Pac. Exped., vol. 5, no. 2, pp. 11-13, pl. 2, figs. 1-4, 1939.

Type locality.—North of Hood Island, Galapagos Islands, 20-40 fms.

Type.—AHF no. 382.

Range.—Waters surrounding the southern and central islands of the Galapagos group, 20-80 fms.

Diagnosis.—Rostrum acuminate, typically bifurcate. Postorbital spine laciniate. First ambulatory leg of male two and one-half times length of carapace.

Material examined (20 specimens from 10 stations).—

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 1 male.

185-34. Cartago Bay, Albemarle Island, 32 fms, Jan. 25, 1934, 1 male, 2 females.

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 1 male, 1 female.

191-34. Lat. 0° 55′ S, Long. 90° 30′ W, 70 fms, Jan. 26, 1934, 1 male, 1 female.

201-34. Off Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 1 specimen.

788-38. SE of Daphne Major Island, 55 fms, Jan. 19, 1938, 1 ovig. female.

792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 4 females.

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 1 large male.

810-38. (D-2) Barrington Island, 73 fms, Jan. 26, 1938, 2 males.

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 2 males, 1 female, including the male holotype (AHF no. 382).

Measurements.—Male holotype: length 12.8 mm, width 7.9 mm, cheliped 14.6 mm, first ambulatory leg 34.0 mm.

Color in life.—Deep olive buff. (Petersen)

Habitat.—Sand, sand and rock, sand and mud, sand and shell, sand and nullipore, sand and coral.

Depth.—20-80 fms.

Remarks.—The acuminate rostrum separates *P. schmitti* distinctly from hooded *P. margaritaria* Rathbun (1902), the other Galapagos member of the genus, and the two median tubercles on the first abdominal segment from *P. hemphillii* Lockington (1877) of the northern fauna, which has but one.

Genus **EUPROGNATHA** Stimpson, 1871

Euprognatha granulata Faxon

Plate 53, Figs. 1-6

Euprognatha granulata Faxon, Bull. Mus. Comp. Zool., vol. 24, p. 149, 1893; Mem. Mus. Comp. Zool., vol. 18, p. 6, pl. 1, figs. 1 and 1a, 1895. Rathbun, Bull. 129, U.S. Nat. Mus., p. 104, pl. 35, figs. 5 and 6, 1925.

Type locality.—Near Cocos Island, 52 fms.

Cotypes.—MCZ No. 4477.

Range.—Previously known only from the type locality, off Cocos Island, Costa Rica *(Albatross).*

Diagnosis.—Anterior margins of postorbital spines laciniated. Antennal spine reaching beyond horns of rostrum.

Material examined (104 specimens from 15 stations).—

55-33. Lat. 1° 03′ 30″ S, Long. 90° 17′ 30″ W, 60 fms, Feb. 5, 1933, 5 males (1 illustrated), 3 females (1 ovig.).

143-34. Wenman Island, 100-150 fms, Jan. 11, 1934, 1 male, 7 females.

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 1 male.

183-34. James Bay, James Island, 50-70 fms, Jan. 24, 1934, 2 males.

185-34. Cartago Bay, Albemarle Island, 32 fms, Jan. 25, 1934, 6 males, 4 females.

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 1 male, 2 females.

201-34. Off Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 3 males, 1 female.

318-35. Off Gordon Rocks, Indefatigable Island, 45 fms, Dec. 8, 1934, 2 males, 4 females.

324-35. Tagus Cove, Albemarle Island, 45 fms, Dec. 10, 1934, 1 ovig. female.

346-35. Between South Seymour and Daphne Islands, 55 fms, Dec. 13, 1934, 1 male.

792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 26 males, 21 females.

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 1 male, 1 female.

795a-38. Sulivan Bay, James Island, 50-60 fms, Jan. 21, 1938, 1 large male.

810-38. (D-2) Barrington Island, 73 fms, Jan. 26, 1938, 2 females.

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 5 males, 2 females.

Measurements.—Largest male: length 10.0 mm, width 7.7 mm, cheliped 38.0 mm, chela 19.7 mm.

Color in life.—Frontal, cardiac, and gastric regions reddish garnet brown. Branchial region cream buff with numerous orange-red blotches, giving this portion of the carapace a light orange appearance. All spines pale yellow to white tips. Cheliped pearl gray with blotches of ochraceous buff to salmon; orange red at distal end of merus. Ambulatory legs like cheliped; blotches a little darker and light Van Dyke red at distal end of merus. (Petersen)

Habitat.—Sand, sand with shell, mud, nullipore, and coral; mud, mud with shell; rock and shell.

Depth.—20-150 fms.

Remarks.—The specimens obtained by the *Velero III* are the first since Faxon's types and include the only male specimens known.

This species was encountered sparingly until 1938, when a dredge haul made off Daphne Minor Island brought up 47 specimens. This might indicate either that the channel between James and Indefatigable Islands in which Daphne Minor is located may be the metropolis of the species, or simply that the depth of the haul, 70-80 fathoms, is more favorable than the relatively shallow depths at which most of the small boat dredging was done in earlier years.

The geographical range of *E. granulata* has been extended to include the entire Galapagos Archipelago, and its bathymetric range from 52 fathoms to 150 and shoalward to 20.

Description of the male.—The male of *Euprognatha granulata* differs from Faxon's description and figure of the female in the following particulars:

1. The ratio of length to breadth of carapace is greater, the male measuring 10.0 mm by 7.7 mm, the female 7 mm by 6 mm.

2. The chelipeds are elongated to almost four times the length of the carapace, or 38 mm, in the 10 mm male above. Of this length the chela occupies over half, or 18.9 mm.

3. The ambulatory legs are correspondingly attenuated and decrease regularly in length from first to last.

4. A third median spine is present in addition to the gastric and cardiac spines mentioned by Faxon and is located on the intestinal region.

5. The pterygostomian region is tumid and is clearly visible in dorsal view between the postorbital lobe and the hepatic spine.

6. The under side of the postorbital lobe is concave.

7. The outer maxilliped, described by Faxon only as granulated, has a triangular merus sharply produced at the anterointernal angle, broadened toward the anteroexternal angle, and but weakly grooved for the insertion of the thickened and compressed palpus. The exognath is also broad, particularly for its basal two-thirds.

8. The male abdomen is widest opposite the third segment and narrowest at the union of the fifth and sixth. The last two segments appear to be fused. A well-developed median spine is present on the first segment, and rudimentary spines on the following two, rather than three, segments.

Genus **DASYGYIUS** Rathbun, 1897

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Dasygyius*

A[1] Carapace subglobular, rostrum bifid; first leg not appreciably shorter than others; tip of male abdomen triangular . . . . . *D. gibbosus*

A² Carapace depressed, rostrum simple; first ambulatory leg shortest; tip of male abdomen rounded . . . *D. depressus*

Dasygyius gibbosus (Bell)

Microrynchus gibbosus Bell, Proc. Zool. Soc. London, vol. 3, p. 88, 1835; Trans. Zool. Soc. London, vol. 2, p. 41, pl. 8, figs. 1-1c, 1836.

Dasygyius gibbosus Rathbun, Proc. U.S. Nat. Mus., vol. 38, p. 571, 1910; Bull. 129, U.S. Nat. Mus., p. 138, pl. 274, figs. 1-4, 1925.

Type locality.—Galapagos Islands, 6 fms, sandy mud.

Type.—Not extant.

Range.—Known only from the Galapagos Islands (Bell).

Diagnosis.—Carapace subglobular, coarsely granulate, rostrum bifid. Male chelae moderately inflated, dactyl with a large basal tooth. Legs long, cylindrical, hairy, first leg not appreciably shorter than second. Tip of male abdomen narrowly triangular.

Material examined.—None.

Remarks.—See *Remarks* under the following *D. depressus.*

Dasygyius depressus (Bell)

Microrynchus depressus Bell, Proc. Zool. Soc. London, vol. 3, p. 88, 1835; Trans. Zool. Soc. London, vol. 2, p. 42, pl. 8, figs. 2, 2d-f, 1836.

Dasygyius depressus Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 579, 1898; Bull. 129, U.S. Nat. Mus., p. 138, pl. 1; pl. 274, figs. 5-8, 1925. Crane, Zoologica, vol. 22, no. 3, p. 56, 1937.

Type locality.—Galapagos Islands, 6 fms, sandy mud.

Type.—Not extant.

Range.—Gulf of California *(Zaca);* Galapagos Islands (Bell); 6-60 fms (Crane).

Diagnosis.—Carapace depressed, finely granulate, rostrum simple. Chelae of male turgid, dactyl without large basal tooth. Legs long, cylindrical, hairy, first ambulatory shortest. A large conical spine on male first abdominal segment.

Material examined.—None from the Galapagos Islands.

Remarks.—The Hancock collections contain a long series of specimens obtained along the mainland from Concepción Bay, Gulf of California, to Port Utria, Colombia. All were dredged from mud of a type which was not found in the Galapagos Islands, as there are no rivers, with the exception of the small stream at Freshwater Bay, to provide a bottom rich in detritus. Since *D. depressus* has not been taken in Galapagos waters in

over 100 years, and since Cuming, who obtained the original specimens, also visited the mainland of Ecuador, it is possible that he may have confused the localities on this species. The same would hold true for *D. gibbosus* if its habits are at all similar.

Subfamily ACANTHONYCHINAE
Genus ACANTHONYX Latreille, 1825
Acanthonyx petiverii Milne Edwards
Plate 63, Fig. 4

Acanthonyx petiverii Milne Edwards, Hist. Nat. Crust., vol. 1 p. 343, 1834. Rathbun, Bull. 129, U.S. Nat. Mus., p. 142, pl. 44; pl. 222, figs. 1-6, and synonymy, 1925. Boone, Zoologica, vol. 8, no. 4, p. 137, fig. 38, 1927. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 620, 1931. Hult, Arkiv för Zoologi, Band 30A, no. 5, p. 11, 1938.

Type locality.—The Antilles.

Type.—In Paris Mus.

Range.—From Magdalena Bay, Lower California, to Valparaiso, Chile (Dana); Galapagos Islands (Bell); occurs also in the Atlantic.

Diagnosis.—A large hepatic lobe and 2 small branchial lobes tufted with hair. Three tufted tubercles on gastric region, one cardiac, one intestinal.

Material examined (38 specimens from 12 stations).—

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 1 male.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 5 males, 7 females (3 ovig.), 7 young.

46-33. Barrington Island, 4-10 fms, Feb. 2, 1933, 2 females.

66-33. Tagus Cove, Albemarle Island, 10-20 fms, Feb. 9, 1933, 1 male, 1 female.

146-34. Albemarle Point, Albemarle Island, shore, Jan. 12, 1934, 1 male (photographed), 1 female.

147-34 to 151-34. Tagus Cove, Albemarle Island, Taylor's sargassum, Jan. 13, 1934, 1 specimen.

152-34. Tagus Cove, Albemarle Island, coral, Jan. 14, 1934, 2 ovig. females.

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 1 male, 1 female.

157-34. Tagus Cove, Albemarle Island, 10-18 fms, Jan. 15, 1934, 1 male.

161-34. Black Beach, Charles Island, 3 fms, Jan. 17, 1934, 2 males, 2 young.

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 1 small male.

169-34. Academy Bay, Indefatigable Island, 15-25 fms, Jan. 20, 1934, 1 young.

Measurements.—Largest male: length 21.3 mm, width 14.0 mm, cheliped 22.0 mm, chela 11.1 mm, first ambulatory leg 26.0 mm.

Habitat.—Seaweeds.

Remarks.—This species, which has been known to occur in the Galapagos Islands since earliest times, is generally secured from marine plant washings.

A large series of tiny individuals was obtained, probably from algal washings, at a shore station at Cormorant Point, Charles Island. The series consisted of 5 male and 7 female specimens, of which 3 were ovigerous, and 7 young. It was possible to distinguish the sex quite readily on specimens 3 mm or more in length,and a 7.5 mm female was found carrying eggs. This is but one-third the length of the male the measurements of which are given above.

Genus **EUPLEURODON** Stimpson, 1871

Eupleurodon rathbunae Garth

Epialtus peruvianus Finnegan, Journ. Linn. Soc. London, vol. 37, p. 620, 1931.

Eupleurodon rathbunae Garth, Allan Hancock Pac. Exped., vol. 5, no. 2, p. 13, pl. 3, figs. 1-5, 1939.

Type locality.—Gardner Bay, Hood Island, Galapagos Islands.

Type.—USNM No. 77366.

Range.—Known only from the type locality.

Diagnosis.—Carapace foreshortened, wider between anterolateral than between posterolateral lobes. No preocular tooth. No small tooth on lateral margin between the two lobes. Distance between anterior lobes greater than distance from the tip of anterior lobe to middle of posterior border.

Material examined.—

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, female holotype (USNM No. 77366).

Measurements.—Female holotype: length of carapace including rostrum 7.1 mm, width 5.3 mm, length of rostrum 2.1 mm.

Habitat.—Among algae.

Remarks.—Although the writer has not seen the Crossland specimen referred to *Epialtus peruvianus* Rathbun by Finnegan (1931), a camera lucida drawing made by Dr. Isabella Gordon of the British Museum

proves it to be identical with the *Eupleurodon* under consideration. It is exceedingly unfortunate that three questionable species, *Eupleurodon trifurcatus* Stimpson (1871), *Epialtus peruvianus* Rathbun (1924) (which should be transferred to *Eupleurodon* and given another specific name), and *Eupleurodon rathbunae* Garth were all described from single specimens and that the type of the first no longer exists. Having found so little infiltration of the Peruvian crustacean fauna into the Galapagos Islands, the writer deemed it best to consider a specimen of doubtful affinities a distinct, endemic species, rather than to attribute to a mainland species, and particularly a sub-Antarctic one, an extension of range having far greater implications than are justified under the circumstances. To quote the pioneer carcinologist, Wm. Stimpson: "We have named it because we consider it far better for the interest of science to admit a slight risk of adding a synonym, than to refer a species to a locality at which it does not exist, which would tend to confuse our ideas upon geographical distribution, a knowledge of which constitutes one of the most important aims in our investigation of species." (Ann. Lyc. Nat. Hist. New York, vol. 7, p. 50 (178), 1860.)

Genus **TALIEPUS** A. Milne Edwards, 1878

Taliepus marginatus (Bell)

Epialtus marginatus Bell, Proc. Zool. Soc. London, vol. 3, p. 173, 1835; Trans. Zool. Soc. London, vol. 2, p. 62, pl. 11, fig. 4, 4i-k; pl. 13, 1836.

Taliepus marginatus Rathbun, Bull. 129, U.S. Nat. Mus., p. 164, pls. 52 and 53; pl. 220, fig. 2; pl. 221, and synonymy, 1925.

Type locality.—*"Ad oras Brasiliae."*

Type.—Not extant.

Range.—From Independencia Bay, Peru (Coker) to Guaiacan, Chile (Lenz); Galapagos Islands (Bell); Brazil (Bell).

Diagnosis.—Carapace smooth, broadly oval. A preorbital but no postorbital tooth. A small hepatic and large anterolateral tooth. An inferior distal tooth on the propodus of each ambulatory leg. Chelipeds of adult male large and powerful.

Material examined.—None from the Galapagos Islands. The Hancock collections contain specimens from Independencia and San Juan Bays, Peru.

Genus **SPHENOCARCINUS** A. Milne Edwards, 1875

Sphenocarcinus agassizi Rathbun

Plate 63, Fig. 2

Sphenocarcinus agassizi Rathbun, Proc. U.S. Nat. Mus., vol. 16, p. 231, 1893; Bull. 129, U.S. Nat. Mus., p. 188, pl. 63; pl. 223, figs. 1 and 2, 1925. Faxon, Mem. Mus. Comp. Zool., vol. 18, p. 7, pl. 1, figs. 3 and 3a, 1895. Crane, Zoologica, vol. 22, no. 3, p. 58, 1937.

Type locality.—Gulf of California, 14 fms.

Type.—USNM No. 17343.

Range.—From Cape Tepoca, Gulf of California *(Albatross),* to Panama *(Albatross);* 14 to 71 fms.

Atlantic analogue.—*S. corrosus* A. Milne Edwards.

Diagnosis.—Rostrum formed of 2 blunt spines contiguous to tips. Lateral margins of carapace coarsely dentate.

Material examined (5 specimens from 2 stations).—

792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 1 male, 3 young.

810-38. Barrington Island, 48-73 fms, Jan. 26, 1938, 1 female (photographed).

Measurements.—Largest specimen, female: length 24.6 mm, width 18.8 mm, rostrum 10.0 mm, cheliped 19.2 mm, chela 8.5 mm, first ambulatory leg 26.8 mm.

Color in life.—Ground color of carapace pink with grayish hue. A pair of broad bands of vinaceous rufous extending from behind front to intestinal region, one on either side of median line. Median frontal portion light cerulean blue. Anterolateral teeth yellow orange. Cheliped orange buff at base to yellow cinamon buff on hand and fingers. First three ambulatory legs pale orange cinnamon, last leg yellow cinnamon buff banded with vinaceous rufous. (Petersen)

Habitat.—Sand, mud and sand.

Depth.—14-80 fms.

Remarks.—The finding of this species in 1938 and not in previous years is attributable to the deeper dredging attempted. *S. agassizi* is common enough in the Gulf of California but has not before been taken in the Galapagos Islands.

No particular significance is attached to the circumstance of taking the Daphne Minor specimens in association with a holothurian, as none of the subfamily Acanthonychinae, to which *Sphenocarcinus* belongs, are known to the writer to be commensal in habitat.

Subfamily PISINAE
Genus PELIA Bell, 1835
Pelia pulchella Bell

Pelia pulchella Bell, Proc. Zool. Soc. London, vol. 3, p. 170, 1835; Trans. Zool. Soc. London, vol. 2, p. 45, pl. 9, figs. 2, 2d-f, 1836. Rathbun, Bull. 129, U.S. Nat. Mus., p. 284, pl. 241, figs. 1-4, 1925.

Type locality.—Galapagos Islands, 6 fms, sandy mud.

Type.—Not extant.

Range.—Known only from the original specimen collected by Cuming in 1829.

Diagnosis.—Carapace pyriform, hairy, regions well defined. Rostrum deeply cleft, equal to nearly one-half of carapace length. Male chelipeds long, carinated, gap of movable finger closed by a tooth on pollex. Basal article of antenna exposed in dorsal view. (Based on Bell's description.)

Material examined.—None.

Genus PISOIDES Milne Edwards and Lucas, 1843
Pisoides edwardsii (Bell)

Hyas edwardsii Bell, Proc. Zool. Soc. London, vol. 3, p. 171, 1835; Trans. Zool. Soc. London, vol. 2, p. 49, pl. 9, fig. 5, 1836.

Pisoides edwardsii Dana, U.S. Expl. Exped., vol. 13, Crust., p. 87, 1852; atlas, pl. 1, figs. 2a-b, 1855. Rathbun, Bull. 129, U.S. Nat. Mus., p. 285, pl. 236, and synonymy, 1925.

Type localities.—Valparaiso and Galapagos Islands.

Type.—Not extant.

Range.—From Panama (A. Milne Edwards) to Straits of Magellan; Galapagos Islands (Bell).

Diagnosis.—Carapace broadly triangular, longer than wide, gastric and cardiac regions prominent. Rostrum deflected, horns broad and divergent. Basal antennal article broad, a spinulous tubercle at its outer angle; succeeding articles wide, depressed, hairy. A large, acute postorbital spine.

Material examined.—None from Galapagos. The Hancock collections contain specimens from the bays of San Juan and San Nicolas, Peru.

Genus HERBSTIA Milne Edwards, 1834

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Herbstia*

A¹ Posterior margin of carapace strongly produced; ambulatory legs longer than chelipeds . . . . . *H. pyriformis*

A² Posterior margin of carapace rounded; ambulatory legs shorter than cheliped of adult male . . . . *H. edwardsii*

Herbstia edwardsii Bell

Plate 65, Figs. 1, 2

Herbstia edwardsii Bell, Proc. Zool. Soc. London, vol. 3, p. 170, 1835 (1836); Trans. Zool. Soc. London, vol. 2, p. 46, pl. 9, figs. 3, 3g-i, 1836. Rathbun, Bull. 129, U.S. Nat. Mus., p. 300, pl. 105, figs. 3 and 4; pl. 240, figs. 1-4, 1925. Boone, Zoologica, vol. 8, no. 4, p. 145, fig. 42, 1927. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 623, 1931. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 11, 1933, part; not the 2 mm specimen. Hult, Arkiv för Zoologi, Band 30A, no. 5, p. 11, 1938.

Type locality.—Galapagos Islands, 6 fms, coral sand.

Type.—Not extant.

Range.—Galapagos Islands, shore to 6 fms.

Diagnosis.—Carapace rounded behind, narrowing before, lateral margin with a few spinules. Chelipeds of adult male longer than ambulatory legs; 2 teeth in gape of movable finger. Meri of ambulatory legs spinulous above.

Material examined (180 specimens from 29 stations).—

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 4 males, 4 females.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 2 females.

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 6 males, 4 females.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 1 female.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 1 female.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 3 males, 4 females, 4 young.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 1 male, 4 females.

80-33. Duncan Island, coral, Feb. 15, 1933, 6 males, 6 females.

82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 2 females (1 ovig.).

94-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 1 male, 2 ovig. females.

97-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 1 female.

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 3 males, 1 female.

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 3 males, 3 females.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 2 females.

199-34. Black Beach, Charles Island, shore, Jan. 30, 1934, 3 males, 5 females.

313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 10 males, 7 females (6 ovig.).

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 3 males, 3 females.

333-35. James Bay, James Island, shore, Dec. 11, 1934, 1 male.

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 3 males, 3 females.

350-35. South Seymour Island, shore, Dec. 13, 1934, 1 female.

351-35. South of Black Beach, Charles Island, shore, Dec. 14, 1934, 1 male, 2 females.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 3 males, 4 females (1 ovig.).

784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 2 males, 3 females.

789-38. South Seymour Island, shore, Jan. 19, 1938, 10 males (1 photographed), 10 females.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 10 males, 15 females, 1 young.

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 3 females (1 ovig.).

803-38. Black Beach, Charles Island, shore, Jan. 23, 1938, 3 males, 1 female.

804-38. Onslow Island, off Charles Island, coral, Jan. 23, 1938, 1 male, 1 female.

811-38. Barrington Island, coral, Jan. 26, 1938, 2 females, 1 young.

Measurements.—Largest male: length 15.8 mm, width 13.9 mm, cheliped 30.0 mm, chela 15.2 mm.

Color in life.—Chelae dusky dark brown, fingers white. Carapace light bluish gray. (Petersen). General appearance pink to magenta, the lightest coloring about the leg joints. Chelipeds much darker, almost black, dactyls pure white. A series of 17 remarkably uniform. (Garth)

Habitat.—Holes in narrow rock shelf and cave. (Finnegan)

Depth.—Shore to 6 fms.

Remarks.—This species, nowhere abundant, was occasionally obtained from coral, but more generally from ordinary rocky shore. Its flatness and slender, naked chelae serve to distinguish it from the sponge-covered young of *Mithrax (Mithrax) bellii* Gerstaecker, the species with which it is most readily confused in the field.

The largest series, consisting of 17 specimens, was collected at Black Beach, Charles Island. It was noticed that an unusually large proportion of the females were ovigerous, 6 of the 7 having a full complement of eggs.

Herbstia pyriformis (Bell)

Plate 63, Fig. 3

Rhodia pyriformis Bell, Proc. Zool. Soc. London, vol. 3, p. 170, 1835 (1836); Trans. Zool. Soc. London, vol. 2, p. 44, pl. 9, figs. 1-1c, 1836.

Herbstia pyriformis Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 10, p. 93, 1871. Rathbun, Bull. 129, U.S. Nat. Mus., p. 301, pl. 104, figs. 2 and 3; pl. 240, figs. 5-8, 1925.

Type locality.—Galapagos Islands, 6 fms, coral sand.

Type.—Not extant.

Range.—Known only from the type locality and from James Island (*Hassler* Expedition).

Diagnosis.—Carapace pyriform, posterior margin strongly produced, lateral margin with 4 spines. Ambulatory legs longer than chelipeds. A spine on palm. Meri of ambulatory legs without spines, red banded.

Material examined (14 specimens from 7 stations).—

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 1 young female.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 1 male, 3 young females.

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 1 large female.

194-34. Post Office Bay, Charles Island, coral from Onslow Island crater, Jan. 27, 1934, 2 females.

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 3 males (1 photographed).

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 2 females.

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 1 female.

Measurements.—Largest specimen, female: length 26.0 mm, width 19.7 mm, cheliped 26.3 mm, chela 11.8 mm, second ambulatory leg (the longest) 35 mm; largest male: length 21.4 mm, width 16.0 mm, cheliped 20.0 mm.

Color in life.—Carapace light ochre red on gastric and cardiac areas. Branchial and frontal portions Van Dyke red; marginal teeth white. A white triangular spot on postbranchial and intestinal regions. Merus of cheliped light vinaceous fawn with bands of vivid Van Dyke red. Dark

Van Dyke red bands at distal ends of merus and on carpus. Hand Pompeian red; movable finger carmine, tip orange yellow. Fixed finger similar, fading to white at tip. Ambulatory legs same as merus of cheliped. Propodus a shade darker with bands of Indian lake. Dactyl Indian lake; nail yellow. (Petersen)

Habitat.—Rocky shore.

Remarks.—*H. pyriformis* was considered a rarity by Hancock Expedition collectors, who were always on the alert for its telltale "peppermint stick" legs. The species had been known previously by the type specimen collected by Cuming *circa* 1829, no longer extant, and by the *Hassler* specimen, collected in 1872. Both of these specimens were males.

The young of the species are very hairy, this feature being especially noticeable on the last three segments of the ambulatory legs. The smallest specimen in the series measures 7 mm in length.

The female of *H. pyriformis* is now known and the range of the species is hereby extended to include six of the islands of the Galapagos group.

Genus **LISSA** Leach, 1815

Lissa aurivilliusi Rathbun

Plate 65, Figs. 3, 4

Lissa aurivilliusi Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 575, pl. 41, fig. 4, 1898; Proc. Washington Acad. Sci., vol. 4, p. 284, 1902; Bull. 129, U.S. Nat. Mus., p. 333, pl. 246, fig. 2, 1925. Crane, Zoologica, vol. 22, no. 3, p. 59, 1937.

Type locality.—Off Cape San Lucas, 31 fms.

Type.—USNM No. 21575.

Range.—From Magdalena Bay, Lower California *(Albatross),* to Cape San Lucas *(Albatross);* Galapagos Islands (Hopkins-Stanford Expedition); to 35 fms (Crane).

Atlantic analogue.—*L. bicarinata* Aurivillius.

Diagnosis.—Gastric elevation angular, continued posterolaterally as a sharp branchial crest. Posterior margin doubly concave; a cardiac elevation.

Material examined (18 specimens from 12 stations).—

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 1 young female.

169-34. Academy Bay, Indefatigable Island, 15-25 fms, Jan. 20, 1934, 1 female (photographed).

183-34. James Bay, James Island, 50-70 fms, Jan. 24, 1934, 2 young males.

187-34. Cartago Bay, Albemarle Island, 8-10 fms, Jan. 25, 1934, 1 young female.

193-34. Post Office Bay, Charles Island, 8-10 fms, Jan. 27, 1934, 2 females.

201-34. Off Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 1 male, 3 females.

204-34. West of Gardner Bay, Hood Island, 30 fms, Jan. 31, 1934, 1 male, 1 female.

308-35. Marchena Island, 3-5 fms, Dec. 3, 1934, 1 male.

322-35. Tagus Cove, Albemarle Island, 10 fms, Dec. 10, 1934, 1 female.

328-35. Tagus Cove, Albemarle Island, 14 fms, Dec. 10, 1934, 1 female.

341-35. Sulivan Bay, James Island, 20 fms, Dec. 12, 1934, 1 male.

356-35. Gardner Bay, Hood Island, 12-15 fms, Dec. 17, 1934, 1 female.

Measurements.—Photographed specimen: length 8.7 mm, width 7.4 mm.

Color in life.—From Gulf of California specimen: entire dorsal surface of carapace dull yellow orange with numerous indistinct darker small spots. Chelipeds as carapace, finger tips white. Ambulatory legs white with but little color. Ventral side pale gray with light touches of dull orange. (Petersen)

Habitat.—Rock, frequently covered with red algae; rock and sand; rock and shell; sand.

Depth.—3-70 fms.

Remarks.—A single specimen taken on a reef north of Tagus Hill by the Hopkins-Stanford Expedition appears to be the only previous Galapagos record for the species. It is now known to occur throughout the archipelago to a depth of 70 fms.

All Galapagos *Lissas* were subjected to careful scrutiny in the hope that some of them might prove to be *L. tuberosa,* encountered by Hancock Expeditions from the Gulf of California to Colombia along the mainland. However, none had the cristate legs and double crests on the carpus characteristic of this species.

Both sponge and bryozoan encrustations were observed on Galapagos specimens.

Subfamily MAJINAE
Genus THOE Bell, 1835
Thoe erosa Bell

Thoe erosa Bell, Proc. Zool. Soc. London, vol. 3, p. 171, 1835; Trans. Zool. Soc. London, vol. 2, p. 48, pl. 9, figs. 4, 4k-o, 1836. Rathbun, Bull. 129, U.S. Nat. Mus., p. 351, pl. 249, figs. 1-6 and synonymy, 1925.

Type locality.—Galapagos Islands, 7 fms, sandy mud.

Type.—Not extant.

Range.—Bay of Santa Elena, Ecuador (Nobili); Galapagos Islands (Bell).

Diagnosis.—Carapace depressed, posteriorly and laterally rounded, tuberculous. Rostrum minute, bifurcate. Only one anterior lobe on basal antennal article. Both rows of rectangular excavations on merus of cheliped fully developed. Fingers slender and widely gaping; a single tooth at basal third of movable finger.

Material examined.—None.

Remarks.—Judging from the writer's experience in collecting *Thoe sulcata* Stimpson at Socorro Island, Mexico, and in collecting *T. panamensis* Nobili on the mainland from Costa Rica to Gorgona Island, Colombia, *T. erosa* would most probably be encountered among sponge-covered rocks at extreme low tide. Since the type of collecting which yielded the two former species was the type most frequently pursued by *Velero III* collectors in the Galapagos Islands, it is difficult to understand why the Bell species, if present, was not uncovered.

Genus PITHO Bell, 1835

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Pitho*

A¹ Five anterolateral teeth, the second and third united at bases . . . . . *P. quinquedentata*

A² Six acute anterolateral teeth, the second and third separated at bases . . . . . *P. sexdentata*

Pitho quinquedentata Bell

Pitho quinquedentata Bell, Proc. Zool. Soc. London, vol. 3, p. 172, 1835. Rathbun, Bull. 129, U.S. Nat. Mus., p. 361, pl. 250, figs. 1-4, and synonymy, 1925.

Type locality.—Galapagos Islands, sandy mud, 6 fms.

Type.—Not extant.

Range.—Panama (A. Milne Edwards); Galapagos Islands (Bell).

Atlantic analogue.—*P. lherminieri* (Schramm).

Diagnosis.—Male carapace anteriorly broad, posteriorly narrow; female carapace broadened posteriorly as well. Front wide, rostral and inner orbital teeth in the same transverse line. Five lateral teeth, excluding outer orbital, the second and third fused at base, the fourth and fifth reduced in the male, in the female the fifth only.

Material examined.—None from the Galapagos Islands. The Hancock collections contain a considerable series of this species from Isabel Island, Mexico, to Bahia Honda, Panama.

Pitho sexdentata Bell

Pitho sexdentata Bell, Proc. Zool. Soc. London, vol. 3, p. 172, 1835. Rathbun,Bull. 129, U.S. Nat. Mus., p. 367, pl. 130, fig. 1; pl. 250, figs. 5-9, and synonymy, 1925. Sivertsen, Med. fra det Zool. Mus. Oslo, no. 38, p. 11, 1933. Crane, Zoologica, vol. 22, no. 3, p. 60, 1937.

Type locality.—Galapagos Islands, sandy mud, 6 fms.

Type.—Not extant.

Range.—From Santa Inez Bank, Gulf of California (Crane), to Galapagos Islands (Bell).

Atlantic analogue.—*P. mirabilis* (Herbst).

Diagnosis.—Carapace broadly rounded in both sexes, granulate and hairy. Front narrow, rostral teeth acute. Six lateral marginal teeth, exclusive of outer orbital, all acute, separated at their bases, the sixth reduced in size and at a higher level.

Material examined.—A cast from Galapagos Islands. The Hancock collections contain specimens from Manta and Cape San Francisco, Ecuador.

Remarks.—A cast of *P. sexdentata* was picked up by a crew member while beach combing. Since several days elapsed before it came to the attention of the carcinologists, it was impossible to assign to it a more exact locality than Galapagos.

Genus **MITHRAX** Latreille, 1817

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Mithrax*

A[1] Carapace without oblique branchial furrows (Subgenus Mithrax)

B[1] Rostral spines long, divergent; carapace longer than broad, spinulous . . . . . *M. (Mithrax) spinipes*

B[2] Rostral horns short, tuberculate or subtruncate; carapace broader than long . . . . . .

C¹ Carapace paved with smooth, flat granules; rostrum tuberculate; size large . . . *M. (Mithrax) bellii*

C² Carapace with 2 rows of lateral marginal spines, rostrum subtruncate; size small . . *M. (Mithrax) pygmaeus*

A² Carapace with oblique branchial furrows (Subgenus Mithraculus)

B¹ Three large anterolateral lobes; inner margin of entire cheliped laminated . . . *M. (Mithraculus) nodosus*

B² Two acute tubercules and a spine on anterolateral margin; carpus only of cheliped, laminated . . . . . *M. (Mithraculus) denticulatus*

Subgenus MITHRAX

Mithrax (Mithrax) spinipes (Bell)

Plate 65, Figs. 5, 6

Pisa spinipes Bell, Proc. Zool. Soc. London, vol. 3, p. 171, 1835 (1836); Trans. Zool. Soc. London, vol. 2, p. 50, pl. 9, figs. 6, 6s-u, 1836.

Mithrax (Mithrax) spinipes Rathbun, Bull. 129, U.S. Nat. Mus., p. 391, pl. 136, figs. 3 and 4; pl. 262, fig. 5, 1925. Boone, Zoologica, vol. 8, no. 4, p. 154, fig. 48, 1927. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 12, 1933. Crane, Zoologica, vol. 22, no. 3, p. 60, 1937.

Mithrax (Mithrax) mexicanus Glassell, Zoologica, vol. 21, no. 17, p. 213, 1936.

Type localities.—Galapagos Islands, 16 fms; Santa Elena, 6 fms.

Types.—Not extant.

Range.—From Gulf of California *(Albatross)* to Santa Elena, Ecuador, and the Galapagos Islands (Bell); 2½-33 fms.

Atlantic analogue.—*M. acuticornis* Stimpson.

Diagnosis.—Based on immature specimens: carapace elongate oval, spinulous, rostral horns long and divergent. A series of anterolateral spinules which develop into 5 lateral spines in the adult. Paired mesogastric tubercles of adult not always apparent in young specimens. No lateral angle, as in older specimens.

Material examined (3 specimens from as many stations).—

155-34. Tagus Cove, Albemarle Island, 50-60 fms, Jan. 15, 1934, 1 male.

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 1 male (photographed).

817-38. North of Hood Island, 140-160 fms, Jan. 29, 1938, 1 male.

Measurements.—Young male: length 11.3 mm, width 6.5 mm.

Color in life.—Carapace olive buff with yellowish tint. Touches of red around bases of spines. Eye dull dark purple. Cheliped pale cream buff with a few blotches of vermilion and green. Legs pale cream buff banded with deep olive buff with orange-red margins. (Petersen)

Habitat.—Sand, sand and shell; also one varied bottom marked "rock, coral, nullipore, and bryzoa."

Depth.—2½-160 fms.

Remarks.—*M. (M.) spinipes* is a companion species, in point of habitat, with *Anomalothir hoodensis* Garth, being encountered in both deep and shallow dredging. A depth of 160 fms, recorded on the 1938 cruise, represents a valuable extension of bathymetric range, the Albemarle Island record a new locality within the archipelago.

A Galapagos specimen of *M. (M.) spinipes* has been compared with the type of *M. (M.) mexicanus* Glassell (1936) by Miss Jocelyn Crane of the New York Zoological Society, who finds them identical. Miss Crane allows herself to be quoted to the effect that she has seen examples clearly intermediate in development of anterolateral spines, shape of carapace, and development of paired anteromesogastric tubercles between the two, which would indicate *M. (M.) mexicanus* to be the young of *M. (M.) spinipes.*

Mithrax (Mithrax) bellii Gerstaecker

Plate 66, Figs. 1, 2

Mithrax ursus Bell, Proc. Zool. Soc. London, vol. 3, p. 171, 1835 (1836) (not *Cancer ursus* Herbst, 1788); Trans. Zool. Soc. London, vol. 2, p. 52, pl. 10, figs. 2, 2c-e, 1836.

Mithrax bellii Gerstaecker, Arch. für Naturg., vol. 22, pt. 1, p. 112, 1856; name substituted for *M. ursus* Bell (not Herbst).

Mithrax (Mithrax) bellii Rathbun, Bull. 129, U.S. Nat. Mus., p. 403, pls. 142 and 143, 1925. Boone, Zoologica, vol. 8, no. 4, p. 155, fig. 49, 1927. Hult, Arkiv. för Zoologi, Band 30A, no. 5, p. 11, 1938.

Type locality.—Galapagos Islands.

Type.—Not extant.

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

Atlantic analogue.—*M. (M.) verrucosus* Milne Edwards.

Diagnosis.—Carapace paved with flat, round granules. Five tubercles on inner margin of wrist. Margin broken into numerous irregular tubercles.

Material examined (76 specimens from 28 stations).—

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 2 males, 2 females.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 1 large male.

48-33. Barrington Island, shore, Feb. 2, 1933, 1 young female.

65-33. Reef north of Tagus Hill, Albemarle Island, reef, Feb. 9, 1933, 2 males.

68-33. South of Cape Berkeley, Albemarle Island, shore, Feb. 10, 1933, 2 small males.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 1 male.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 3 females (1 photographed).

85-33. North Seymour Island, shore, Feb. 18, 1933, 1 male.

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 1 female, 1 young.

163-34. Black Beach, Charles Island, shore, Jan. 18, 1934, 1 large male.

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 3 males, 3 young.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 1 large male.

173-34. South Seymour Island, 5 fms, Jan. 22, 1934, 1 male.

175-34. North Seymour Island, shore, Jan. 22, 1934, 2 young.

188-34. Cartago Bay, Albemarle Island, shore, Jan. 25, 1934, 1 male.

199-34. Black Beach, Charles Island, shore, Jan. 30, 1934, 1 male.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 1 male.

313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 2 males, 2 females.

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 1 male.

350-35. South Seymour Island, shore, Dec. 13, 1934, 1 young.

351-35. South of Black Beach, Charles Island, shore, Dec. 14, 1934, 1 male.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 2 males, 2 females, 2 young.

784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 1 male, 2 females.

789-38. South Seymour Island, shore, Jan. 19, 1938, 3 males, 3 females, 3 young.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 1 female, 2 young.

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 6 males, 7 females.

803-38. Black Beach, Charles Island, shore, Jan. 23, 1938, 1 female, 1 young.

804-38. Onslow Island, off Charles Island, coral, Jan. 23, 1938, 1 young.

Measurements.—Largest female: length 53.7 mm, width 56.6 mm, cheliped 60.0 mm, chela 28.9 mm.

Color in life.—Frontal, gastric, and cardiac areas, tips of marginal teeth, and spines of carapace pansy purple. Branchial and hepatic regions dahlia purple. Cheliped light brick red at base to pansy purple at extremity; hand Pompeian red, tips of fingers white. Ambulatory legs similar to cheliped; nail cadmium orange. (Petersen)

Habitat.—Rocky shore.

Depth.—Shore to 6 fms.

Remarks.—Young individuals are invariably sponge encrusted, sometimes so heavily as to be totally unrecognizable. The sponge seems always to be of the same light gray color and delicate texture. Older specimens are completely naked and of the bright shades of red described above.

A small male from a reef north of Tagus Hill, Albemarle Island, compares in an interesting manner with a specimen of similar size of *Mithrax (Mithrax) spinipes* (Bell) from San Francisco Island, Gulf of California, Allan Hancock Expedition of 1936. This young male is spinulous: the rostral and orbital horns are acute like those of *spinipes* but are of relatively smaller size. On a key like Rathbun (1925, p. 380), based upon adult characters, the young *bellii* keys to *spinipes*. A 17.5 mm specimen clearly shows the transition from spines to the tubercles and granular pavement of the adult carapace. It is quite possible that a similar transition takes place in the case of *spinipes,* as indicated in the discussion of that species. However, we do not yet possess specimens of *spinipes* of size comparable to the tuberculate and granulate adults of *bellii;* that is, not unless the adults have been given another specific name, such as *Mithrax (Mithrax) orcutti* Rathbun, of which the young in turn are unknown.

Mithrax (Mithrax) pygmaeus Bell

Mithrax pygmaeus Bell, Proc. Zool. Soc. London, vol. 3, p. 172, 1835; Trans. Zool. Soc. London, vol. 2, p. 55, pl. 11, figs. 3, 3f-h, 1836.

Mithrax (Mithrax) pygmaeus Rathbun, Bull. 129, U.S. Nat. Mus., p. 406, pl. 262, figs. 1-4, 1925. Finnegan, Journ. Linn. Soc. London, Zool., vol. 37, no. 255, p. 624, 1931.

Type locality.—Panama, 10 fms, sand.

Type.—Not extant.

Range.—Perlas Islands, Panama (Garman); Galapagos Islands (Crossland).

Diagnosis.—Carapace smooth, depressed, broadly oval. Frontal lobes subtruncate, separated by a distinct V. Two rows of lateral marginal spines. Eyes prominent, a minute preocular spine. Basal antennal article broad, marginal teeth 2, flagellum half as long as carapace.

Material examined.—None from the Galapagos Islands. Hancock collections contain specimens from Bahia Honda, Panama, to La Plata Island, Ecuador.

Subgenus MITHRACULUS
Mithrax (Mithraculus) nodosus Bell

Plate 68, Fig. 1

Mithrax nodosus Bell, Proc. Zool. Soc. London, vol. 3, p. 171, 1835 (1836; Trans. Zool. Soc. London, vol. 2, p. 53, pl. 11, figs. 1-1b, 1836.

Mithrax (Mithraculus) nodosus Rathbun, Bull. 129, U.S. Nat. Mus., p. 429, pl. 155, and synonymy, 1925. Boone, Zoologica, vol. 8, no. 4, p. 158, fig. 50, 1927. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 625, 1931. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 12, 1933. Hult, Arkiv för Zoologi, Band 30A, no. 5, p. 12, 1938. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 25, 1939.

Type locality.—Galapagos Islands.

Type.—Not extant.

Range.—Galapagos Islands (Bell); Chile (Miers).

Diagnosis.—Carapace with smooth, oblique, branchial furrows. Three large anterolateral lobes. Inner margin of cheliped laminated.

Material examined (850 specimens from 57 stations).—

11-32. Conway Bay, Indefatigable Island, Jan. 12, 1932, 1 male.

24-33. Gardner Bay, Hood Island, shore, Jan. 24, 1933, 15 males.

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 20 males, 16 females (6 ovig.).

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 11 males, 20 females (15 ovig.).

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 11 males, 6 females (4 ovig.).

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 7 males, 6 females (2 ovig.).

42-33. Opposite Kicker Rock, Chatham Island, shore, Jan. 31, 1933, 3 males, 7 females (5 ovig.).

48-33. Barrington Island, shore, Feb. 2, 1933, 7 males, 9 females (1 ovig.).

49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 15 males, 12 females (5 ovig.).

52-33. Academy Bay, Indefatigable Island, shore, Feb. 4, 1933, 8 males, 6 females (2 ovig.).

56-33. Flamingo Bay, Charles Island, shore, Feb. 5, 1933, 8 males.

62-33. Black Bight, Albemarle Island, shore, Feb. 8, 1933, 2 males, 1 female.

65-33. Reef north of Tagus Hill, Albemarle Island, reef, Feb. 9, 1933, 3 males, 3 females.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 5 males, 4 females.

71-33. James Bay, James Island, shore, Feb. 12, 1933, 16 males, 8 females (2 ovig.).

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 6 males, 9 females (6 ovig.).

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 34 males, 22 females (15 ovig.).

82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 9 males, 6 females.

85-33. North Seymour Island, shore, Feb. 18, 1933, 6 males, 1 female.

88-33. South Seymour Island, shore, Feb. 19, 1933, 9 males, 2 females.

93-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 2 females, 2 young.

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 11 males, 17 females (5 ovig.).

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 7 males, 7 females (5 ovig.).

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 7 males, 11 females (4 ovig.).

153-34. Mangrove Point, Narborough Island, shore, Jan. 14, 1934, 2 females.

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 2 males, 1 female.

161-34. Black Beach, Charles Island, 3 fms, Jan. 17, 1934, 2 males, 1 female.

163-34. Black Beach, Charles Island, shore, Jan. 18, 1934, 4 males, 8 females.

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 13 males, 8 females.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 16 males, 19 females.

174-34. South Seymour Island, shore, Jan. 22, 1934, 2 males.
175-34. North Seymour Island, shore, Jan. 22, 1934, 3 males, 6 females.
179-34. Bartholomew Island, James Island, shore, Jan. 23, 1934, 18 males, 14 females.
188-34. Cartago Bay, Albemarle Island, shore, Jan. 25, 1934, 1 female.
199-34. Black Beach, Charles Island, shore, Jan. 30, 1934, 2 males, 8 females (6 ovig.).
202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 15 males, 13 females.
306-35. Marchena Island, shore, Dec. 2, 1934, 6 males, 3 females.
312-35. Black Beach, Charles Island, shore, Dec. 5, 1934, 1 specimen.
313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 8 males, 6 females (3 ovig.).
314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 14 males, 22 females (7 ovig.).
315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 2 males, 1 female.
333-35. James Bay, James Island, shore, Dec. 11, 1934, 9 males, 7 females (2 ovig.), in poor condition.
342-35. Bartholomew Island near James Island, shore, Dec. 12, 1934, 1 specimen.
343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 22 males, 13 females (7 ovig.).
350-35. South Seymour Island, shore, Dec. 13, 1934, 8 males, 6 females (4 ovig.).
351-35. South of Black Beach, Charles Island, shore, Dec. 14, 1934, 6 males, 4 females (1 ovig.).
354-35. Wreck Bay, Chatham Island, shore, Dec. 15, 1934, 1 male.
358-35. Gardner Bay, Hood Island, shore, Dec. 17, 1934, 8 males, 3 females (1 ovig.).
359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 23 males, 14 females (10 ovig.).
782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 5 males, 1 female, 11 young.
784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 5 males, 4 females (1 ovig.).
789-38. South Seymour Island, shore, Jan. 19, 1938, 5 males, 12 females (8 ovig.), 5 young.
796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 18 males, 17 females (16 ovig.), 6 young.

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 7 males, 3 females (2 ovig.), 1 young.

803-38. Black Beach, Charles Island, shore, Jan. 23, 1938, 2 young.

804-38. Onslow Island, off Charles Island, coral, Jan. 23, 1938, 1 female.

-38. Academy Bay, Indefatigable Island, shore, Jan. 25, 1938, 1 male, Karl Kübler, collector.

Measurements.—Largest male: length 30.1 mm, width 38.2 mm, cheliped 57.0 mm, chela 30.9 mm, dactyl 18.6 mm, height of gape 3.6 mm.

Color in life.—Uniform purplish brown. Hairs on legs and about antennae yellow, in sunlight yellow green. (Garth)

Habitat.—Shore, both in coral and under rocks.

Depth.—Although predominately a shore species, *M. nodosus* has been recorded to 12 fms.

Remarks.—*M. nodosus* was collected at a greater number of stations than any other species excepting *Teleophrys cristulipes* Stimpson. It is the most abundant spider crab in the Galapagos Islands, being taken both in coral and in ordinary rock turning at low tide. In the *Pocillopora* coral colony it occupies an analogous situation to *M. (Mithraculus) areolata* Lockington of the Bay of Panama, both in relative abundance and as the sole representative of its subgenus. From the experience of the Allan Hancock Expeditions, *M. nodosus* may be considered a true Galapagos endemic species, none having been encountered on the mainland coast as far south as the bays of San Juan and San Nicolas, Peru, well within the limits of the Chilean fauna.

Mithrax (Mithraculus) denticulatus Bell

Mithrax denticulatus Bell, Proc. Zool. Soc. London, vol. 3, p. 172, 1835; Trans. Zool. Soc. London, vol. 2, p. 54, pl. 11, fig. 2, 1836.

Mithrax (Mithraculus) denticulatus Rathbun, Bull. 129, U.S. Nat. Mus., p. 428, pl. 154, figs. 2-3, and synonymy, 1925.

Type locality.—Galapagos Islands, under stones.

Type.—Not extant.

Range.—From Cape San Lucas, Lower California (Xantus), to Ecuador (Nobili); Galapagos Islands (Bell).

Atlantic analogue.—*M. (Mithraculus) coryphe* (Herbst).

Diagnosis.—Carapace wide, breadth exceeding length by nearly one half. Two acute tubercles and a spine on lateral margin, the latter opposite greatest width of carapace. Inner margin of carpus laminate.

Material examined.—None from the Galapagos Islands. The Hancock collections contain a long series of this species ranging from Espiritu Santo Island, Gulf of California, to Manta, Ecuador.

Genus **TELEOPHRYS** Stimpson, 1860

Teleophrys cristulipes Stimpson

Plate 68, Figs. 5, 6

Teleophrys cristulipes Stimpson, Ann. Lyc. Nat. Hist., New York, vol. 7, p. 190 (62), pl. 2, fig. 2, 1860. Rathbun, Proc. Washington Acad. Sci., vol. 4, no. 8, p. 284, 1902; Bull. 129, U.S. Nat. Mus., p. 441, pl. 159, figs. 1, 2, and 7; pl. 262, fig. 7, and synonymy, 1925. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 625, 1931. Crane, Zoologica, vol. 22, no. 3, p. 61, 1937. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 25, 1939.

Teleophrys diana Boone, Zoologica, vol. 8, no. 4, p. 162, fig. 52, 1927. Sivertsen, Med. fra det Zool. Mus. Oslo, nr. 38, p. 13, 1933. Hult, Arkiv för Zoologi, Band 30A, no. 5, p. 12, 1938.

Teleophrys tumidus Rathbun, Bull. 129, U.S. Nat. Mus., p. 442, part (the Galapagos specimen), 1925. Boone, Zoologica, vol. 8, no. 4, p. 166, 1927.

Type locality.—Cape San Lucas, Lower California.

Type.—MCZ No. 1226.

Range.—From Arena Bank, Gulf of California *(Zaca),* to Gorgona Island, Colombia (Crossland); Galapagos Islands (Hopkins-Stanford Expedition).

Atlantic analogue.—*T. pococki* Rathbun.

Diagnosis.—Carapace rotund, front low and arching, hepatic region prominent, margins spinulous. Second antennal segment long and cylindrical.

Material examined (1,231 specimens from 62 stations).—

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 30 males, 49 females (38 ovig.).

28-33. Gardner Bay, Hood Island, 2 fms, Jan. 25, 1933, 10 males, 11 females (10 ovig.), 1 young.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 54 males, 94 females (73 ovig.), 26 young.

31-33. Gardner Bay, Hood Island, 4 fms, Jan. 26, 1933, 1 male, 1 female, 4 young.

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 7 males, 7 ovig. females.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 6 males, 5 ovig. females, 3 young.

46-33. Barrington Island, 4-10 fms, Feb. 2, 1933, 4 males (1 photographed), 3 females (2 ovig.).

47-33. Barrington Island, 2 fms, Feb. 2, 1933, 11 males, 6 females (4 ovig.), 8 young.

48-33. Barrington Island, shore, Feb. 2, 1933, 1 male.

-33. Post Office Bay, Charles Island, fish trap, Feb. 5, 1933, 1 male.

59-33. Off Cormorant Bay, Charles Island, 13 fms, Feb. 6, 1933, 17 males, 12 females (7 ovig.), 32 young.

-33. Post Office Bay, Charles Island, "roach" trap on fish trap, Feb. 6, 1933, 1 male.

62-33. Black Bight, Albemarle Island, shore, Feb. 8, 1933, 4 males, 1 female.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 129 males, 131 females (114 ovig.), 4 young, 1 fragment.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 4 males, 10 females (8 ovig.).

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 4 males, 9 ovig. females.

80-33. Duncan Island, coral, Feb. 15, 1933, 12 males, 12 females (8 ovig.).

85-33. North Seymour Island, shore, Feb. 18, 1933, 3 young males.

94-33. Darwin Bay, Tower Island, coral, Feb. 22, 1933, 7 males, 8 females (7 ovig.).

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 3 males.

97-33. Darwin Bay, Tower Island, coral, Feb. 24, 1933, 7 males, 4 females (3 ovig.).

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 6 males, 6 females (5 ovig.).

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 1 ovig. female.

101a-33. Darwin Bay, Tower Island, coral, Feb. 26, 1933, 4 males, 1 female.

152-34. Tagus Cove, Albemarle Island, shore, Jan. 14, 1934, 18 males, 16 females (9 ovig.), 5 young.

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 6 males, 6 ovig. females.

161-34. Charles Island, 3 fms, Jan. 17, 1934, 3 males, 5 females (4 ovig.), 2 young.

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 4 males, 12 females (11 ovig.).

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 1 male.

168a-34. Academy Bay, Indefatigable Island, coral, Jan. 20, 1934, 2 males, 3 females (2 ovig.).

180-34. Sulivan Bay, James Island, 3 fms, Jan. 23, 1934, 2 males, 1 female.

189-34. Cartago Bay, Albemarle Island, coral, Jan. 25, 1934, 3 males, 1 young.

194-34. Post Office Bay, Charles Island, coral from Onslow Island crater, Jan. 27, 1934, 2 males, 5 females (4 ovig.).

199-34. Black Beach, Charles Island, shore, Jan. 30, 1934, 2 males.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 4 males, 12 females (10 ovig.).

309-35. Marchena Island, 8 fms, Dec. 3, 1934, 2 specimens.

310-35. Marchena Island, 15 fms, Dec. 3, 1934, 1 young female.

313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 12 males, 4 females.

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 1 ovig. female.

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 11 males, 20 females (15 ovig.).

322-35. Tagus Cove, Albemarle Island, 10 fms, Dec. 10, 1934, 1 ovig. female.

333-35. James Bay, James Island, shore, Dec. 11, 1934, 11 males, 2 females.

340-35. Sulivan Bay, James Island, 8 fms, Dec. 12, 1934, 2 males, 1 female.

341-35. Sulivan Bay, James Island, 20 fms, Dec. 12, 1934, 1 male.

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 23 males, 17 females (11 ovig.), 1 young.

344-35. Bartholomew Island near James Island, coral, Dec. 12, 1934, 1 male, 3 ovig. females.

351-35. South of Black Beach, Charles Island, shore, Dec. 14, 1934, 1 male, 1 female.

355-35. Gardner Bay, Hood Island, 12 fms, Dec. 17, 1934, 2 males, 3 females (2 ovig.).

356-35. Gardner Bay, Hood Island, 12-15 fms, Dec. 17, 1934, 1 male, 2 ovig. females, 2 young.

357-35. Gardner Bay, Hood Island, coral, Dec. 17, 1934, 3 males, 2 females.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 26 males, 19 females (12 ovig.).

782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 4 males, 2 ovig. females, 2 young.

783-38. Darwin Bay, Tower Island, 40-70 fms, Jan. 16, 1938, 2 ovig. females.

784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 7 males, 5 females (3 ovig.).

785-38. Darwin Bay, Tower Island, 20-40 fms, Jan. 17, 1938, 2 males, 2 females (1 ovig.).

789-38. South Seymour Island, shore, Jan. 19, 1938, 25 males, 18 females (15 ovig.).

790-38. "Velero Bay," South Seymour Island, 10-20 fms, Jan. 19, 1938, 1 male.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 17 males, 10 females (3 ovig.).

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 5 males, 4 females (3 ovig.).

804-38. Charles Island, coral from Onslow Island crater, Jan. 23, 1938, 5 males, 6 females (5 ovig.), 1 young.

811-38. Barrington Island, coral, Jan. 26, 1938, 23 males, 27 females (17 ovig.).

811a-38. Barrington Island, *Pavona* coral, Jan. 26, 1938, 3 males, 4 females.

Measurements.—Male: length 12.0 mm, width 13.4 mm, cheliped 20.0 mm, chela 10.8 mm.

Color in life.—Ground color of carapace a rich dull magenta purple. Lacelike designs on frontal and branchial regions white tinged with red. Ground color of chelipeds and ambulatory legs creamy white; patterns similar to those of carapace but much paler. Crest of hand dark magenta purple. Fingers banded with various shades of orange, tips white. Legs also have blotches of dull yellow. Dactyls golden. (Petersen)

Habitat.—Rocky shore or *Pocillopora* coral.

Depth.—Shore to 20 fms; exceptionally 40-70 fms.

Remarks.—This most abundant spider crab was taken at a greater number of stations than any other Galapagos brachyuran. It is exceeded in number of individual specimens only by two of the Xanthidae, the free-living *Leptodius cooksoni* Miers and the *Pocillopora*-dwelling *Trapezia cymodoce ferruginea* Latreille.

The remarks of Finnegan (1931) concerning the variability of this species and the difference between those collected ashore and those taken in corals are pertinent in the light of the experience of *Velero III* collectors. The larger specimens which stray beyond the protecting branches of the *Pocillopora* are almost invariably smooth legged and lumpy of carapace, while smaller individuals cracked from coral have cristate legs and spinous lateral margins.

Since *Teleophrys tumidus* (Cano) has been twice recorded as from the Galapagos Islands, once by Rathbun (1925, p. 443) and once by Boone (1927, p. 166), it was assumed that specimens of this species would be found among the 1,231 specimens from 62 collecting stations which constitute the *Velero III* Galapagos series of *Teleophrys*. Indeed, in the early years of this study specimens thought to be *tumidus* were taken to the U.S. National Museum for comparison with material determined by Miss Rathbun. Substantial agreement was found between them and the Hopkins-Stanford Expedition specimen (USNM Cat. No. 25678) upon which the first Galapagos record of *tumidus* rests, and on this basis the Hancock series was laboriously separated into *"cristulipes"* and *"tumidus"* fractions, not, however, without an inseparable residue.

The introduction of new material obtained by Hancock Expeditions of 1935 and 1938 in Peru, Cano's type locality, revealed differences between Galapagan and Peruvian specimens which are based upon structural, rather than superficial characters. The Hopkins-Stanford specimen, re-examined in this light, proved to be no more than a particularly cristate *cristulipes,* which was indeed the original Rathbun determination (1902). As a result, the entire Hancock Galapagos series is now referred to *cristulipes,* and doubt is expressed concerning the occurrence of *tumidus* outside of Peruvian waters.

The differences between *cristulipes* and *tumidus,* as represented by Galapagan and Peruvian specimens, respectively, are, in the order of relative importance, (1) the long, cylindrical second free antennal segment of *cristulipes* as compared to the short, broad segment of *tumidus,* (2) the low, arched front of the adult *cristulipes* as compared to the elongated front and closely approximated rostral horns of *tumidus,* (3) the less prominent branchial and more prominent hepatic region of *cristulipes,* giving it a rotund carapace as compared to the more triangular one of *tumidus,* and (4) the absence of a lateral propodal flange in *cristulipes,* although its place is sometimes occupied by a low tubercle in Galapagos specimens. The remaining characters mentioned by Rathbun (1925, p. 442), such as number of anterolateral spines or spinules, proportionate number of tubercles and granules on the carapace, and entire or dentate margin of the basal antennal article, are subject to considerable variation even among adult specimens.

Genus **STENOCIONOPS** (Leach MS.) Desmarest, 1823

Key to the Galapagos Species of the Genus *Stenocionops*

A¹ 9 median spines and 3 lateral spines . . . . *S. triangulata*
A² 8 median spines and 4 or 5 lateral spines . . . . *S. ovata*

Stenocionops triangulata (Rathbun)

Plate 67, Figs. 1, 2; Plate 68, Fig. 2

Pericera triangulata Rathbun, Proc. U.S. Nat. Mus., vol. 15, p. 246, pl. 32, fig. 1, 1892.

Stenocionops triangulata Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 577, 1898; Bull. 129, U.S. Nat. Mus., p. 461, pl. 165, fig. 1; pl. 266, fig. 1, 1925.

Type locality.—Gulf of California, 29 fms.

Type.—USNM No. 16066.

Range.—West coast of Lower California, Gulf of California *(Albatross);* Bay of Panama *(Albatross);* 13-51 fms.

Diagnosis.—From young specimens: nine median spines and a hepatic spine; 3 marginal spines; rostrum one-sixth carapace length, horns strongly divergent.

Material examined (8 specimens from 6 stations).—

143-34. Wenman Island, 100-150 fms, Jan. 11, 1934, 1 large male (photographed, pl. 67).

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 1 young male (photographed, pl. 68).

317-35. Off Gordon Rocks, Indefatigable Island, 25-30 fms, Dec. 8, 1934, 1 female.

328-35. Tagus Cove, Albemarle Island, 14 fms, Dec. 10, 1934, 1 male.

355-35. Gardner Island, Hood Island, 12 fms, Dec. 17, 1934, 2 specimens.

356-35. Gardner Bay, Hood Island, 12-15 fms, Dec. 17, 1934, 2 males.

Measurements.—Largest male: length 40.0 mm, width 32.9 mm, width between preorbital spines 14.8 mm, cheliped 33.5 mm, chela 14.9 mm, rostrum 5.2 mm.

Habitat.—Sand and coral, coral and nullipore.

Depth.—12-150 fms.

Remarks.—From the standpoint of previous records, the reasonable expectation was that *Stenocionops ovata* (Bell) would be found, since its type locality is Galapagos Islands. However, the smaller specimens all fit the description of *S. triangulata* (Rathbun) much better. The measured specimen from Wenman Island, of moderately large size, differs from the young in ways characteristic for the members of the genus. Sufficient difference between it and mainland *S. triangulata* of like size has been noted to suggest the possibility that it may be the adolescent *S. ovata,* which is known only from the description and figure of a young specimen.

In the absence of long series showing growth changes, the writer prefers to refer all Hancock-collected *Stenocionops* from the Galapagos Islands to *S. triangulata,* while calling attention to this discrepancy.

Stenocionops ovata (Bell)

Pericera ovata Bell, Proc. Zool. Soc. London, vol. 3, p. 173, 1835; Trans. Zool. Soc. London, vol. 2, p. 60, pl. 12, figs. 5, 5o-q, 1836.

Stenocionops ovata Rathbun, Proc. U.S. Nat. Mus., vol. 38, p. 574, 1910; Bull. 129, U.S. Nat. Mus., p. 459, pl. 264, figs. 5-7, 1925.

Type locality.—Galapagos Islands.

Type.—Not extant.

Range.—Known only from the Galapagos Islands (Bell).

Diagnosis.—Eight median spines and a hepatic spine; 4 or 5 marginal spines. Rostrum one-fifth carapace length, horns strongly divergent. (From Bell's description.)

Material examined.—None, unless the Wenman Island specimen mentioned above should prove to be of this species.

Remarks.—See *Remarks* under the preceding *S. triangulata.*

Genus MICROPHRYS Milne Edwards, 1851

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Microphrys*

A¹ No flattened, imbricated lobes on the lateral margins of the carapace . . . . . *M. triangulatus*

A² Two flattened, imbricated lobes on the lateral margins of the carapace

B¹ Carapace considerably longer than broad; 2 spines at widest part of branchial region . . . . . *M. platysoma*

B² Carapace little longer than broad, hairy; 4 spines on each branchial region . . . . . *M. aculeatus*

Microphrys aculeatus (Bell)

Plate 63, Fig. 5

Pisa aculeata Bell, Proc. Zool. Soc. London, vol. 3, p. 171, 1835 (1836); Trans. Zool. Soc. London, vol. 2, p. 50, pl. 9, fig. 7, 1836.

Microphrys aculeatus A. Milne Edwards, Crust. Reg. Mex., p. 63, 1875. Rathbun, Bull. 129, U.S. Nat. Mus., p. 500, pl. 271, fig. 1, and synonymy, 1925. Boone, Zoologica, vol. 8, no. 4, p. 169, fig. 55, 1927. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 13, 1933.

Type locality.—Galapagos Islands.

Type.—Not extant.

Range.—Ecuador (Nobili); Peru (Coker); Galapagos Islands (Bell).

Diagnosis.—Two imbricated, flattened lobes on the side walls of the carapace. Typically 4 anterolateral spines. No lobe on basal antennal article below the acuminate spine.

Material examined (14 specimens from 9 stations).—

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 1 female (photographed).

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 1 ovig. female.

169-34. Academy Bay, Indefatigable Island, 15-25 fms, Jan. 20, 1934, 1 male.

199-34. Black Beach, Charles Island, shore, Jan. 30, 1934, 1 ovig. female.

313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 1 female.

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 5 specimens.

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 1 male, 1 young.

351-35. South of Black Beach, Charles Island, shore, Dec. 14, 1934, 1 male.

789-38. South Seymour Island, shore, Jan. 19, 1938, 1 female.

Measurements.—Largest female: length 15.6 mm, width 14.0 mm, cheliped 12.8 mm, chela 6.4 mm.

Habitat.—Rocky shore.

Remarks.—*M. aculeatus* is a rarely encountered shoreline species. Its discovery by *Velero III* collectors never failed to arouse comment because of the beauty and variety of its bryozoan and coralline encrustations.

Known previously from Tagus Cove and Hood and Charles Islands, its range has been extended to Indefatigable and adjacent South Seymour Islands. *M. aculeatus* is one of the very few species common to the Galapagos Islands and Peru.

Microphrys triangulatus (Lockington)

Plate 63, Fig. 6

Mithraculus triangulatus Lockington, Proc. California Acad. Sci., vol. 7, p. 73 (11), 1876 (1877).

Microphrys triangulatus Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 578, 1898; Bull. 129, U.S. Nat. Mus., p. 505, pl. 177, 1925.

Microphrys branchialis Rathbun, Proc. Washington Acad. Sci., vol. 4, p. 285, 1902 (part: Galapagos specimens).

Type locality.—Gulf of California.

Type.—Not extant.

Range.—From Agua Verde Bay to Cerralvo Island, Gulf of California *(Albatross);* Galapagos Islands (Rathbun, as *M. branchialis*); shallow water to 10 fms.

Diagnosis.—Carapace short, broad, nodose. Basal article of antenna with 3 marginal teeth. Branchial region swollen.

Material examined (57 specimens from 12 stations).—

148-34. Tagus Cove, Albemarle Island, 12-15 fms, Jan. 13, 1934, 1 male, 5 females (4 ovig.).

149-34. Tagus Cove, Albemarle Island, 20 fms, Jan. 13, 1934, 1 male, 2 females.

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 5 males, 4 females, 1 carapace.

169-34. Academy Bay, Indefatigable Island, 15-25 fms, Jan. 20, 1934, 1 male, 1 female, 1 young.

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 4 males (1 photographed), 2 females.

193-34. Post Office Bay, Charles Island, 8-10 fms, Jan. 27, 1934, 5 males, 6 females, 3 young.

197-34. Off Post Office Bay, Charles Island, 35-40 fms, Jan. 29, 1934, 1 male.

341-35. Sulivan Bay, James Island, 20 fms, Dec. 12, 1934, 1 male, 1 female.

352-35. Wreck Bay, Chatham Island, 35 fms, Dec. 15, 1934, 1 male.

355-35. Gardner Island, Hood Island, 12 fms, Dec. 17, 1934, 3 males.

356-35. Gardner Bay, Hood Island, 12-15 fms, Dec. 17, 1934, 4 specimens.

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 3 males, 2 females.

Measurements.—Largest male: length 14.5 mm, width 13.8 mm, cheliped 25.9 mm, chela 13.2 mm, dactyl 6.2 mm, height of gape 1.8 mm.

Color in life.—Carapace carmine, slightly more intense on frontal areas. Antenna banded with same color. Eye dark green. A few white spots scattered on carapace, especially around spines. Cheliped also carmine with a few white spots. Fingers carmine, white banded. Ambulatory legs also carmine, banded with white. (Petersen)

Habitat.—Rock, frequently with red algae attached; rock and sand; one record of coral, nullipore, and rock.

Depth.—Shoal water to 40 fms.

Sex variation.—Adult male has well-developed chelipeds, broad fingers, wide gape.

Remarks.—*Velero III* records considerably extend the range of this species within the insular group, it being known previously from but two specimens taken at Tagus Cove, Albemarle Island, by the Hopkins-Stanford Expedition. *M. triangulatus* is the commonly dredged *Microphrys* of the Galapagos Islands, *M. aculeatus* the shore-dwelling species.

The known depth is hereby increased from 10 to 40 fms.

Microphrys platysoma (Stimpson)

Plate 68, Figs. 3, 4

Milnia platysoma Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 180, 1860.

Microphrys platysoma A. Milne Edwards, Crust. Reg. Mex., p. 62, 1875. Rathbun, Bull. 129, U.S. Nat. Mus., p. 497, pl. 176, figs. 1 and 2, and synonymy, 1925. Crane, Zoologica, vol. 22, no. 3, p. 63, 1937. *Not* Rathbun, Proc. Washington Acad. Sci., vol. 4, no. 8, p. 285, 1902.

Type locality.—Cape San Lucas, Lower California.

Type.—Not extant.

Range.—From Patos Island, Gulf of California (California Academy of Sciences), to Panama (Meek and Hildebrand); Salinas, Ecuador (Schmitt, unpublished); low tide to 4½ fms.

Atlantic analogue.—*M. antillensis* Rathbun.

Diagnosis.—Two imbricated, flattened lobes on the sides of the carapace. Two branchial spines on each side in the same transverse line. A lobe on the basal antennal article below the single spine.

Material examined.—

783-38. Darwin Bay, Tower Island, 40-70 fms, Jan. 16, 1938, 2 young (1 photographed).

Measurements.—Young specimen: length 6.3 mm, width 5.0 mm.

Habitat.—White sand and rock.

Depth.—Low tide to 70 fms.

Remarks.—In view of the fact that *M. aculeatus* is invariably a shore-collected species, Miss Rathbun (1925) was undoubtedly right in referring the Hopkins-Stanford *"platysoma"* to that species, since it was collected on a reef north of Tagus Hill, a shore locality. The Hancock specimens were dredged in 40-70 fms, and, although not mature, show the two imbricated lobes clearly. Because of the depth at which they were obtained, thy could scarcely be *aculeatus,* and the only other Pacific *Microphrys* with two imbricated lobes is *platysoma.*

Genus **TYCHE** Bell, 1835
Tyche lamellifrons Bell
Plate 54, Figs. 1-6

Tyche lamellifrons Bell, Proc. Zool. Soc. London, vol. 3, p. 173, 1835 (1836); Trans. Zool. Soc. London, vol. 2, p. 58, pl. 12, figs. 3, 3f-j, 1836. Rathbun, Bull. 129, U.S. Nat. Mus., p. 508, pl. 273, figs. 1-6, and synonymy, 1925. Crane, Zoologica, vol. 22, no. 3, p. 64, 1937.

Type locality.—Panama.

Type.—In Brit. Mus.

Range.—Gulf of California *(Albatross)* to Panama (Bell); to a depth of 29 fms (Crane).

Atlantic analogue.—*T. emarginata* White.

Diagnosis.—Preorbital horns divergent, exceeding rostral horns. Posterior margin of carapace faintly trilobate. Orbits concealing eyestalks to extremities.

Material examined (6 specimens from 6 stations).—

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 1 female (illustrated).

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 1 male (illustrated in part).

311-35. Marchena Island, 20 fms, Dec. 3, 1934, 1 young.

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 1 male.

355-35. West of Gardner Island, Hood Island, 12 fms, Dec. 17, 1934, 1 male.

784-35. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 1 young.

Measurements.—Largest specimen, female: length 29.0 mm, width 18.0 mm; male: length 24.2 mm, width 15.0 mm, cheliped 19.0 mm, chela 9.1 mm.

Color in life.—A young specimen: carapace uniform sudan brown. Eyestalk amber, eye buff yellow. Cheliped same as carapace but hand a tone lighter, color fading gradually to very pale tips. Ambulatory legs lighter than carapace; nail of dactyl clear pale amber. (Petersen)

Habitat.—Sandy bottom (Bell) with weed (Crane). *Velero III* specimens were all taken either on rocky shore, or with tangles, indicating rocky bottom.

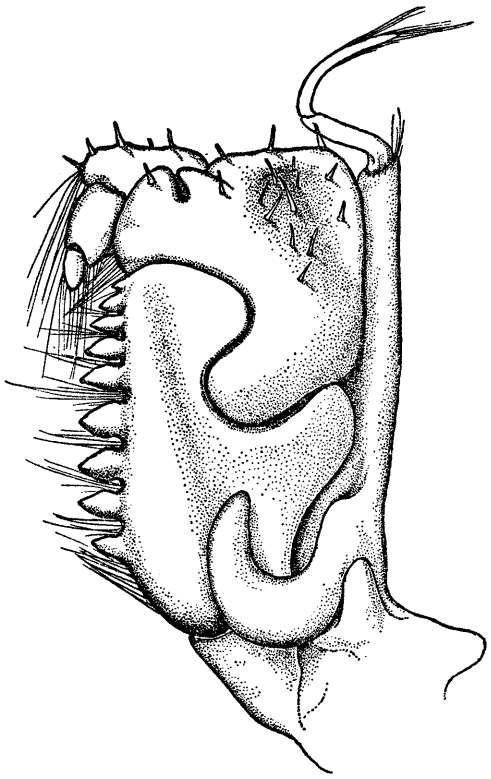
Depth.—Shore to 29 fms.

Remarks.—An adult female, measuring 29 mm in length by 18 mm in width, appears to be the largest specimen on record. The preorbital horns exceed the rostral and are strongly divergent, as in the Atlantic species, *T. emarginata* White, thus differing from the diagnostic char-

acters given by Rathbun (1925, p. 509) and requiring supplementary description which can best be given by a point-by-point comparison with the Atlantic species.

In comparing the above-mentioned female of *Tyche lamellifrons* with a female specimen of *T. emarginata* loaned by the U.S. National Museum (Cat. No. 46770) and a male with loaned male No. 46772, the following differences became apparent:

1. The rostral horns are parallel in *lamellifrons* and are almost joined half way to their extremities by protuberances which almost, if not actually, touch one another on the midline. The rostral horns of *emarginata,* on the other hand, are strongly divergent from their bases and have no suggestion of such protuberances.



TEXT FIG. 1
Left outer maxilliped of *Tyche emarginata* White

2. The orbital horns of both species are divergent, although less strongly so in *T. lamellifrons,* and in both they extend beyond the rostral horns. Lines drawn through their long axes would cross at the gastric level in *emarginata* and at the cardiac level in *lamellifrons* because of the more divergent angle taken by them in the former species.

3. The posterior margin of the carapace of *lamellifrons* is faintly trilobate, that of *emarginata* strongly bilobate and lamellate.

4. Because of these posterior lobes and the greater length of the rostral and orbital horns, the proportion of length to breadth of carapace appears greater in *emarginata* than in *lamellifrons,* particularly in adult male specimens.

5. The ambulatory legs of *lamellifrons* are shorter and stouter than those of *emarginata.*

6. The exopodite of the third maxilliped of *emarginata* has a basal protuberance which recurves to cover the base of the ischium. The merus inserts deeply into the outer distal portion of the ischium by a similar, but less developed tongue or flange. The inner margin of the ischium is strongly dentate. (See text fig. 1.)

In *lamellifrons* the basal projection of the exopodite does not recurve to cover the base of the ischium, the merus does not insert so deeply into the ischium, the inner margin of which is nondentate.

7. The first free antennal segment in *lamellifrons* is flattened, in *emarginata* it is cylindrical.

8. The sternal plastron of *emarginata* is deeply indented and there are 2 strong tubercles, one on either side of the base of the last abdominal segment in the male. The sternum of *lamellifrons* is flat with but a slight tubercle opposite the last abdominal segment.

T. lamellifrons is now recorded from the Galapagos Islands.

Family *PARTHENOPIDAE*

Subfamily PARTHENOPINAE

Genus **PARTHENOPE** Weber, 1795

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Parthenope*

A¹ Chelipeds more than twice as long as carapace; carapace broadly triangular, sides rounded . . (Subgenus Platylambrus)
  B¹ Three large tubercles on posterior margin, one of which is median . . . . . *P. (Platylambrus) exilipes*
A² Chelipeds less than twice as long as carapace . . . . . (Subgenus Pseudolambrus)
  B¹ Anterolateral margins without an abrupt angle; upper border of chela with 8 or 9 strong teeth *P. (Pseudolambrus) triangula*

Subgenus PLATYLAMBRUS Stimpson, 1871

Parthenope (Platylambrus) exilipes (Rathbun)

Plate 69, Fig. 2

Lambrus (Parthenolambrus) exilipes Rathbun, Proc. U.S. Nat. Mus., vol. 16, p. 234, 1893.

Lambrus exilipes Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 581, 1898.

Parthenope (Platylambrus) exilipes Rathbun, Bull. 129, U.S. Nat. Mus., p. 523, pls. 184 and 185; pl. 277, figs. 1-2, and synonymy, 1925. Crane, Zoologica, vol. 22, no. 3, p. 64, 1937.

Type locality.—Off San Domingo Point, Lower California.

Type.—USNM No. 17365.

Range.—West coast of Lower California *(Albatross)* to Panama *(Albatross)*; Galapagos Islands *(Albatross)*.

Atlantic analogue.—*P. (Platylambrus) pourtalesii* (Stimpson).

Diagnosis.—Carapace one-third broader than long, branchial regions expanded and inflated, a median tubercle on posterior margin. Lateral teeth short and blunt.

Material examined (100 specimens from 12 stations).—

55-33. Lat. 1° 03′ 30″ S, Long. 90° 17′ 30″ W, 60 fms, Feb. 5, 1933, 3 males, 3 young.

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 1 female.

171-34. East of Wreck Bay, Chatham Island, 35-40 fms, Jan. 21, 1934, 2 females, 1 young.

185-34. Cartago Bay, Albemarle Island, 32 fms, Jan. 25, 1934, fragments.

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 4 females (1 ovig.) (photographed), 14 young.

201-34. Off Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 2 specimens.

318-35. Off Gordon Rocks, Indefatigable Island, 45 fms, Dec. 8, 1934, 1 female.

346-35. South Seymour Island, 55 fms, Dec. 13, 1934, 1 male, 1 female.

792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 38 young.

810-38. (D-2) Barrington Island, 73 fms, Jan. 26, 1938, 1 male, 2 females.

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 5 males, 2 females, 17 young.

816-38. North of Hood Island, 50-100 fms, Jan. 29, 1938, 1 male, 1 female, 1 young.

Measurements.—Largest female: length 16.3 mm, width 19.5 mm, cheliped 42 mm, chela 18.9 mm.

Habitat.—Sand, sand and mud, sand and shell, sand and coral; mud and shell.

Depth.—20-100 fms (one shore record).

Remarks.—*P. exilipes* is the most abundant of Galapagos parthenopids, occurring throughout the archipelago at medium depth, 20-100 fms.

Subgenus PSEUDOLAMBRUS Paulson, 1875

Parthenope (Pseudolambrus) triangula (Stimpson)

Plate 69, Fig. 1

Lambrus triangulus Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 201, 1860.

Parthenope (Pseudolambrus) triangula Rathbun, Bull. 129, U.S. Nat. Mus., p. 528, pl. 278, figs. 1-3. Crane, Zoologica, vol. 22, no. 3, p. 65, pl. 5, fig. 18, 1937.

Type locality.—Cape San Lucas, Lower California.

Type.—Not extant.

Range.—Known only from the type locality, Cape San Lucas, and from San Lucas Bay *(Zaca)*.

Diagnosis.—Chelipeds less than twice as long as carapace. Carapace an equilateral triangle, definitely widest at posterolateral angle; anterolateral margin nearly straight, multidenticulate; 8 or 9 strong teeth on upper margin of chela.

Material examined (44 specimens from 17 stations).—

25-33. Gardner Bay, Hood Island, 2 fms, Jan. 24, 1933, 1 male.

59-33. Off Cormorant Bay, Charles Island, 13 fms, Feb. 6, 1933, 1 female.

87-33. South Seymour Island, 15 fms, Feb. 19, 1933, portion of left cheliped.

173-34. South Seymour Island, 5 fms, Jan. 22, 1934, 2 males.

177-34. Sulivan Bay, James Island, 20 fms, Jan. 23, 1934, 1 male (photographed).

187-34. Cartago Bay, Albemarle Island, 8-10 fms, Jan. 25, 1934, 1 male.

204-34. Gardner Bay, Hood Island, 30 fms, Jan. 31, 1934, 1 male.

310-35. Marchena Island, 15 fms, Dec. 3, 1934, 1 male.

339-35. Sulivan Bay, James Island, 10 fms, Dec. 12, 1934, 1 young male.

341-35. Sulivan Bay, James Island, 20 fms, Dec. 12, 1934, 1 male.

355-35. Gardner Bay, Hood Island, 12 fms, Dec. 17, 1934, 1 male, 1 female.

356-35. Gardner Bay, Hood Island, 12-15 fms, Dec. 17, 1934, 1 male.

360-35. Gardner Bay, Hood Island, 3 fms, Dec. 19, 1934, 3 young.

361-35. Gardner Bay, Hood Island, 12 fms, Dec. 19, 1934, 1 male.

782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 1 young.

783-38. Darwin Bay, Tower Island, 40-70 fms, Jan. 16, 1938, 5 males, 3 females.

785-38. Darwin Bay, Tower Island, 20-40 fms, Jan. 17, 1938, 7 males, 8 females, 2 young.

Measurements.—Largest male: length 16.3 mm, width 20.6 mm, cheliped 34.0 mm, chela 14.7 mm, dactyl 8.1 mm.

Color in life.—Ground color of carapace pale dull yellow overcast with numerous tiny orange blotches among which appear tiny dark carmine spots. A broad band of dark tourmaline pink on raised branchial area. Raised portion on gastric, cardiac, and intestinal areas with broad bands of pale orange yellow. Eye light nickel green. Ground color of cheliped same as carapace. A large orange-red spot on distal end of merus. Carpus darker than merus or hand, the teeth of which are white. Fingers deep orange, blending into rich brownish purple to dull yellow at tips. Ambulatory legs pale dull yellow with bands of vinaceous purple. Dactyls pale yellowish white. (Petersen)

Habitat.—Sand, sand and rock, sand and coral; rock.

Depth.—2-70 fms.

Remarks.—A specimen sent Miss Rathbun in 1933 was returned with the notation *"Parthenope,* n. sp., nr. *P. guerini* (Brito Capello)." Examination of a specimen of the latter (USNM No. 55783) in 1937 revealed that the Galapagos specimens were not even of the same subgenus, their shorter chelipeds placing them in *Pseudolambrus* Paulson (1875) rather than in *Platylambrus* Stimpson (1871). By this time most of the Hancock mainland material had been identified, Stimpson's *P. triangula* rediscovered, both in the north and in adjacent Ecuadorean waters (unpublished records), and it was realized that the Galapagos specimens were referable to this species.

P. triangula is now recorded from the Galapagos Islands.

Genus **DALDORFIA** Rathbun, 1904

Daldorfia Rathbun, Proc. Biol. Soc. Washington, vol. 17, p. 171, 1904.

The name *Daldorfia* was proposed to replace *Lambrus* Leach, retired as a synonym of *Parthenope* Weber. Besides the type species, *D. horrida* (Linnaeus), the genus now contains *D. semicircularis* (Flipse) and the following *D. garthi* Glassell.

Daldorfia garthi Glassell

Plate 55, Figs. 1-11

Parthenope (Pseudolambrus) excavata Boone, Zoologica, vol. 8, no. 4, p. 173, fig. 58, 1927.

Daldorfia garthi Glassell, Allan Hancock Pac. Exped., vol. 5, no. 3, p. 67, pl. 17, figs. 1-11, 1940.

Type locality.—Sulivan Bay, James Island, Galapagos Islands.

Type.—AHF no. 3811.

Range.—Cape San Lucas, Lower California, to Colombia *(Velero III);* Galapagos Islands *(Velero III).*

Diagnosis.—Carapace triangular, deeply eroded, anterolateral margins spined, posterolateral margin straight. Meri of ambulatory legs with overlapping teeth, propodi with 2 denticles on lower margin. Chelipeds massive, unequal. A semiovoid sternal pit.

Material examined (11 specimens from 4 stations).—

312-35. Black Beach, Charles Island, shore, Dec. 5, 1934, 1 female.

313-35. Black Beach, Charles Island, shore, Dec. 5, 1934, 1 female.

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 1 male.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 1 male (holotype, AHF no. 3811); also 6 males and one female (paratypes).

Measurements.—Male holotype: length 31 mm, width 47 mm, merus of cheliped 29 mm, carpus 13 mm, manus including pollex 46 mm.

Habitat.—Under rocks at extreme low tide.

Depth.—Shore.

Remarks.—This large and striking species, the only Pacific parthenopid commonly encountered at low tide, has suffered at the hands of taxonomists, having been referred to *Parthenope (Pseudolambrus) excavata* (Stimpson) by Boone (1927) and to *Thyrolambrus erosus* Rathbun (1898) by the author of that species, although not in print, in an identification made in 1933. While at the National Museum in 1939, the writer compared for Mr. Glassell a specimen from Cape San Lucas with the type of *T. erosus* (USNM No. 21577) and reported that the San Lucas specimen was undoubtedly a new species. The Hancock material was turned over for description to Mr. Glassell, who selected his types from among James Island, Galapagos, material.

Daldorfia is an Indo-Pacific genus reaching the Hawaiian Islands, where it is represented by *D. horrida* (Linnaeus), but not known to occur heretofore in the Americas.

Genus **SOLENOLAMBRUS** Stimpson, 1871

Solenolambrus arcuatus Stimpson

Plate 69, Figs. 3, 4

Solenolambrus arcuatus Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 10, p. 101 (128), 1871. Rathbun, Bull. 129, U.S. Nat. Mus., p. 538, and synonymy, 1925. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 625, 1931.

Type locality.—Panama.

Type.—Not extant.

Range.—Panama (Stimpson, Finnegan).

Atlantic analogue.—*S. typicus* Stimpson.

Material examined (5 specimens from 4 stations).—

55-33. Lat. 1° 03′ 30″ S, Long. 90° 17′ 30″ W, 60 fms, Feb. 5, 1933, 1 young.

204-34. Gardner Bay, Hood Island, 30 fms, Jan. 31, 1934, 2 young females.

322-35. Tagus Cove, Albemarle Island, 10 fms, Dec. 10, 1934, 1 male.

328-35. Tagus Cove, Albemarle Island, 14 fms, Dec. 10, 1934, 1 male (photographed).

Measurements.—Largest male: length 11.5 mm, width 14.4 mm, cheliped 24.7 mm, chela, 12.2 mm.

Color in life.—Ground color pale olive buff to white. Rostrum cadmium orange, gastric region olive gray with white spots and streaks showing through. Anterolateral margins white. Other areas overcast with

patterns of deep livid brown and dark vinaceous purple. Ambulatory legs white with tone of cadmium yellow and touches of vinaceous purple on upper surfaces of merus, carpus, and propodus; tip of dactyl yellow. Cheliped like carapace with patterns of vinaceous purple in broad bands; two on merus and one on chela. Fingers white. (Petersen)

Habitat.—Sand.

Depth.—10-60 fms.

Remarks.—*S. arcuatus* is one of very few species of which no specimen was available for illustration in the Rathbun monograph (1925). Known previously only from Panamanian specimens, it is now recorded from the Galapagos Islands in several widely separated localities.

Genus **MESORHOEA** Stimpson, 1871

Mesorhoea bellii (*A. Milne Edwards*)

Plate 69, Figs. 5, 6

Solenolambrus bellii A. Milne Edwards, Crust. Reg. Mex., p. 163, pl. 29, figs. 6-6d, 1878.

Mesorhoea bellii Rathbun, Bull. 129, U.S. Nat. Mus., p. 548, pl. 201; pl. 280, figs. 1-4, and synonymy, 1925. Crane, Zoologica, vol. 22, no. 3, p. 65, 1937.

Type locality.—Mexico.

Type.—In Paris Mus.

Range.—From Abreojos Point, Lower California *(Albatross),* to Panama Bay, including the Gulf of California; 9 to 71 fms.

Atlantic analogue.—*M. sexspinosa* Stimpson.

Material examined (8 specimens from 5 stations).—

55-33. Lat. 1° 03′ 30″ S, Long. 90° 17′ 30″ W, 60 fms, Feb. 5, 1933, 1 young female.

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 1 young female.

792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 2 males, 1 female.

810-38. (D-2) Barrington Island, 73 fms, Jan. 26, 1938, 1 young.

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 1 male (photographed), 1 female.

Measurements.—Largest specimen: length 11.0 mm, width 14.6 mm, cheliped 21.0 mm, chela 8.7 mm.

Color in life.—Ground color of carapace pale ochraceous buff. Frontal areas a tone darker and a little more yellow; pattern on frontal area deep olive buff. Chela pale ochraceous buff, fading on fingers to white tips.

Numerous tiny and larger red spots appear in groups and scattered on carapace, but none on ambulatory legs, which are nearly white; merus banded with chrome orange, nail of dactyl yellow. (Petersen)

Habitat.—Sand, sand and shell, sand and nullipore, sand and coral.

Depth.—9-80 fms.

Remarks.—*M. bellii* is now recorded from the Galapagos Islands.

Genus **AETHRA** Leach, 1816

Aethra scruposa scutata Smith

Plate 70, Figs. 1, 2

Aethra scutata Smith, Amer. Journ. Sci., ser. 2, vol. 48, p. 120, 1869.

Oethra scruposa, var. *scutata* A. Milne Edwards, Crust. Reg. Mex., p. 170, pl. 31, figs. 2-2e, 1878.

Aethra scruposa scutata Rathbun, Bull. 129, U.S. Nat. Mus., p. 552, pl. 195, and synonymy, 1925.

Type locality.—La Paz, Lower California.

Type.—In Yale Univ. Mus.

Range.—From La Paz, Lower California (Smith), to Mazatlan (A. Milne Edwards).

Diagnosis.—Carapace transversely elliptical, margins thin, expanded to conceal legs and cut by closed fissures into numerous broad teeth. Margins of chelipeds and ambulatory legs produced, dentate.

Material examined (4 specimens from 2 stations).—

28-33. Gardner Bay, Hood Island, 2 fms, Jan. 25, 1933, 1 male.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 1 male, 2 females (1 photographed).

Measurements.—Largest specimen, male: length 63.0 mm, width 97.1 mm, cheliped (rigid) coxa to elbow 34 mm, elbow to tip of dactyl 42 mm, chela 36.3 mm, dactyl 23.4 mm.

Color in life.—The appearance of the carapace is that of a much eroded rock encrusted with coralline algae.

Habitat.—Under rocks at low tide.

Depth.—Strictly a shoreline species.

Remarks.—For five years a single, very large male from Hood Island was the only representative of this species in Hancock collections, despite repeated collecting over the same territory. Then, in 1938, an exceptional tide at Sulivan Bay gave *Velero III* collectors three more specimens, including females, along with more of the equally desirable *Glyptoxanthus hancocki* Garth (1939) and *Daldorfia garthi* Glassell (1940), all three of which occupy extremely low tide levels.

A. scruposa scutata is now recorded from the Galapagos Islands.

Superfamily BRACHYRHYNCHA
Family *PORTUNIDAE*
Subfamily THALAMITINAE
Genus PORTUNUS Weber, 1795

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Portunus*

A¹ A spine at posterior angles of the carapace; merus of swimming leg unarmed . . . . . *P. (Achelous) tuberculatus*

A² No spine at posterior angles of the carapace; a spine at posterodistal angle of merus of swimming leg

B¹ Carapace with numerous areolations; lateral spine as long as width of 3 adjacent teeth . . *P. (Achelous) stanfordi*

B² Carapace flat and smooth; lateral spine no longer than largest of anterolateral spines . . *P. (Achelous) angustus*

Subgenus ACHELOUS de Haan
Portunus (Achelous) stanfordi Rathbun

Plate 71, Fig. 1

Portunus (Achelous) brevimanus Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 593, 1898; vol. 38, p. 578, 1910 (part: the Galapagos specimens).

Portunus (Achelous) stanfordi Rathbun, Proc. Washington Acad. Sci., vol. 4, p. 282, pl. 12, fig. 11, 1902; Bull. 152, U.S. Nat. Mus., p. 69, pl. 31, text fig. 11, 1930. Boone, Zoologica, vol. 8, no. 4, p. 178, fig. 60, 1927.

Type locality.—Tagus Cove, Albemarle Island.

Type.—USNM No. 24833.

Range.—Tagus Cove, Albemarle Island (Hopkins-Stanford Expedition), and Hood Island *(Arcturus);* known only from the Galapagos Islands.

Diagnosis.—Carapace with numerous lumpy elevations. Lateral spine almost transverse, its length equal to the width of the two adjacent teeth. A spine at the posterodistal angle of the merus of the fourth leg.

Material examined (234 specimens from 40 stations).—

9-32. Tagus Cove, Albemarle Island, Jan. 6, 1932, surface at light, 1 female.

55-33. Lat. 1° 03′ 30″ S, Long. 90° 17′ 30″ W, 60 fms, Feb. 5, 1933, 1 young male.

78-33. Conway Bay, Indefatigable Island, surface at light, Feb. 15, 1933, 2 males, 2 females.

84-33. South Seymour Island, 13 fms, Feb. 18, 1933, 1 specimen and fragments.
143-34. Wenman Island, 100-150 fms, Jan. 11, 1934, 1 female.
147-34. Tagus Cove, Albemarle Island, 30 fms, Jan. 13, 1934, 2 males, 4 ovig. females.
148-34. Tagus Cove, Albemarle Island, 12-15 fms, Jan. 13, 1934, 1 male, 3 young.
149-34. Tagus Cove, Albemarle Island, 20 fms, Jan. 13, 1934, 2 young females, 1 fragment.
155-34. Tagus Cove, Albemarle Island, 50-60 fms, Jan. 15, 1934, 1 male, 1 female.
157-34. Tagus Cove, Albemarle Island, 10-18 fms, Jan. 15, 1934, 4 males, 2 females, 2 young.
170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 30 young.
171-34. East of Wreck Bay, Chatham Island, 35-40 fms, Jan. 21, 1934, 8 young.
173-34. South Seymour Island, 5 fms, Jan. 22, 1934, 4 males, 2 females. Also 1 atypical specimen doubtfully referable to the above.
177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 1 young.
182-34. James Bay, James Island, 30 fms, Jan. 24, 1934, 3 young, 1 carapace.
185-34. Cartago Bay, Albemarle Island, 32 fms, Jan. 25, 1934, 2 young.
186-34. Cartago Bay, Albemarle Island, 32 fms, Jan. 25, 1934, 2 young and fragments.
190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 18 young.
195-34. North of Charles Island, 70-80 fms, Jan. 29, 1934, 1 large male, 2 ovig. females.
197-34. Off Post Office Bay, Charles Island, 35-40 fms, Jan. 29, 1934, 7 young.
198-34. NW of Post Office Bay, Charles Island, 55-65 fms, Jan. 29, 1934, 4 young.
201-34. Off Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 1 large male, 5 young.
204-34. Gardner Bay, Hood Island, 30 fms, Jan. 31, 1934, 5 young.
318-35. Off Gordon Rocks, Indefatigable Island, 45 fms, Dec. 8, 1934, 4 young.
322-35. Tagus Cove, Albemarle Island, 10 fms, Dec. 10, 1934, 1 male, 1 female, 8 young.

324-35. Tagus Cove, Albemarle Island, 45 fms, Dec. 10, 1934, 1 male, 2 females (1 ovig.), 6 young.
326-35. Tagus Cove, Albemarle Island, 15 fms, Dec. 10, 1934, 2 males (1 photographed), 1 female, 6 young.
327-35. Tagus Cove, Albemarle Island, 12 fms, Dec. 10, 1934, 1 male, 15 young.
328-35. Tagus Cove, Albemarle Island, 14 fms, Dec. 10, 1934, 2 males, 8 young.
330-35. Tagus Cove, Albemarle Island, 12 fms, Dec. 10, 1934, 4 young.
345-35. Between Daphne and South Seymour Islands, 30 fms, Dec. 13, 1934, 1 young.
346-35. Between South Seymour and Daphne Islands, 55 fms, Dec. 13, 1934, 5 young.
347-35. South Seymour Island, 3 fms, Dec. 13, 1934, 3 young.
362-35. Gardner Bay, Hood Island, 20 fms, Dec. 19, 1934, 17 young.
790-38. South Seymour Island, 10-20 fms, Jan. 19, 1938, 1 young.
792-38. Between South Seymour and Daphne Islands, 70-80 fms, Jan. 20, 1938, 1 male, 1 female, 4 young.
795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 1 male, 1 female.
813-38. Gardner Bay, Hood Island, surface at light, Jan. 27, 1938, 1 male.
814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 4 males, 4 females, 7 young.
816-38. North of Hood Island, 50-100 fms, Jan. 29, 1938, 2 males, 1 female, 1 young.

Measurements.—Large female: length 26.7 mm, width 45.6 mm, cheliped 60.0 mm, chela 27.8 mm, dactyl 14.6 mm; largest male: length 28.0 mm, width 48.4 mm, cheliped 78.0 mm, chela 35.0 mm, dactyl 16.7 mm.

Color in life.—Ground color of carapace pale olive buff. Granules on all raised areas cadmium orange to bright red and carmine on edges. Anterolateral teeth with a cluster of orange-yellow dots at bases; lateral tooth edged with carmine. Cheliped with carmine on large spines. Fingers carmine, banded with white. Ambulatory legs with delicate pale lavender tint becoming more intense distally. Merus of swimming leg faintly tinted with yellow. (Petersen)

Habitat.—The bottom, where noted, is sandy in every case but one which is marked "very rocky" and one marked "gray mud and shell." Red algae were frequently present in the haul.

Depth.—5-150 fms; also pelagic at night.

Remarks.—All were dredged specimens except four which came to the gangway light. *P. (A.) stanfordi* may be distinguished from *P. (A.) angustus* Rathbun (1898) by the rough carapace and the strong lateral spine, both unmistakable in even the smallest specimens. Hancock specimens have been compared with the type (USNM No. 24833).

The range of the species has been extended to include the northernmost island, Wenman, and the known depth increased to 150 fms.

Portunus (Achelous) angustus Rathbun

Plate 71, Figs. 3, 4

Portunus (Achelous) angustus Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 594, pl. 44, fig. 2, 1898; Proc. Washington Acad. Sci., vol. 4, p. 282, 1902; Bull. 152, U.S. Nat. Mus., p. 70, pl. 32, 1930. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 629, 1931.

Type locality.—Off Hood Island, Galapagos Islands, 20 fms.

Type.—USNM No. 21587.

Range.—Hood Island *(Albatross)* and Tagus Cove, Albemarle Island (Hopkins-Stanford Expedition); known only from the Galapagos Islands.

Atlantic analogue.—*P. ordwayi* (Stimpson).

Diagnosis.—Carapace flat and smooth, except for low transverse granulate ridges. Lateral spine short, no larger than largest of anterolateral spines. A spine at the posterodistal angle of the merus of leg 4. Anterolateral spines alternately large and small, as in *Cronius.*

Material examined (128 specimens from 31 stations).—

66-33. Tagus Cove, Albemarle Island, 10-20 fms, Feb. 9, 1933, fragments.

86-33. South Seymour Island, surface at light, Feb. 18, 1933, 2 young.

87-33. South Seymour Island, 15 fms, Feb. 19, 1933, 2 young.

149-34. Tagus Cove, Albemarle Island, 20 fms, Jan. 13, 1934, 1 male.

157-34. Tagus Cove, Albemarle Island, 10-18 fms, Jan. 15, 1934, 2 males.

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 5 young.

168a-34. Academy Bay, Indefatigable Island, coral, Jan. 20, 1934, 1 young.

169-34. Academy Bay, Indefatigable Island, 15-25 fms, Jan. 20, 1934, 11 young.

173-34. South Seymour Island, 5 fms, Jan. 22, 1934, 1 young.
177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 2 males, 2 females (1 ovig.) (photographed), 9 young.
193-34. Post Office Bay, Charles Island, 8-10 fms, Jan. 27, 1934, 17 young.
196-34. Post Office Bay, Charles Island, 8-10 fms, Jan. 29, 1934, chela.
197-34. Off Post Office Bay, Charles Island, 35-40 fms, Jan. 29, 1934, 3 young.
204-34. Gardner Bay, Hood Island, 30 fms, Jan. 31, 1934, 28 young.
326-35. Tagus Cove, Albemarle Island, 15 fms, Dec. 10, 1934, 2 females, 1 young.
327-35. Tagus Cove, Albemarle Island, 12 fms, Dec. 10, 1934, 1 female.
328-35. Tagus Cove, Albemarle Island, 14 fms, Dec. 10, 1934, 1 male.
330-35. Tagus Cove, Albemarle Island, 12 fms, Dec. 10, 1934, 1 male.
336-35. Sulivan Bay, James Island, 20 fms, Dec. 12, 1934, 1 male, 2 females, 2 young.
339-35. Sulivan Bay, James Island, 10 fms, Dec. 12, 1934, 1 male, 1 female.
340-35. Sulivan Bay, James Island, 8 fms, Dec. 12, 1934, 1 young and fragment.
341-35. Sulivan Bay, James Island, 20 fms, Dec. 12, 1934, 5 females (1 ovig.), 3 young.
347-35. South Seymour Island, 3 fms, Dec. 13, 1934, 1 young.
348-35. South Seymour Island, 15 fms, Dec. 13, 1934, 1 young.
361-35. Gardner Bay, Hood Island, 12 fms, Dec. 19, 1934, 3 males.
362-35. Gardner Bay, Hood Island, 20 fms, Dec. 19, 1934, 2 males, 1 young.
788-38. SE of Daphne Major Island, 55 fms, Jan. 19, 1938, 1 male.
795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 3 young.
799-38. Cartago Bay, Albemarle Island, 15-18 fms, Jan. 22, 1938, 1 female.
807-38. Academy Bay, Indefatigable Island, 10-25 fms, Jan. 24, 1938, 2 males, 2 young.
809-38. Academy Bay, Indefatigable Island, surface at light, Jan. 25, 1938, 1 female.

Measurements.—Largest male: length 24.1 mm, width 34.6 mm, cheliped 46 mm, chela 21.6 mm, dactyl 12.8 mm.

Habitat.—As given for *P. (A.) stanfordi.*

Depth.—3-55 fms.

Remarks.—While *P. (A.) angustus* was taken in a number of the same dredge hauls as *P. (A.) stanfordi* Rathbun (1898), none of the former were encountered at depths greater than 55 fms, while the latter was dredged six times at depths of over 55 fms to depths as great as 150 fms.

The reduction in size of the alternate anterolateral spines, suggestive of the genus *Cronius,* is diagnostic of the species, together with the smooth, flat carapace and the short lateral spine.

Portunus (Achelous) tuberculatus (Stimpson)

Plate 71, Fig. 2

Achelous tuberculatus Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 223 (95), 1860.

Portunus (Achelous) tuberculatus Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 596, 1898; Bull. 152, U.S. Nat. Mus., p. 90, pl. 44, and synonymy, 1930. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 629, 1931. Crane, Zoologica, vol. 22, no. 3, p. 68, 1937.

Type locality.—Cape San Lucas, Lower California.

Types.—Cotypes in Brit. Mus., MCZ, and USNM, No. 19679.

Range.—From Cape San Lucas (Xantus) to Panama *(Albatross);* Gorgona Island, Colombia (Crossland); 3-29 fms (Crane).

Diagnosis.—Carapace with many tubercles, a spine at posterior angles. Lateral spine exceedingly long, not at all forward directed. No spine at posterodistal angle of merus of fourth leg.

Material examined (5 specimens from 4 stations).—

66a-33. Tagus Cove, Albemarle Island, "roach" trap, attached to fish trap, Feb. 9, 1933, 1 young.

87-33. South Seymour Island, 15 fms, Feb. 19, 1933, 1 ovig. female (photographed).

783-38. Darwin Bay, Tower Island, 40-70 fms, Jan. 16, 1938, 1 ovig. female.

785-38. Darwin Bay, Tower Island, 20-40 fms, Jan. 17, 1938, 1 male, 1 female.

Measurements.—Ovigerous female: length 7.9 mm, width including lateral spines 16.6 mm, cheliped 16.0 mm, chela 7.5 mm, dactyl 4.2 mm.

Habitat.—White sand, sand and rock, sand and coral.

Depth.—3-70 fms.

Remarks.—This rarest of swimming crabs in the Galapagos Islands may be distinguished from the two commoner species, *P. (A.) stanfordi* Rathbun and *P. (A.) angustus* Rathbun, by the paired spine on the posterior margin of the carapace, although it may be incipient in young specimens.

P. (A.) tuberculatus is now recorded from the Galapagos Islands. Its vertical range has been increased to 70 fms.

Genus **CRONIUS** Stimpson, 1860

Cronius ruber (Lamarck)

Plate 72, Figs. 3, 4

Portunus ruber Lamarck, Hist. Nat. Anim. sans Vert., vol. 5, p. 260, 1818.

Cronius ruber Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 225 (97), 1860. Rathbun, Zoologica, vol. 5, no. 14, p. 159, 1924; Bull. 152, U.S. Nat. Mus., p. 139, pls. 62 and 63, and synonymy, 1930. Boone, Zoologica, vol. 8, no. 4, p. 182, fig. 62, 1927. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 630, 1931. Sivertsen, Med. fra det. Zool. Mus., Oslo, nr. 38, p. 13, 1933.

Type locality.—Brazil.

Type.—Not located.

Range.—From Port San Bartholomé, Lower California *(Albatross),* to Paita, Peru (Schmitt); Galapagos Islands (Williams Expedition); 4-10 fms; also occurs in the Atlantic.

Diagnosis.—All spines tipped with black; 4 spines on manus. Basal lobe of antenna prolonged into orbital hiatus.

Material examined (11 specimens from 10 stations).—

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 2 males.

96a-33. Darwin Bay, Tower Island, fish trap, Feb. 24, 1933, 1 large male.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 1 male.

163-34. Black Beach, Charles Island, shore, Jan. 18, 1934, 1 large ovig. female.

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, chela.

-34. Charles Island, fish trap, Jan. 19, 1934, 1 ovig. female.

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 1 male.

313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 1 male (photographed).

339-35. Sulivan Bay, James Island, 10 fms, Dec. 12, 1934, 1 specimen.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 1 male.

Measurements.—Largest male: length 56 mm, width 84 mm, cheliped 115 mm, chela 60 mm, dactyl 31.5 mm.

Habitat.—Rocky shore and shoal water.

Depth.—4-20 fms.

Remarks.—This largest of swimming crabs in the Galapagos Islands was obtained once in a dredge haul, twice by shore parties, and three times in lobster traps. Four spines on the hand serve to distinguish the young of this species from *P. (A.) angustus* Rathbun.

Subfamily PODOPHTHALMINAE
Genus EUPHYLAX Stimpson, 1860
Euphylax dovii Stimpson
Plate 72, Figs. 1, 2

Euphylax dovii Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 226 (98), pl. 3 (not 5), figs. 5 and 5a, 1860. Rathbun, Bull. 152, U.S. Nat. Mus., p. 147, pl. 65, 1930.

Type locality.—West coast of Central America.

Type.—Not extant.

Range.—West coast of Mexico? (A. Milne Edwards), Panama (Ward), Talcahuano, Chile (MCZ).

Diagnosis.—Orbits occupying whole of anterior border of carapace except for narrow front. Eyes borne on long stalks. Anterolateral margins 5-spined.

Material examined.—

9-32. Tagus Cove, Albemarle Island, surface at light, Jan. 6, 1932, 12 specimens (1 photographed).

Measurements.—Largest specimen, male: length 32 mm, width 52 mm, cheliped 83 mm, chela 42 mm, dactyl 23 mm.

Habitat.—Pelagic.

Depth.—Surface.

Remarks.—*E. dovii* undoubtedly occurs in great numbers in the Galapagos Islands during the seasonal invasion of the warmer waters of El Niño current from the Bay of Panama. Countless numbers of these periscopic-eyed swimmers were observed at Cocos Island in 1938. They were being gathered by fishermen into bait tanks to be released later as chum for tuna in lieu of sardines.

E. dovii is now recorded from the Galapagos Islands.

Family *ATELECYCLIDAE*
Genus KRAUSSIA Dana, 1852

Kraussia Dana, Amer. Journ. Sci. and Arts, vol. 13, no. 37, p. 120, 1852.
Kraussia Alcock, Journ. Asiatic Soc. Bengal, vol. 68, pt. 2, no. 3, p. 97, 1899.

Carapax paulo transversus, margine postero-laterali breve, fronte denticulato, medio emarginato. Antennae internae obliquae. Pedes 8 postici natatorii, tarso falciformi. Articulus maxillipedis externi 3tius vix oblongus. (Dana).

Carapace not much broader than long, not concealing the first three abdominal terga even in the male, subcircular but with the antero-lateral borders much longer than the postero-lateral, and the latter rather strongly convergent and slightly concave: the regions not defined.

Front well separated from and prominent beyond the inner supra-orbital angles, almost horizontal, cut into two lobes which may, or may not, be again divided into two lobules.

The antennules fold alongside their basal joint, much nearer the longitudinal than the transverse.

The basal antenna-joint touches the front and occupies all the space between the antennulary pits and the orbit: the flagellum, which is short and slender, stands in the orbital hiatus.

Buccal cavern squarish, a little elongate: the external maxillipeds—of which the merus is not elongate—slightly overlap the epistome, which though short and sunken is well enough defined. No ridges on the palate to define the efferent branchial channels.

Cheliped massive, short and stumpy with particularly stumpy fingers.

Legs short and stout, ending in blade-like dactyli.

The abdomen of the male consists of 5 segments, the 3rd-5th terga being fused.

Sternum narrow. (Alcock)

The writer follows Rathbun (1911, p. 211) and Balss (Journ. Roy. Soc. Western Australia, vol. 21, 1934-35, p. 132) in assigning the genus *Kraussia* to the family Atelecyclidae.

Kraussia americana Garth
Plate 73, Figs. 1, 2

Kraussia americana Garth, Allan Hancock Pac. Exped., vol. 5, no. 2, p. 19, pl. 7, figs. 1-4, 1939.

Type locality.—Puerto Refugio, Angel de la Guardia Island, Gulf of California.

Type.—AHF no. 371.

Range.—From Angel de la Guardia Island, Gulf of California, to Secas Islands, Panama *(Velero III);* Galapagos Islands *(Velero III).*

Diagnosis.—Front bilobed, subtruncate; lobes arched. Carapace one and one-third times as broad as long. Anterolateral margin greatly exceeding posterolateral margin. Orbits reduced to slits dorsally; eyes small. Fingers of nearly equal length, gaping in a broad oval. First segment of palpus of third maxilliped inflated and horizontally compressed. Margins of carapace and legs fringed with long, cylindrical, golden hairs.

Material examined (10 specimens from 8 stations).—

46-33. Barrington Island, 4-10 fms, Feb. 2, 1933, 1 young.

66-33. Tagus Cove, Albemarle Island, 10-20 fms, Feb. 9, 1933, 1 male.

149-34. Tagus Cove, Albemarle Island, 20 fms, Jan. 13, 1934, 1 young.

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 1 female.

187-34. Cartago Bay, Albemarle Island, 8-10 fms, Jan. 25, 1934, 1 young.

193-34. Post Office Bay, Charles Island, 8-10 fms, Jan. 27, 1934, 1 young.

204-34. Gardner Bay, Hood Island, 30 fms, Jan. 31, 1934, 2 males.

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 1 male, 1 female.

Measurements.—Male holotype: length of carapace 10.9 mm, width 14.7 mm, of front 6.3 mm, chela 8.3 mm, manus 5.0 mm, movable finger 6.3 mm, immovable finger 3.7 mm, height of gape 2.3 mm.

Color in life.—From Gulf of California specimen: carapace pale apricot orange, a triangular red space on branchial region. Chelae pale cream color with a few touches of red. Fingers light bone brown, fading on tips. Ambulatory legs light cream buff, semitransparent, and with a few touches of bright red. Ventral side clear white. (Petersen)

Habitat.—On clean white sand.

Depth.—4-40 fms.

Remarks.—Because both are white and hairy, *Kraussia americana* may be confused with *Acidops fimbriatus* Stimpson, of the family Xanthidae. The minute orbits of the former, contrasted with the long eye stalks of the latter, and the peculiar, curved fingers of *Kraussia* with their imbedded brushes of hair serve readily to distinguish one from the other.

The existence of *Kraussia,* an Old World genus, in the Galapagos Islands, along with *Maldivia, Daldorfia,* and others, indicates a transpacific origin of a proportion of the Galapagos crustacean fauna which will undoubtedly increase as exploration continues.

Family *XANTHIDAE*

Genus **CARPILODES** Dana, 1851

Carpilodes cinctimanus (White)

Plate 74, Figs. 1-4

Carpilius cinctimanus White, in Jukes, Narrative Voy. H.M.S. Fly, vol. 2, append. no. 8, p. 336, pl. 2, fig. 3, 1847.

Carpilodes cinctimanus Miers, Ann. Mag. Nat. Hist., ser. 5, vol. 5, p. 234, 1880. Rathbun, Bull. 152, U.S. Nat. Mus., p. 242, pl. 100, and synonymy, 1930. Crane, Zoologica, vol. 12, no. 3, p. 69, 1937.

Liomera cocosana Boone, Zoologica, vol. 8, no. 4, p. 184, fig. 63, 1927.

Type locality.—Indian Ocean and Eastern Seas.

Type.—Not in Brit. Mus.

Range.—From Arena Bank, Gulf of California *(Zaca),* to Maria Madre Island, Mexico (Contreras); Galapagos Islands *(Arcturus)*; occurs also in Australia, Japan, and islands of the Pacific.

Diagnosis.—Carapace twice as broad as long, cut into 3 large lobes. Wrists banded with black in adult male.

Material examined (190 specimens from 24 stations).—

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 5 males, 7 females (2 ovig.), 24 young.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 1 female.

47-33. Barrington Island, 2 fms, Feb. 2, 1933, 1 male.

48-33. Barrington Island, shore, Feb. 2, 1933, 9 young.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 4 males, 25 young.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 1 male, 1 female, 3 young.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 6 males, 1 female, fragment.

80-33. Duncan Island, coral, Feb. 15, 1933, 1 male, 1 young.

82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 1 young.

94-33. Darwin Bay, Tower Island, coral, Feb. 22, 1933, 3 males, 4 females (1 ovig.), 10 young.

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 2 males.

97-33. Darwin Bay, Tower Island, coral, Feb. 24, 1933, 6 males, 7 females (1 ovig.), 11 young.

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 1 male, 1 female, 1 young.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 3 males, 2 females.

101a-33. Darwin Bay, Tower Island, coral, Feb. 26, 1933, 1 male, 2 females (1 ovig.).

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 1 male.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 2 females.

194-34. Post Office Bay, Charles Island, coral from Onslow Island crater, Jan. 27, 1934, 1 male, 2 females, 1 young.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 1 male.

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 2 young.

343-35. Sulivan Bay, James Island, coral, Dec. 12, 1934, 1 male.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 4 males, 7 females (including the photographed pair), 2 fragments.

789-38. South Seymour Island, shore, Jan. 19, 1938, 2 males.

811-38. Barrington Island, coral, Jan. 26, 1938, 10 males, 6 females, 3 young.

Measurements.—Largest male: length 23.0 mm, width 42.5 mm, cheliped 36.0 mm, chela 20.0 mm, dactyl 11.9 mm; largest female: length 20.7 mm, width 38.3.

Color in life.—Carapace claret brown shading into dragon's blood red on marginal lobes. Appendages dragon's blood red with a band of claret brown on each segment. Chelae black. Dactyls of walking legs white, nail yellow.

Habitat.—*Pocillopora* coral clumps.

Depth.—Shoal water.

Remarks.—*C. cinctimanus* belongs to the *Pocillopora* coral fauna, and, when occasional specimens are encountered under rocks at low tide level, a diligent search seldom fails to reveal coral nearby.

Growth.—An interesting growth series has been aranged, showing complete intergradation between pure white young and pure red adult with black banded wrists. The color appears at first as a delicate pink which gradually deepens, rather than as a series of widening bands, as in *Actaea dovii* Stimpson (pl. 79, fig. 2). The 2.7 mm specimen described by Crane (1937) was thought to be of the latter species until a single banded *Carpilodes* was noted among *Velero III* collections also.

Genus **PLATYPODIA** Bell, 1835

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Platypodia*

A¹ Mesogastric region linear, protogastric lobule bifid . . . . . *P. rotundata*

A² Mesogastric region broadened anteriorly, protogastric lobule entire . . . . . *P. gemmata*

Platypodia gemmata Rathbun

Plate 79, Fig. 1

Platypodia gemmata Rathbun, Proc. Washington Acad. Sci., vol. 4, p. 279, pl. 12, figs. 5 and 6, 1902; Bull. 152, U.S. Nat. Mus., p. 249, text fig. 40, 1930. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 633, 1931. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 15, 1933. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 25, 1939.

Type locality.—Albemarle Island, Galapagos Islands.

Type.—USNM No. 24850.

Range.—Galapagos Islands, Albemarle (Hopkins-Stanford Expedition); Bay of Panama, Taboga Island (Crossland).

Diagnosis.—Carapace rotund, areolate, margin cristate. Mesogastric region broadened anteriorly. Palm with transverse ridges; superior crest high.

Material examined (82 specimens from 26 stations).—

24-33. Gardner Bay, Hood Island, shore, Jan. 24, 1933, 1 male, 1 ovig. female.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 1 young.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 1 young.

59-33. Off Cormorant Bay, Charles Island, 13 fms, Feb. 6, 1933, 1 female.

65-33. Reef north of Tagus Hill, Albemarle Island, reef, Feb. 9, 1933, 1 male, 1 large female.

71-33. James Bay, James Island, shore, Feb. 12, 1933, 2 males, 1 female.

76-33. Cartago Bay, Albemarle Island, coral, Feb. 14, 1933, 10 males, 9 females.

82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 2 females.

85-33. North Seymour Island, shore, Feb. 18, 1933, 3 young.

93-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 2 males, 2 females.

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 1 ovig. female.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 2 ovig. females.

152-34. Tagus Cove, Albemarle Island, coral, Jan. 14, 1934, 3 males, 1 female, 1 young.

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 3 males, 1 female, 1 young.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 1 male, 1 female.

174-34. South Seymour Island, shore, Jan. 22, 1934, 1 male, 1 young.

175-34. North Seymour Island, shore, Jan. 22, 1934, 1 male, 1 female.

306-35. Marchena Island, shore, Dec. 2, 1934, 1 specimen.

316-35. Opposite Gordon Rocks, Indefatigable Island, 20 fms, Dec. 8, 1934, 1 ovig. female.

333-35. James Bay, James Island, shore, Dec. 11, 1934, 2 specimens.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 7 males, 3 females.

361-35. Gardner Bay, Hood Island, 12 fms, Dec. 19, 1934, 1 specimen.

782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 1 male, 4 females.

784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 1 male, 1 young female.

789-38. South Seymour Island, shore, Jan. 19, 1938, 2 young males.

804-38. Onslow Island, off Charles Island, coral, Jan. 23, 1938, 2 males.

Measurements.—Largest male: length 13.0 mm, width 18.2 mm, cheliped 17.4 mm, chela 9.2 mm, dactyl 5.2 mm.

Color in life.—Ground color of carapace reddish naphthalene violet. Tubercles and margin dark dull purple. Outer side of cheliped light brilliant neutral red extending slightly on movable finger. Fingers dull dark yellow, lighter toward tip. Ambulatory legs Brazil red. Color extends half way on dactyl, which is dull yellow. Nail banded with brown at root, bright yellow at tip. Ventral side jasper red; abdomen brick red; legs scarlet beneath. (Petersen)

Habitat.—In circular depressions, particularly in sponges.

Depth.—An intertidal species; occasionally to 15 or 20 fms.

Remarks.—These *Platypodias* fit so snugly into the circular depressions which they have hollowed out for themselves that they are likely to be overlooked. They were most abundant in rocks near a sandy shore where a clump of dead trees forms a conspicuous landmark a few miles north of the anchorage at Cartago Bay, where 19 were found.

From the fact that Finnegan (1931) records the mainland species, *P. rotundata* (Stimpson) (1860) from the Galapagos Islands, it might be expected that some of the Hancock series would prove to be of that species also. However, comparison of selected pairs with the type of *P. gemmata* (USNM No. 24830) and with the Rathbun photographed specimen of *rotundata* (No. 4079) collected by Capt. Dow at Panama conclusively shows all Hancock Galapagos *Platypodias* to be *gemmata,* none having the linear mesogastric or bifid protogastric region of *rotundata.*

Platypodia rotundata (Stimpson)

Atergatis rotundatus Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 202 (74), 1860.

Platypodia rotundata Rathbun, Proc. U.S. Nat. Mus., vol. 38, p. 584, 1910; Bull. 152, U.S. Nat. Mus., p. 248, pl. 102, figs. 1-3, and synonymy, 1930. Finnegan, Journ. Linn. Soc. London, Zool., vol. 37, no. 255, p. 633, 1931.

Type locality.—Cape San Lucas, Lower California.

Types.—Cotypes in MCZ.

Range.—From La Paz, Gulf of California (Lockington), to Pta. Santa Elena, Ecuador (Schmitt); Galapagos Islands (Crossland).

Atlantic analogue.—P. spectabilis (Herbst).

Diagnosis.—Carapace rotund, areolate, margin cristate. Mesogastric region narrowed anteriorly, protogastric region divided into two distinct lobules.

Material examined.—None from the Galapagos Islands. The Hancock collections contain a long series of this species from Escondido Bay, Gulf of California, to Santa Elena Bay, Ecuador.

Remarks.—Since Finnegan (1931) recorded both *P. gemmata* and *P. rotundata* from among Galapagos material collected by Crossland on the *St. George* Expedition, it is presumed that she was familiar with the distinguishing features of both species. However, her inclusion of *P. gemmata,* regarded heretofore as a Galapagos endemic species, in the Taboga Island, Bay of Panama, fauna, where *rotundata* would be expected, suggests that she may have placed too much emphasis upon the presence or absence of hair in the depressions of the carapace, a feature given as diagnostic by Rathbun (1930), and not enough upon the shape of the proto- and mesogastric regions, which is the structural basis for separation of the two species.

Genus ACTAEA de Haan, 1833

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Actaea*

A¹ Carapace covered with raised smooth nodules, deeply separated . . . . . *A. sulcata*

A² Carapace areolate, areoles granulate and not deeply separated

B¹ Carapace narrow, areoles covered with bead granules . . . . . *A. angusta*

B² Carapace wider, areoles sharp granulate

C¹ Areoles inconspicuous, scarcely elevated above general carapace level; granules minute; leg joints granulous . . . . . *A. dovii*

C² Areoles conspicuous on anterior two-thirds of carapace; granules increasing in size toward anterolateral margins; leg joints spinulous . . . . *A. crosslandi*

Actaea dovii Stimpson

Plate 79, Figs. 2, 6

Actaea dovii Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 10, p. 104, 1871. Rathbun, Proc. Washington Acad. Sci., vol. 4, no. 8, p. 281, 1902; Bull. 152, U.S. Nat. Mus., p. 254, pl. 104, figs. 1-2, 1930. Boone, Zoologica, vol. 8, no. 4, p. 203, fig. 71, 1927. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 632, 1931. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 15, 1933. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 25, 1939.

Type localities.—San Salvador and Panama.

Type.—MCZ No. 1021.

Range.—From Arena Bank, Lower California *(Zaca),* to Ecuador (Nobili); Galapagos Islands (Hopkins-Stanford Expedition).

Atlantic analogue.—*A. setigera* (Milne Edwards).

Diagnosis.—Areoles inconspicuous, granulate. Carapace covered with fine hairs.

Material examined (250 specimens from 41 stations).—

28-33. Gardner Bay, Hood Island, 2 fms, Jan. 25, 1933, 1 male, 1 female, 1 young.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 16 males, 2 females, 9 young, 1 fragment.

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 6 males, 3 females (1 ovig.).

47-33. Barrington Island, 2 fms, Feb. 2, 1933, 1 male, 1 female, 1 young.

48-33. Barrington Island, shore, Feb. 2, 1933, 13 males, 1 ovig. female.

59-33. Off Cormorant Bay, Charles Island, 13 fms, Feb. 6, 1933, 6 young.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 17 males, 4 females, 5 young.

71-33. James Bay, James Island, shore, Feb. 12, 1933, 1 male, 1 female.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 4 males, 2 females, 3 young.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 3 males.

80-33. Duncan Island, coral, Feb. 15, 1933, 7 males, 5 females, 3 young.

94-33. Darwin Bay, Tower Island, coral, Feb. 22, 1933, 4 males, 1 young.

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 2 females.

97-33. Darwin Bay, Tower Island, coral, Feb. 24, 1933, 2 males, 1 female, 1 young.

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 1 female.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 4 males, 1 female.

148-34. Tagus Cove, Albemarle Island, 12-15 fms, Jan. 13, 1934, 1 female.

152-34. Tagus Cove, Albemarle Island, coral, Jan. 14, 1934, 1 male, 1 young.

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 1 young.

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 1 young.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 3 males, 2 females.

194-34. Post Office Bay, Charles Island, coral from Onslow Island crater, Jan. 27, 1934, 8 males, 4 females.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 2 males.

310-35. Marchena Island, 15 fms, Dec. 3, 1934, 1 male, 1 female.

313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 1 young.

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 1 male, 1 female, 3 young.

333-35. James Bay, James Island, shore, Dec. 11, 1934, fragments.

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 10 males, 4 females, 2 young.

344-35. Bartholomew Island near James Island, coral, Dec. 12, 1934, 5 males, 2 females, 6 young.
350-35. South Seymour Island, shore, Dec. 13, 1934, 1 male, 1 female, 2 young.
357-35. Gardner Bay, Hood Island, coral, Dec. 17, 1934, 2 young.
359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 11 males, 5 females, 1 young, fragment.
782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 1 male.
784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 1 male, 1 female, 1 young.
789-38. South Seymour Island, shore, Jan. 19, 1938, 5 males, 1 female.
792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 1 young.
796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 13 males.
800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 1 male, 1 female.
803-38. Black Beach, Charles Island, shore, Jan. 23, 1938, 1 female.
804-38. Onslow Island, near Charles Island, coral, Jan. 23, 1938, 1 female, 2 young.
811-38. Barrington Island, coral, Jan. 26, 1938, 2 males.

Measurements.—Large male: length 15.6 mm, width 21.4 mm, cheliped, coxa to elbow 10.7 mm, elbow to tip of dactyl 14.0 mm, chela 12.2 mm, dactyl 7.0 mm.

Color in life.—Carapace and cheliped light neutral red, fingers dark dusky brown fading toward tip. Tubercles on carapace and cheliped cameo brown. Ambulatory legs vinaceous buff with reddish tint, netted with neutral red. Dactyls with blotches of neutral red at base, nail yellow. (Petersen)

Habitat.—*Pocillopora* coral and free living, under rocks.

Depth.—Shore and shoal water; occasionally to 12 or 15 fms; 1 record to 80 fms.

Remarks.—While *A. dovii* is found in the *Pocillopora* colony, it is by no means restricted to living coral but may be found on rocky shore or while diving at moderate depths. The posteriorly converging, reddish-brown bands of the carapace of the young (pl. 79, fig. 2) serve to separate them from immature *Carpilodes cinctimanus* (White), which occurs with them in the coral. In life the eye is bright begonia rose.

Actaea angusta Rathbun

Plate 75, Figs. 1, 2

Actaea angusta Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 582, pl. 42, fig. 2, 1898; Bull. 152, U.S. Nat. Mus., p. 256, pl. 104, figs. 7 and 8, text fig. 42, 1930.

Type locality.—Off Hood Island, Galapagos Islands.

Type.—USNM No. 21578.

Range.—Known only from the type locality.

Atlantic analogue.—*A. bifrons* Rathbun.

Diagnosis.—Carapace narrow, covered with bead granules; margin cut into 4 well-defined teeth. A small species.

Material examined.—

201-34. Off Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 1 young (photographed).

Measurements.—Length 4.3 mm, width 5.8 mm.

Habitat.—"Mostly rock." (Probably with sand patches.)

Depth.—20-35 fms.

Remarks.—Apparently this distinctive species is destined to remain a great rarity in collections, as repeated dredging over the type locality has yielded but one specimen in five expeditions, the first since the type. This specimen has been compared with the holotype (USNM No. 21578) and is identical in size and appearance. The pearly granules of the carapace and cheliped distinguish it from the remaining Galapagos members of the genus.

Actaea sulcata Stimpson

Plate 77, Fig. 1

Actaea sulcata Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 203 (75), 1860. Rathbun, Bull. 152, U.S. Nat. Mus., p. 259, pl. 105, figs. 3 and 4, 1930. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 632, 1931. Crane, Zoologica, vol. 22, no. 3, p. 69, 1937.

Type locality.—Cape San Lucas, Lower California.

Type.—Not extant.

Range.—From Arena Bank, Gulf of California (Crane), to Gorgona Island, Colombia (Crossland); 2½-15 fms.

Atlantic analogue.—*A. rufopunctata nodosa* Stimpson.

Diagnosis.—Carapace covered with raised nodules, deeply separated.

Material examined (44 specimens from 22 stations).—

28-33. Gardner Bay, Hood Island, 2 fms, Jan. 25, 1933, 1 young.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 1 male, 1 1 female, 2 young.

48-33. Barrington Island, shore, Feb. 2, 1933, 1 female, 1 young.

56-33. Flamingo Bay, Charles Island, shore, Feb. 5, 1933, 5 specimens.

59-33. Off Cormorant Bay, Charles Island, 13 fms, Feb. 6, 1933, 1 male, 2 young.

65-33. Reef north of Tagus Hill, Albemarle Island, reef, Feb. 9, 1933, 1 male.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 2 young males.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 3 males.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 2 males, 1 fragment.

94-33. Darwin Bay, Tower Island, coral, Feb. 22, 1933, 1 male, 2 females (1 ovig.).

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 1 male.

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 1 female.

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 1 female.

194-34. Post Office Bay, Charles Island, coral from Onslow Island crater, Jan. 27, 1934, 1 female.

199-34. Black Beach, Charles Island, shore, Jan. 30, 1934, 1 female.

344-35. Bartholomew Island near James Island, coral, Dec. 12, 1934, 2 males.

356-35. Gardner Bay, Hood Island, 12-15 fms, Dec. 17, 1934, 1 young.

357-35. Gardner Bay, Hood Island, coral, Dec. 17, 1934, 2 females.

784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 1 female.

789-38. South Seymour Island, shore, Jan. 19, 1938, 1 male (photographed).

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 1 male, 2 females.

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 1 male. 2 females.

Measurements.—Largest specimen, female: length 11.0 mm, width 17.0 mm, cheliped 14.0 mm, chela 7.5 mm, dactyl 4.3 mm.

Color in life.—General appearance neutral red with bluish tinge. Raised nodules on gastric, cardiac, and intestinal regions pale yellowish white. Cheliped and legs neutral red. Fingers warm Van Dyke brown, a touch of bright lavender at base of movable fingers, tips almost white. Dactyls of ambulatory legs orange yellow at base fading to near white. Nail pale yellow. (Petersen)

Habitat.—*Pocillopora,* or free living under rocks.

Depth.—Shore to 15 fms.

Remarks.—Like *A. dovii,* this species is found most frequently in living coral, but may be picked up from under rocks or dredged in 12-15 fms. It is less abundant than *A. dovii* in the proportion of about 1:5.

A. sulcata is now recorded from the Galapagos Islands.

Actaea crosslandi (Finnegan), new comb.
Plate 56, Figs. 1-4

Xanthias crosslandi Finnegan, Journ. Linn. Soc. London, vol. 37, p. 638, 1931.

Type locality.—Tagus Cove, Galapagos Islands.

Type.—In Brit. Mus.

Range.—Known only from the type locality.

Diagnosis.—Carapace areolate on anterior two-thirds only. Hepatic region coarsely granulate. Anterolateral margin with 4 tuberculated teeth, excluding exorbital cluster; first depressed, second largest. Last three ambulatory segments spinulous.

Material examined (100 specimens from 21 stations).—

143-34. Wenman Island, 100-150 fms, Jan. 11, 1934, 1 young, fragment.

147-34. Tagus Cove, Albemarle Island, 30 fms, Jan. 13, 1934, 3 young.

148-34. Tagus Cove, Albemarle Island, 12-15 fms, Jan. 13, 1934, 4 males, 3 females.

149-34. Tagus Cove, Albemarle Island, 20 fms, Jan. 13, 1934, 5 males, 8 females (4 ovig.).

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 1 male.

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 6 males, 2 females.

168a-34. Academy Bay, Indefatigable Island, coral, Jan. 20, 1934, 2 males.

169-34. Academy Bay, Indefatigable Island, 15-25 fms, Jan. 20, 1934, 9 males, 5 females.

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 4 young.

182-34. James Bay, James Island, 30 fms, Jan. 24, 1934, 2 males, 3 females.

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 2 young.

193-34. Post Office Bay, Charles Island, 8-10 fms, Jan. 27, 1934, 3 males, 1 ovig. female.

196-34. Post Office Bay, Charles Island, 8-10 fms, Jan. 29, 1934, 1 female, 1 young.

197-34. Off Post Office Bay, Charles Island, 35-40 fms, Jan. 29, 1934, 8 males, 10 females.

198-34. NW of Post Office Bay, Charles Island, 55-65 fms, Jan. 29, 1934, 1 male.

199-34. Black Beach, Charles Island, shore, Jan. 30, 1934, 1 male.
316-35. Gordon Rocks, Indefatigable Island, 20 fms, Feb. 8, 1934, 1 male.
317-35. Gordon Rocks, Indefatigable Island, 25-30 fms, Feb. 8, 1934, 2 females (1 ovig.).
792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 1 male.
795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 5 males, 4 females (2 ovig.).
810-38. (D-1) Barrington Island, 48 fms, Jan. 26, 1938, 1 young.

Measurements.—Male: length 10.3 mm, width 15.1 mm; female: length 10.1 mm, width 15.0 mm.

Color in life.—Carapace reddish salmon orange, slightly darker on frontal region and entirely covered with red spots, which become lighter toward the frontal and hepatic regions, where they almost disappear. Chela lighter than carapace, with spots much in evidence on carpus and propodus. Dactyl yellow to white tip. Legs as chelae with pale yellow hairs. (Petersen)

Habitat.—Rock, rock and sand, rock and algae; sand, sand and coral, sand and nullipore; coral, nullipore and worm tubes.

Depth.—From shore to 150 fms.

Remarks.—A pair of specimens from the type locality were sent to the British Museum for comparison with the type and were returned labeled *"Xanthias crosslandi* Finnegan" by Dr. Isabella Gordon. As restricted by Odhner (1925), only one American species, *X. inornatus* (Rathbun) (1898), belongs in this genus, and the writer proposes its transfer to the genus *Actaea* de Haan.

Genus **GLYPTOXANTHUS** A. Milne Edwards, 1879

Glyptoxanthus hancocki Garth

Plate 76, Figs. 1, 2

Glyptoxanthus labyrinthicus Rathbun, Bull. 152, U.S. Nat. Mus., p. 266, part (the Galapagos specimen), 1930.

Glyptoxanthus hancocki Garth, Allan Hancock Pac. Exped., vol. 5, no. 2, p. 15, pl. 4, fig. 1; pl. 5, figs. 1a, 2a, 3a, 1939.

Type locality.—Sulivan Bay, James Island.

Type. AHF no. 383.

Range.—Known only from the Galapagos Islands.

Diagnosis.—Elevations of carapace sparsely pitted. Gastric areole independent of inner protogastric. Front separated from rest of carapace by a transverse furrow joining orbits.

Material examined (22 specimens from 10 stations).—

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 1 male.
101-33. Darwin Bay, Tower Island, shore, Jan. 26, 1933, 2 males.
313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 1 male.
333-35. James Bay, James Island, shore, Dec. 11, 1934, 1 male, carapace.
343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 1 male, chela.
350-35. South Seymour Island, shore, Dec. 13, 1934, 1 specimen.
782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 1 male.
796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 2 males, 8 females (the type series, including the female holotype, AHF no. 383).
800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 1 female.
803-38. Black Beach, Charles Island, shore, Jan. 23, 1938, 1 male, 2 females.

Measurements.—Largest specimen, female, not holotype: length 25.8 mm, width 38.0 mm; male allotype: length 18.6 mm, width 26.9 mm.

Color in life.—Dark areas on carapace a rich violet carmine, a little more reddish on branchial and posterior areas. Light areas cadmium orange on frontal, gastric, and cardiac regions; branchial and intestinal regions same color but lighter hue. Chela violet carmine on dark areas; fingers very dark seal brown, fading toward tips, which are almost white. Ambulatory legs burnt lake on dark areas and light cadmium orange on light areas. Nail of dactyl amber. Eyestalk pale orange-yellow; eye blackish brown. (Petersen)

Habitat.—Under rocks at low tide.

Depth.—Shore.

Remarks.—As set forth in the diagnosis of the species, *G. hancocki* differs from *G. labyrinthicus* (Stimpson) (1860) of the Bay of Panama in having the gastric areole independent of the inner protogastric, the orbits joined by an open, transverse furrow, and the vermiculations sparsely pitted. Exceptionally low tides are necessary to uncover this brilliant red and orange xanthid crab, which is found in company with *Aethra scruposa scutata* Smith and *Daldorfia garthi* Glassell.

Genus **DAIRA** de Haan, 1833

Daira americana Stimpson

Plate 82, Figs. 1, 2

Daira americana Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 212 (84), 1860. Rathbun, Bull. U.S. Nat. Mus., p. 268, pl. 110, figs. 1 and 2, 1930. Hult, Arkiv. för Zoologi, Band 30A, no. 5, p. 12, 1938. Crane, Zoologica, vol. 22, no. 3, p. 70, 1937.

Type locality.—Cape San Lucas, Lower California.

Type.—MCZ No. 1275.

Range.—From Arena Bank, Gulf of California *(Zaca),* to Ecuador (Nobili); Galapagos Islands (Hult).

Diagnosis.—Regions subdivided into numerous rounded lobules, interspersed with tufts of hair. Fingers pointed at tips, not spoon shaped.

Material examined (431 specimens from 35 stations).—

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 16 males, 6 females (3 ovig.), 30 young.

28-33. Gardner Bay, Hood Island, 2 fms, Jan. 25, 1933, 8 males, 10 females (7 ovig.), 22 young.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 3 males, 13 females (8 ovig.), 14 young.

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 5 males, 10 females (7 ovig.), 5 young.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 1 young.

47-33. Barrington Island, 2 fms, Feb. 2, 1933, 1 young.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 6 males, 4 females, 4 young.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 4 males, 8 females (1 ovig.).

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 1 female.

94-33. Darwin Bay, Tower Island, coral, Feb. 22, 1933, 2 males, 4 young.

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 1 male, 1 female, 3 young.

97-33. Darwin Bay, Tower Island, coral, Feb. 24, 1933, 1 male, 2 young.

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 7 males, 5 females (4 ovig.), 4 young.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 2 males, 3 females (2 ovig.), 4 young.

101a-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 5 males, 1 ovig. female, 2 young.

154-34. Reef north of Tagus Hill, Albemarle Island, shore, Jan. 15, 1934, 1 male.

161-34. Black Beach, Charles Island, 3 fms, Jan. 17, 1934, 1 male.

163-34. Black Beach, Charles Island, shore, Jan. 18, 1934, 3 females.

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 19 males, 33 females (13 ovig.) (1 photographed).

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 2 males.

194-34. Post Office Bay, Charles Island, coral from Onslow Island crater, Jan. 27, 1934, 6 males, 3 females.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 6 males, 3 females.

313-35. Black Beach, Charles Island, shore, Dec. 6, 1935, 8 females, 2 young.

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 6 males, 2 females, 12 young.

333-35. James Bay, James Island, shore, Dec. 11, 1934, 1 male, 7 females.

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 1 male, 2 young.

350-35. South Seymour Island, shore, Dec. 13, 1934, 1 male, 1 female.

357-35. Gardner Bay, Hood Island, coral, Dec. 17, 1934, 3 males, 4 females, 8 young.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 9 males, 19 females.

784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 10 males, 10 females, 6 young.

789-38. South Seymour Island, shore, Jan. 19, 1938, 8 males, 6 females.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 2 males, 4 females (1 ovig.).

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 1 female.

804-38. Onslow Island, near Charles Island, coral, Jan. 23, 1938, 2 young.

-38. Academy Bay, Indefatigable Island, no date, 1938, Karl Kübler, collector, 1 young.

Measurements.—A large female: length 31.0 mm, width 44.0 mm, cheliped 38.0 mm, chela 23.7 mm, dactyl 12.0 mm.

Color in life.—Uniform rich chocolate brown. Eyes and under side prune purple. (Garth)

Habitat.—Under rocks and in *Pocillopora* coral.

Depth.—Shore to 3 fms.

Remarks.—In view of the fact that *D. americana* was the first brachyuran encountered by the Hancock Expedition of 1933 and one of the most abundant thereafter, it seemed incredible that it had not previously been taken in the Galapagos Islands. The ship's crew, with a little instruction, could be relied upon to bring back this species among the half dozen which they learned to recognize by sight, aided no doubt by its chocolate-brown color and the distinctive rounded nodules of the carapace.

Genus **LIPAESTHESIUS** Rathbun, 1898

Lipaesthesius leeanus Rathbun

Plate 75, Figs. 3, 4

Lipaesthesius leeanus Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 585, pl. 42, figs. 4 and 5, 1898; Bull. 152, U.S. Nat. Mus., p. 272, pl. 112, text fig. 43, 1930.

Medaeus rugosus Boone, Zoologica, vol. 8, p. 201, fig. 70, 1927.

Type locality.—Southern part of the Gulf of California, 10 fms.

Type.—USNM No. 21581.

Range.—East of La Paz, Gulf of California *(Albatross);* Galapagos *(Arcturus)* (as *Medaeus rugosus*); 4-10 fms.

Diagnosis.—Anterolateral margins running obliquely downward and forward to the buccal cavity, instead of to the orbits. Antennal flagellum completely concealed by large basal article bordering the orbit.

Material examined (13 specimens from 5 stations).—

69a-33. Albemarle Point, Albemarle Island, 12 fms, bottom sample, Feb. 11, 1933, 2 specimens.

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 4 males.

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 2 males, 1 female.

196-34. Post Office Bay, Charles Island, 8-10 fms, Jan. 29, 1934, 1 male, 1 female.

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 2 females (1 photographed).

Measurements.—Largest female: length 5.6 mm, width 8.0 mm.

Habitat.—The character of the bottom, where noted, was "very rocky" or "rock with sand patches." In two instances the dredge brought up a pair.

Depth.—4-40 fms.

Remarks.—The writer has examined the type of *Medaeus rugosus* Boone in the collection of the New York Zoological Society and agrees with Rathbun (1930) that it is identical with *L. leeanus.*

The aptness of the name *Lipaesthesius,* which means "to lack perception by feeling," vanishes with the discovery that a small but complete antennal flagellum exists, although hidden from view by the basal antennal article.

The vertical range of the species has been extended to 40 fms.

Genus MEDAEUS Dana, 1851

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Medaeus*

A¹ Carapace and chelipeds areolate; legs with lobate crests . . . . . *M. lobipes*

A² Carapace and chelipeds spinulous; legs spinulous also . . . . . *M. spinulifer*

Medaeus lobipes Rathbun

Plate 77, Fig. 2

Medaeus lobipes Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 583, pl. 44, fig. 1, 1898; Bull. 152, U.S. Nat. Mus., p. 275, pl. 114, text fig. 44, 1930. Crane, Zoologica, vol. 22, no. 3, p. 70, 1937.

Type locality.—Panama Bay, 33 fms.

Type.—USNM No. 21580.

Range.—From Santa Inez Bay, Gulf of California *(Zaca),* to Panama *(Albatross);* Galapagos Islands *(Albatross);* 5½-33 fms (Crane).

Atlantic analogue.—*M. spinimanus* (Milne Edwards).

Diagnosis.—Carapace coarsely areolate. Anterolateral margin cut into 4 prominent teeth. Carpus and propodus of walking legs cristate. Manus with a superior crest of lobules.

Material examined (55 specimens from 18 stations).—

55-33. Lat. 1° 03′ 30″ S, Long. 90° 17′ 30″ W, 60 fms, Feb. 5, 1933, 1 carapace.

143-34. Wenman Island, 100-150 fms, Jan. 11, 1934, 7 males, 5 females (1 ovig.).

147-34. Tagus Cove, Albemarle Island, 30 fms, Jan. 13, 1934, 2 males.

155-34. Tagus Cove, Albemarle Island, 50-60 fms, Jan. 15, 1934, 1 male, 1 female.

156-34. Tagus Cove, Albemarle Island, 80-100 fms, Jan. 15, 1934, fragments.

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 1 male.

171-34. East of Wreck Bay, Chatham Island, 35-40 fms, Jan. 21, 1934, 1 ovig. female.

182-34. James Bay, James Island, 30 fms, Jan. 24, 1934, 1 young male.

183-34. James Bay, James Island, 50-70 fms, Jan. 24, 1934, 3 males, 1 ovig. female.

201-34. Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 7 males.

324-35. Tagus Cove, Albemarle Island, 45 fms, Dec. 10, 1934, 5 males (1 photographed), 5 ovig. females.

345-35. South Seymour Island, 30 fms, Dec. 13, 1934, 1 female.
346-35. Between South Seymour and Daphne Islands, 55 fms, Dec. 13, 1934, 1 female.
788-38. SE of Daphne Major Island, 55 fms, Jan. 19, 1938, 1 female.
795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 3 females (1 ovig.).
810-38. (D-1) Barrington Island, 48 fms, Jan. 26, 1938, 3 males, 1 female.
810-38. (D-2) Barrington Island, 73 fms, Jan. 26, 1938, 1 male, 1 young.
816-38. North of Hood Island, 50-100 fms, Jan. 29, 1938, 1 female.

Measurements.—Largest male: length 16.4 mm, width 22.7 mm, cheliped 27.0 mm, chela 15.7 mm, dactyl 8.7 mm; largest female: length 12.7 mm, width 18.4 mm.

Color in life.—Ground color of carapace orange chrome. Granules dark grenadine red, giving carapace a bright orange-red color. Frontal, intestinal, and anterolateral areas bright ox-blood red. Marginal teeth and hepatic region white with yellowish tint. Chela same color as carapace externally. Dactyls dark Indian red, tips almost white. Ambulatory legs like carapace but granules a shade darker, bands white. (Petersen)

Habitat.—Rock, rock and sand, rock and shell, rock and coral, rock and nullipore; sand, sand and coralline; mud and shell.

Depth.—5½-150 fms.

Remarks.—*M. lobipes* was taken in many of the same dredge hauls as *Actaea crosslandi* (Finnegan). The two species have much in common but may always be distinguished by the cristate legs of *M. lobipes,* those of *A. crosslandi* being spiny granulate.

Medaeus spinulifer (Rathbun)

Plate 75, Figs. 5, 6

Pilumnus spinulifer Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 585, pl. 42, figs. 6-8, 1898; Proc. Washington Acad. Sci., vol. 4, p. 281, 1902. Boone, Zoologica, vol. 8, no. 4, p. 217, fig. 79, 1927. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 643, 1931.

Medaeus spinulifer Rathbun, Bull. 152, U.S. Nat. Mus., p. 276, text fig. 45, 1930.

Type locality.—Off Cape San Lucas, 31 fms.

Type.—USNM No. 21582.

Range.—Cape San Lucas, Lower California *(Albatross);* Galapagos Islands (Hopkins-Stanford Expedition); 2½-31 fms.

Diagnosis.—Carapace and chelipeds rough and spinulous. Anterolateral margins with 4 compound spines and a subhepatic cluster of spinules. Legs spinulous. Tip of male abdomen concave.

Material examined (39 specimens from 19 stations).—

47-33. Barrington Island, 2 fms, Feb. 2, 1933, 1 young male.

59-33. Off Cormorant Bay, Charles Island, 13 fms, Feb. 6, 1933, 1 young.

148-34. Tagus Cove, Albemarle Island, 12-15 fms, Jan. 13, 1934, 1 male (photographed), 3 females, 1 young.

149-34. Tagus Cove, Albemarle Island, 20 fms, Jan. 13, 1934, 1 male.

155-34. Tagus Cove, Albemarle Island, 50-60 fms, Jan. 15, 1934, 1 female.

157-34. Tagus Cove, Albemarle Island, 10-18 fms, Jan. 15, 1934, 1 male, 1 female.

162-34. Black Beach, Charles Island, shore, Jan. 18, 1934, 1 female.

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 1 female.

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 1 young male.

187-34. Cartago Bay, Albemarle Island, 8-10 fms, Jan. 25, 1934, 1 young.

197-34. Off Post Office Bay, Charles Island, 35-40 fms, Jan. 29, 1934, 1 specimen.

311-35. Marchena Island, 20 fms, Dec. 3, 1934, 1 large male, 3 young.

322-35. Tagus Cove, Albemarle Island, 10 fms, Dec. 10, 1934, 1 male.

330-35. Tagus Cove, Albemarle Island, 12 fms, Dec. 12, 1934, 1 male.

346-35. Between South Seymour and Daphne Islands, 55 fms, Dec. 13, 1934, 1 male, 1 young.

352-35. East of Wreck Bay, Chatham Island, 30 fms, Dec. 15, 1934, 1 specimen.

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 5 males, 4 females, 3 young.

807-38. Academy Bay, Indefatigable Island, 10-25 fms, Jan. 24, 1938, 1 male.

810-38. Barrington Island, 48-73 fms, Jan. 26, 1938, 1 male.

Measurements.—Largest male: length 9.0 mm, width 12.7 mm, cheliped (rigid) coxa to elbow 6.0 mm, elbow to tip of dactyl 10.0 mm, chela 9.3 mm, dactyl 5.8 mm; largest female: length 8.2 mm, width 11.5 mm.

Habitat.—Rock, rock with sand patches, rock with coral and nullipore; sand, sand and shell; mud and shell.

Depth.—Shore to 73 fms.

Remarks.—Although referred by Rathbun (1930) to the genus *Medaeus* because of certain structural peculiarities, the appearance of this crab is that of a *Pilumnus.*

Genus **CYCLOXANTHOPS** Rathbun, 1897

Cycloxanthops vittatus (Stimpson)

Plate 79, Fig. 5

Xantho vittata Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 206 (78), 1860.

Cycloxanthops vittatus Rathbun, Mem. Mus. Comp. Zool., vol. 35, p. 70, 1907; Bull. 152, U.S. Nat. Mus., p. 291, pl. 133, figs. 3 and 4; pl. 134, fig. 3, 1930. Boone, Zoologica, vol. 8, no. 4, p. 197, fig. 68, 1927. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 15, 1933.

Type locality.—Panama and Cape San Lucas.

Types.—Cotypes from Cape San Lucas in MCZ, No. 1260.

Range.—From Cape San Lucas (Xantus), to Panama (Dow); Galapagos Islands *(Arcturus).*

Diagnosis.—Front advanced, truncate, separated from orbit by a notch. Carapace narrow, anterolateral margins arcuate, broken into 9 sharp teeth. A denticle on inner slope of orbit.

Material examined (44 specimens from 21 stations).—

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 2 males.

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 1 large female.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 1 male, 1 female.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 1 male.

80-33. Duncan Island, coral, Feb. 15, 1933, 1 young.

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 1 male, 1 ovig. female.

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 1 female.

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 1 female.

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 1 male.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 2 males.

204-34. Gardner Bay, Hood Island, 30 fms, Jan. 31, 1934, 2 males, 2 females.

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 2 specimens.

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 1 female.
333-35. James Bay, James Island, shore, Dec. 11, 1934, 7 specimens.
343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 2 males, 2 ovig. females.
354-35. Wreck Bay, Chatham Island, shore, Dec. 15, 1934, fragment.
782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 1 male.
796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 3 males.
800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 1 male.
811-38. Barrington Island, coral, Jan. 26, 1938, 2 males, 1 female, 2 young.
811a-38. Barrington Island, *Pavona* coral, Jan. 26, 1938, 1 young male.

Measurements.—Largest specimen, male: length 16.3 mm, width 21.6 mm, cheliped 23.0 mm, chela 12.8 mm, dactyl 7.0 mm.

Color in life.—Carapace white overcast with tiny pale orange to red spots more intense in grooves separating areolations and more numerous on gastric and intestinal regions. Cheliped white, fingers dull clay color. Ambulatory legs white. Eyestalks streaked with pale orange, eye very light. (Petersen) A young specimen: carapace grayish olive with lavender tint. Chelae show more lavender. Fingers yellowish dusky drab. (Garth)

Habitat.—In coarse gravel at high tide level; larger individuals under rocks at low tide level.

Depth.—Shore; occasionally to 30 fms.

Remarks.—Small specimens of the "Cameo Crab," as *C. vittatus* is called, were encountered in coarse gravel near the high tide line in company with *Leptodius cooksoni* Miers and *Lophoxanthus lamellipes* (Stimpson). Larger individuals were found among the bright corallineand bryozoan-encrusted rocks of the low tide level. In each case the crab matched the coloration of its surroundings.

Genus **LEPTODIUS** A. Milne Edwards, 1863

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Leptodius*

A¹ Anterolateral margins of carapace thick and lobed *L. cooksoni*
A² Anterolateral margins of carapace thin and denticulate
  B¹ Hand with external transverse ridges . *L. snodgrassi*
  B² Hand without external transverse ridges . *L. occidentalis*

Leptodius occidentalis (Stimpson)

Chlorodius occidentalis Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 10, p. 108, 1871.

Leptodius occidentalis A. Milne Edwards, Crust. Reg. Mex., p. 269, 1880. Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 589, 1898; Bull. 152, U.S. Nat. Mus., p. 301, pl. 137, figs. 3-4; pl. 138, fig. 2 and synonymy, 1930.

Xanthodius occidentalis Boone, Zoologica, vol. 8, no. 4, p. 195, figs. 67A-B, 1927.

Type locality.—Panama and Manzanillo, Mexico.

Type.—Not extant.

Range.—From Magdalena Bay, Lower California (Orcutt), and Guaymas, Sonora, Mexico *(Albatross),* to Manzanillo, Mexico (Orcutt), Galapagos Islands *(Albatross).*

Atlantic analogue.—*L. floridanus* (Gibbes).

Diagnosis.—Anterolateral margin thin, 5-toothed, including orbital tooth. Carapace with transverse ridges. Outer surface of palm without longitudinal furrows.

Material examined.—None from the Galapagos taken by Hancock Expeditions. Through the courtesy of Miss Jocelyn Crane of the New York Zoological Society the specimen taken at Gardner Bay, Hood Island, by the *Arcturus* Expedition and recorded as *Xanthodius occidentalis* Boone (1927) was made available for examination and was found to agree substantially with Hancock specimens of *Leptodius occidentalis* from the Gulf of California.

Remarks.—Like its congeners, *L. cooksoni* and *snodgrassi, Leptodius occidentalis* is an intertidal species and would scarcely be taken "while diving in fifteen feet of water," as reported by an earlier expedition.

Leptodius snodgrassi Rathbun

Plate 83, Fig. 1

Leptodius snodgrassi Rathbun, Proc. Washington Acad. Sci., vol. 4, p. 279, 1902; Bull. 152, U.S. Nat. Mus., p. 303, pl. 139, text fig. 47a and b, 1930. Finnegan, Journ. Linn. Soc. London, Zool., vol. 37, p. 631, 1931. Hult, Arkiv för Zoologi, Band 30A, no. 5, p. 13, 1938.

Type locality.—Black Bight, Albemarle Island.

Type.—USNM No. 24831.

Range.—Known only from the type locality and a nearby reef, (Hopkins-Stanford Expedition), and from Conway Bay, Indefatigable Island (Crossland).

Diagnosis.—Anterolateral margin thin, 5-toothed, including orbital tooth. Carapace with numerous transverse ridges. Outer surface of palm with longitudinal carinae.

Material examined (32 specimens from 7 stations).—

49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 11 specimens.

153-34. NE point of Narborough Island, shore, Jan. 14, 1934, 1 fragment.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 1 male, 3 females (1 ovig.).

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 10 specimens.

811-38. Barrington Island, coral, Jan. 26, 1938, 1 male, 3 females.

811a-38. Barrington Island, *Pavona* coral, Jan. 26, 1938, 1 young male.

-38. Academy Bay, Indefatigable Island, shore, no date, collected by Karl Kübler, 1 male (photographed).

Measurements.—Largest specimen, broken male: length 13.7 mm, width 21.5 mm, cheliped (detached) 24.6 mm, chela 14.2 mm, dactyl 7.7 mm.

Color in life.—Carapace a patchwork of 4 distinct colors: rose, yellow green, purplish black, and light blue. Chelipeds rich Mars brown continued on fingers, tips of dactyls white. Ambulatory legs opalescent, predominately lavender, blue, brown, and yellow green. Dactyls bright lemon yellow. (Petersen)

Habitat.—Lower levels of rocky beach under lava boulders.

Depth.—Shore.

Remarks.—This species may be readily distinguished from the following *L. cooksoni* Miers by the carinate chelae, the areolate carapace, and the well-defined anterolateral teeth. Repeated searching has failed to reveal its presence in more than one locality, Academy Bay, in even moderate numbers. It is found at a considerably lower level of the beach than is *L. cooksoni.*

Leptodius cooksoni Miers

Plate 77, Fig. 3; Plate 79, Fig. 3

Leptodius cooksoni Miers, Proc. Zool. Soc. London, p. 73, pl. 12, figs. 1-1d, 1877. Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 589, 1898; Bull. 152, U.S. Nat. Mus., p. 310, pl. 142, and synonymy, 1930. Boone, Zoologica, vol. 8, no. 4, p. 188, fig. 65, 1927. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 14, 1933. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 25, 1939.

Xanthodius lobatus Rathbun, Zoologica, vol. 5, no. 14, p. 158, 1924. Boone, Zoologica, vol. 8, no. 4, p. 191, fig. 66, 1927.

Type locality.—Charles Island, Galapagos Islands.

Type.—In Brit. Mus.

Range.—Clarion Island, Mexico (Anthony); Galapagos Islands *(Albatross);* Chile (A. Milne Edwards).

Atlantic analogue.—*L. parvulus* (Fabricius).

Diagnosis.—Anterolateral margin thick, lobed. Inner surface of palm making an abrupt angle with upper outer surface. Fingertips slightly spoon shaped.

Material examined (1,263 specimens from 53 stations).—

11-32. Conway Bay, Indefatigable Island, shore, Jan. 12, 1932, 3 males, 1 female.

13-32. Darwin Bay, Tower Island, shore, Jan. 20, 1932, 7 males, 8 females.

24-33. Gardner Bay, Hood Island, shore, Jan. 24, 1933, 5 specimens.

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 18 males, 22 females (3 ovig.), 7 young.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 12 males, 8 females (7 ovig.), 1 young.

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 2 specimens.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 5 males, 2 females (1 ovig.).

42-33. Chatham Island, opposite Kicker Rock, shore, Jan. 31, 1933, 6 specimens.

48-33. Barrington Island, shore, Feb. 2, 1933, 36 males, 47 females (28 ovig.), 1 young.

49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 27 males, 32 females (21 ovig.).

52-33. Academy Bay, Indefatigable Island, shore, Feb. 4, 1933, 32 males, 55 females (38 ovig.), 7 young.

56-33. Flamingo Bay, Charles Island, shore, Feb. 5, 1933, 27 males, 44 females, (22 ovig.), 12 young.

58-33. Cormorant Bay, Charles Island, shore, Feb. 6, 1933, 4 males, 4 females (2 ovig.).

62-33. Black Bight, Albemarle Island, shore, Feb. 8, 1933, 24 males, 19 females (10 ovig.), 1 fragment.

65-33. Reef north of Tagus Hill, Albemarle Island, reef, Feb. 9, 1933, 1 specimen.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 2 males, 3 females.

71-33. James Bay, James Island, shore, Feb. 12, 1933, 6 males, 11 females.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 6 specimens.

82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 49 males, 42 females, 10 young.

85-33. North Seymour Island, shore, Feb. 18, 1933, 10 males, 7 females, 2 young.

88-33. South Seymour Island, shore, Feb. 19, 1933, 110 specimens.

93-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 33 specimens.

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 5 males, 9 females (1 young).

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 6 specimens.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 1 specimen.

146-34. Albemarle Point, Albemarle Island, shore, Jan. 12, 1934, 12 males, 14 females (4 ovig.), 7 young.

153-34. NE point of Narborough Island, shore, Jan. 14, 1934, 4 specimens.

161-34. Black Beach, Charles Island, 3 fms, Jan. 17, 1934, 1 specimen.

163-34. Black Beach, Charles Island, shore, Jan. 18, 1934, 1 specimen.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 12 males, 9 females (2 ovig.).

174-34. South Seymour Island, shore, Jan. 22, 1934, 5 males (1 photographed), 8 females (6 ovig.).

175-34. North Seymour Island, shore, Jan. 22, 1934, 14 males, 15 females (7 ovig.), 5 young.

179-34. Bartholomew Island near James Island, shore, Jan. 23, 1934, 17 males, 20 females, 1 young.

184-34. James Bay, James Island, shore, Jan. 24, 1934, 4 specimens.

188-34. Cartago Bay, Albemarle Island, shore, Jan. 25, 1934, 6 males, 3 females.

199a-34. Post Office Bay, Charles Island, shore, Jan. 30, 1934, 4 specimens.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 22 males, 17 females, 1 young.

306-35. Marchena Island, shore, Dec. 2, 1934, 28 males, 22 females (9 ovig.).

312-35. Black Beach, Charles Island, shore, Dec. 5, 1934, 8 males, 17 females (12 ovig.).

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 23 males, 30 females (19 ovig.), 2 young.

333-35. James Bay, James Island, shore, Dec. 11, 1934, 6 males, 5 females (3 ovig.).

342-35. Bartholomew Island near James Island, shore, Dec. 12, 1934, 6 males, 3 females (2 ovig.).

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1935, 3 specimens.
351-35. South of Black Beach, Charles Island, shore, Dec. 14, 1934, 2 specimens.
354-35. Wreck Bay, Chatham Island, shore, Dec. 15, 1934, 12 specimens.
358-35. Gardner Bay, Hood Island, shore, Dec. 17, 1934, 8 males, 4 females.
359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 21 males, 21 females, 3 young.
782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 19 specimens.
789-38. South Seymour Island, shore, Jan. 19, 1938, 1 male, 1 female.
796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 4 males.
800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 6 specimens.
803-38. Black Beach, Charles Island, shore, Jan. 23, 1938, 2 males.
808-38. Academy Bay, Indefatigable Island, shore, Jan. 25, 1938, 7 males, 8 females.

Measurements.—Largest specimen, male: length 17.6 mm, width 28.6 mm, cheliped 34.0 mm, chela 19.6 mm, dactyl 10.4 mm.

Habitat.—High tide level, under small rocks among pebbles.

Depth.—Shore to 3 fms.

Remarks.—*L. cooksoni* and *Mithrax (Mithraculus) nodosus* Bell, the first a cancroid, the second a spider crab, could be taken plentifully at high tide, when most other species were under several feet of water. While, with the exception of the *Pocillopora*-dwelling *Trapezias, L. cooksoni* exceeded all other Galapagos brachyurans in number of specimens obtained, three other species were collected at a greater number of stations. The reason would seem to be that, whereas *Teleophrys cristulipes* Stimpson, *Eriphia granulosa* A. Milne Edwards, and *Mithrax (Mithraculus) nodosus* Bell occur in more than one habitat, *L. cooksoni* is closely restricted to the intertidal zone.

Genus **LOPHOXANTHUS** A. Milne Edwards, 1879

Lophoxanthus lamellipes (Stimpson)

Plate 77, Fig. 5

Xantho lamellipes Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 205 (77), 1860.

Lophoxanthus lamellipes A. Milne Edwards, Crust. Reg. Mex., p. 256, pl. 46, figs. 3 and 3a, 1879. Rathbun, Bull. 152, U.S. Nat. Mus., p. 317, pl. 148, figs. 3 and 4, 1930. Hult, Arkiv för Zoologi, Band 30A, no. 5, p. 13, 1938.

Type locality.—Cape San Lucas, Lower California.

Type.—Cotypes in MCZ, No. 1254.

Range.—From La Paz, Lower California (Belding), to Salinas, Ecuador (Schmitt); Galapagos Islands (Hult).

Diagnosis.—Carapace flat, octagonal, anterolateral margin very thick between orbit and first of 3 laterally placed teeth. Ambulatory legs compressed, crested, eroded.

Material examined (129 specimens from 32 stations).—

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 2 males, 2 females (1 ovig.).

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 3 males, 1 female.

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 8 males, 1 female.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 1 male, 1 female.

42-33. Chatham Island, opposite Kicker Rock, shore, Jan. 31, 1933, 1 male.

47-33. Barrington Island, 2 fms, Feb. 2, 1933, 1 specimen.

48-33. Barrington Island, shore, Feb. 2, 1933, 1 ovig. female.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 4 males, 3 females.

71-33. James Bay, James Island, shore, Feb. 12, 1933, 1 male, 1 female.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 1 female.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 3 males, 2 females.

80-33. Duncan Island, shore, Feb. 15, 1933, 1 male, 1 female.

88-33. South Seymour Island, shore, Feb. 19, 1933, 1 female.

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 1 female.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 2 males.

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 1 female.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 1 female.

179-34. Bartholomew Island near James Island, shore, Jan. 23, 1934, 1 large male.

199-34. Black Beach, Charles Island, shore, Jan. 30, 1934, 1 male.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 4 males, 4 females.

313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 1 female.

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 1 male, 3 females (1 ovig.).

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 1 ovig. female.

333-35. James Bay, James Island, shore, Dec. 11, 1934, 10 males (1 photographed), 5 females (2 ovig.).

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 6 males, 1 ovig. female.

350-35. South Seymour Island, shore, Dec. 13, 1934, 3 males, 2 females.

351-35. South of Black Beach, Charles Island, shore, Dec. 14, 1934, 1 male.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 15 males, 10 females.

782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 1 male.

789-38. South Seymour Island, shore, Jan. 19, 1938, 2 males, 2 females.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 6 males, 2 females.

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 1 male, 1 female.

Measurements.—Largest specimen, male: length 8.3 mm, width 11.8 mm, cheliped (rigid) coxa to elbow 6.5 mm, elbow to tip of dactyl 10.0 mm, chela 10.0 mm, dactyl 5.8 mm.

Color in life.—Gastric, cardiac, and intestinal regions pale yellow ochre. Branchial area pale pinkish white. Frontal and anterolateral margins pale red orange. Chelipeds pale orange to white with a few reddish-orange spots on carpus and hand. Fingers a rich dark hazel brown with dull yellow tips. Ambulatory legs dull yellow shaded with Van Dyke red. (Petersen)

Habitat.—In coarse gravel near high tide level.

Depth.—Shore to 3 fms.

Remarks.—*L. lamellipes* is found with *Leptodius cooksoni* Miers and *Cycloxanthops vittatus* (Stimpson) in coarse gravel near high tide level. These three species appear to require less moisture than most of the Xanthidae.

Genus **LOPHOPANOPEUS** Rathbun, 1898

Lophopanopeus maculatus Rathbun

Plate 78, Figs. 3, 4

Lophopanopeus maculatus Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 588, pl. 40, figs. 10 and 11, 1898; Bull. 152, U.S. Nat. Mus., p. 330, text fig. 51, 1930.

Type locality.—Southern part of Gulf of California, 8 fms.

Type.—USNM No. 21585.

Range.—Magdalena Bay, Lower California *(Albatross);* Gulf of California *(Albatross);* 7-17 fms.

Diagnosis.—Chelipeds smooth, unequal. Carapace with 5 blunt teeth, the second depressed. Upper margins of meri of ambulatory legs spinulous. Tip of male abdomen broadly rounded.

Material examined (32 specimens from 9 stations).—

46-33. Barrington Island, 4-10 fms, Feb. 2, 1933, 1 ovig. female.

47-33. Barrington Island, 2 fms, Feb. 2, 1933, 1 ovig. female.

59-33. Off Cormorant Bay, Charles Island, Feb. 6, 1933, 2 males, 1 ovig. female.

69a-33. Albemarle Point, Albemarle Island, 12 fms, mud sample, Feb. 11, 1933, 1 female.

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 2 males (1 photographed).

341-35. Sulivan Bay, James Island, 20 fms, Dec. 12, 1934, 2 males, 1 female.

355-35. West of Gardner Island, Hood Island, 12 fms, Dec. 17, 1934, 1 male, 1 young.

783-38. Darwin Bay, Tower Island, 40-70 fms, Jan. 16, 1938, 9 males.

785-38. Darwin Bay, Tower Island, 20-40 fms, Jan. 17, 1938, 10 males.

Measurements.—Largest specimen, male: length 7.0 mm, width 9.2 mm, cheliped 11.0 mm, chela 7.1 mm, dactyl 4.0 mm.

Habitat.—Sand and coral, sand and rock; rock, rock and algae.

Depth.—2-70 fms.

Remarks.—The Barrington Island and Charles Island specimens were compared with the type female, USNM No. 21585, and agree so closely that the name is applied without hesitation to Galapagos specimens. The female type is more ornamented throughout, the ornamentation consisting of a more spinulous orbit with a definite outer, as well as inner, notch. In the type specimen the third anterolateral tooth appears more prominent; in Hancock specimens, the fourth. The remainder of the *Albatross* specimens exhibit sufficient latitude in variation to encompass these slight discrepancies.

L. maculatus is now recorded from the Galapagos Islands.

Genus **HEXAPANOPEUS** Rathbun, 1898

Hexapanopeus cartagoensis Garth

Plate 78, Figs. 5, 6

Hexapanopeus cartagoensis Garth, Allan Hancock Pac. Exped., vol. 5, no. 2, p. 17, pl. 6, figs. 1-4, 1939.

Type locality.—Cartago Bay, Albemarle Island, Galapagos Islands; 15-18 fms.

Type.—AHF no. 384.

Range.—Known only from the type locality.

Diagnosis.—Front oblique, lateral lobes prominent. First and second teeth fused, their combined width equal to that of third; fifth tooth reduced, almost postlateral. Major chela of adult male without superior crest.

Material examined (14 specimens from 3 stations).—

74-33. Cartago Bay, Albemarle Island, 3-6 fms, Feb. 14, 1933, 3 females (2 ovig.).

187-34. Cartago Bay, Albemarle Island, 8-10 fms, Jan. 25, 1934, 3 males, 7 females (4 ovig.).

799-38. Cartago Bay, Albemarle Island, 15-18 fms, Jan. 22, 1938, 1 male (holotype, AHF no. 384).

Measurements.—Male holotype: length 5.4 mm, width 7.3 mm, chela 6.4 mm; female allotype: length 3.9 mm, width 5.4 mm.

Habitat.—Sand bottom with occasional rock patches.

Depth.—3-18 fms.

Remarks.—One of the most localized members of the Galapagos brachyuran fauna, this tiny panopeid crab has been found only on the extensive flat bottom of Cartago Bay, the indentation from the east which separates Albemarle Island into two halves at Perry Isthmus. The only representative of its genus in the archipelago, it finds its nearest affinity in *H. costaricensis* Garth (1940) of the Central American mainland coast. Both species have the first and second anterolateral teeth fused.

Genus **EURYPANOPEUS** A. Milne Edwards, 1880

Eurypanopeus transversus (Stimpson)

Panopeus transversus Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 210 (82), 1860.

Eurypanopeus transversus A. Milne Edwards, Crust. Reg. Mex., p. 319, pl. 59, figs. 1-1f, 1880. Boone, Zoologica, vol. 8, no. 4, p. 211, text fig. 76, 1927. Rathbun, Bull. 152, U.S. Nat. Mus., p. 407, pl. 172, figs. 5-7, 1930.

Type locality.—Panama.

Type.—Not extant.

Range.—From Mexico (A. Milne Edwards) to Paita, Peru (Jones); Galapagos Islands *(Noma)*.

Diagnosis.—Carapace somewhat depressed posteriorly, curving downward anteriorly, front double edged. Anterolateral margin cut into 5 shallow lobes, the first two completely fused. A basal tooth on major dactyl; color of fingers continued on palm.

Material examined.—None from the Galapagos Islands. The Hancock collections contain a number of specimens collected at Callao and at the bays of San Juan and San Nicolas, Peru.

Genus **EURYTIUM** Stimpson, 1859

Eurytium affine (Streets and Kingsley)

Plate 83, Fig. 2

Panopeus affinis Streets and Kingsley, Bull. Essex Inst., vol. 9, p. 106, 1877.

Eurytium affine A. Milne Edwards, Crust. Reg. Mex., p. 334, pl. 60, figs. 1-1c, 1880. Boone, Zoologica, vol. 8, no. 4, p. 213, fig. 77, 1927. Rathbun, Bull. 152, U.S. Nat. Mus., p. 425, pl. 177, figs. 1 and 2, 1930.

Type locality.—Not designated; one of Lockington's.

Type.—Not extant.

Range.—From Magdalena Bay, Lower California (Orcutt), and Gulf of California *(Albatross)* to Ecuador (?); Galapagos Islands *(Noma)*.

Diagnosis.—Carapace broad, nearly flat, without transverse ridges. Anterolateral margins cut into 5 shallow teeth, the first two coalesced. Carapace widest opposite fifth pair of teeth. Frontal lobes with truncate outer lobules.

Material examined.—

49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 1 female (photographed).

Measurements.—Female: length 10.0 mm, width 15.0 mm, cheliped 18.7 mm, chela 10.2 mm, dactyl 5.5 mm.

Habitat.—Rocky shore.

Depth.—Shore.

Remarks.—Repeated searching over the same territory at Academy Bay has failed to reveal more specimens of this species, which belongs to the Gulf of California fauna.

Genus **MICROPANOPE** (Stimpson), 1871

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Micropanope*

A[1] Carapace granulate, granules mostly in transverse lines

B[1] Chelae granulate; 3 prominent grooves on superior margin of manus . . . . . *M. xantusii*

B² Chelae spinulous; manus without grooves, outer distal two-thirds smooth and bare . . . . . *M. fraseri*

A² Carapace smooth and punctate posteriorly, granulate anteriorly. Chelae smooth, dissimilar; fingers of minor manus strongly deflexed . . . . . *M. polita*

Micropanope xantusii (Stimpson)

Plate 77, Fig. 6

Xanthodes xantusii Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 10, p. 105 (15), 1871.

Micropanope xantusii Rathbun, Bull. 152, U.S. Nat. Mus., p. 438, pl. 179, figs. 1-4, 1930. Crane, Zoologica, vol. 22, no. 3, p. 72, 1937.

Pilumnus beebei Boone, Zoologica, vol. 8, no. 4, p. 219; *not* fig. 80, which is a *Micropanope* of another species.

Xanthias serrulata Finnegan, Journ. Linn. Soc. London, vol. 37, p. 634, fig. 6, 1931.

Type locality.—Cape San Lucas, Lower California.

Type.—Not extant.

Range.—Arena Bank, Lower California *(Zaca);* Clarion Island (Hanna and Jordan); Galapagos Islands *(Arcturus).*

Atlantic analogue.—*M. truncatifrons* Rathbun.

Diagnosis.—Carapace covered with granulations arranged in transverse lines. Chelipeds coarse granulate, 3 prominent sulci on superior margin of manus. Five anterolateral teeth, the last plainly discernible.

Material examined (497 specimens from 38 stations).—

24-33. Gardner Bay, Hood Island, shore, Jan. 24, 1933, 7 males, 3 females.

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 16 males, 17 females (7 ovig.).

28-33. Gardner Bay, Hood Island, 2 fms, Jan. 25, 1933, 2 males.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 17 males, 15 females.

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 5 males, 2 females (1 ovig.).

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 3 males, 1 ovig. female.

46-33. Barrington Island, 4-10 fms, Feb. 2, 1933, 1 female.

47-33. Barrington Island, 2 fms, Feb. 2, 1933, 1 male.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 20 males, 16 females.

71-33. James Bay, James Island, shore, Feb. 12, 1933, 1 male, 1 female.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 9 males, 13 females.

80-33. Duncan Island, shore, Feb. 15, 1933, 5 males, 8 females.

94-33. Darwin Bay, Tower Island, coral, Feb. 22, 1933, 38 males, 25 females (11 ovig.).

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 1 male.

97-33. Darwin Bay, Tower Island, coral, Feb. 24, 1933, 23 males, 18 females.

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 3 males, 5 females.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 7 males, 7 females.

101a-33. Darwin Bay, Tower Island, coral, Feb. 26, 1933, 4 males, 5 young.

163-34. Black Beach, Charles Island, shore, Jan. 18, 1934, 5 females (2 ovig.).

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 3 males, 1 ovig. female.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 1 male, 2 females.

194-34. Post Office Bay, Charles Island, coral, from Onslow Island crater, Jan. 27, 1934, 13 males, 4 females.

197-34. Off Post Office Bay, Charles Island, 35-40 fms, Jan. 29, 1934, 1 male.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 11 males, 13 females (1 ovig.).

313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 1 female.

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 18 males, 19 females (1 ovig.).

333-35. James Bay, James Island, shore, Dec. 11, 1934, 3 ovig. females.

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 8 males, 3 females (1 ovig.).

344-35. Bartholomew Island near James Island, shore, Dec. 12, 1934, 6 males, 3 females (2 ovig.).

350-35. South Seymour Island, shore, Dec. 13, 1934, 3 males, 2 females (1 ovig.).

357-35. Gardner Bay, Hood Island, coral, Dec. 17, 1934, 1 male.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 1 female.

782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 4 males, 2 females, 1 young.

784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 3 males, 8 females, (2 ovig.).

789-38. South Seymour Island, shore, Jan. 19, 1938, 7 males, 9 females.

804-38. Onslow Island, near Charles Island, coral, Jan. 23, 1938, 4 males, 4 females.

811-38. Barrington Island, coral, Jan. 26, 1938, 12 males (1 photographed), 19 females (10 ovig.).

811a-38. Barrington Island, *Pavona* coral, Jan. 26, 1938, 3 young males.

Measurements.—Large male: length 8.4 mm, width 11.9 mm, cheliped (rigid) coxa to elbow 5.3 mm, elbow to tip of dactyl 9.8 mm, chela 8.8 mm, dactyl 4.5 mm.

Habitat.—*Pocillopora* colony.

Depth.—Shore and shoal water; occasionally to 40 fms.

Remarks.—While at the laboratories of the New York Zoological Society in 1937 the writer examined 3 male and 1 female specimens labeled "cotypes of *Pilumnus beebei,* Sta. 54, Hood Island, *Arcturus* Expedition, identified by L. Boone." These also carry the label "*Micropanope xantusii* (Stimpson), identified by M. J. Rathbun," which is unquestionably correct. A specimen in a separate bottle labeled "Sta. 54 *Arcturus.* Photo. Iden. Boone" (but not designated cotype) is of another species of *Micropanope.* In view of the fact that Boone's written description is based upon the specimens of *Micropanope xantusii* and these are the designated types, the writer follows Rathbun (1930) in considering *Pilumnus beebei* a synonym of Stimpson's species. The photographed specimen is described on page 462.

Through the courtesy of Dr. Isabella Gordon of the British Museum, a paratype of *Xanthias serrulata* Finnegan (1931) was examined and proved also to be identical with *Micropanope xantusii* (Stimpson).

Micropanope polita Rathbun

Plate 77, Fig. 4

Micropanope polita Rathbun, Proc. U.S. Nat. Mus., vol. 16, p. 238, 1893; Bull. 152, U.S. Nat. Mus., p. 440, pl. 180, figs. 3 and 4, text fig. 40, and synonymy, 1930. Crane, Zoologica, vol. 22, no. 3, p. 71, 1937.

Panopeus tanneri Faxon, Bull. Mus. Comp. Zool., vol. 24, p. 154, 1893; Mem. Mus. Comp. Zool., vol. 18, p. 19, pl. 3, figs. 4 and 4a, 1895.

Xanthias politus Boone, Zoologica, vol. 8, no. 4, p. 210, fig. 75, 1927.

Type locality.—Off Magdalena Bay, Lower California; 36 fms.

Type.—Cotypes: USNM No. 17397; MCZ No. 4252.

Range.—Magdalena Bay, Lower California *(Albatross);* Galapagos Islands *(Albatross);* 20-66 fms.

Atlantic analogue.—*M. granulimanus* (Stimpson).

Diagnosis.—Front double edged, edges granulate, a small tooth at outer angle. Chelae smooth, the larger with a strong tooth at base of dactyl. Carapace smooth and punctate posteriorly, granulate anteriorly. Five anterolateral teeth. Legs spinulous above.

Material examined (722 specimens from 36 stations).—

143-34. Wenman Island, 100-150 fms, Jan. 11, 1934, 4 males, 2 females (1 ovig.).

147-34. Tagus Cove, Albemarle Island, 30 fms, Jan. 13, 1934, 7 males, 13 females (3 ovig.).

148-34. Tagus Cove, Albemarle Island, 12-15 fms, Jan. 13, 1934, 13 males, 40 females (8 ovig.).

149-34. Tagus Cove, Albemarle Island, 20 fms, Jan. 13, 1934, 16 males, 17 females (7 ovig.), 4 young.

155-34. Tagus Cove, Albemarle Island, 50-60 fms, Jan. 15, 1934, 39 males, (1 photographed), 20 females.

157-34. Tagus Cove, Albemarle Island, 10-18 fms, Jan. 15, 1934, 4 males, 7 females (1 ovig.).

161-34. Black Beach, Charles Island, 3 fms, Jan. 17, 1934, 1 male.

167-34. Post Office Bay, Charles Island, 15 fms, Jan. 19, 1934, 59 males, 32 females (14 ovig.), 9 young.

168a-34. Academy Bay, Indefatigable Island, coral, Jan. 20, 1934, 1 young.

169-34. Academy Bay, Indefatigable Island, 15-25 fms, Jan. 20, 1934, 16 males, 12 females (4 ovig.), 45 young.

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 1 male, 1 female.

171-34. East of Wreck Bay, Chatham Island, 35-40 fms, Jan. 21, 1934, 12 females.

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 39 males, 16 females.

182-34. James Bay, James Island, 30 fms, Jan. 24, 1934, 4 males, 9 females (3 ovig.), 22 young.

183-34. James Bay, James Island, 50-70 fms, Jan. 24, 1934, 12 males, 5 females, 4 young.

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 25 males, 20 females (6 ovig.).

193-34. Post Office Bay, Charles Island, 8-10 fms, Jan. 27, 1934, 60 males, 22 females (2 ovig.).
197-34. Off Post Office Bay, Charles Island, 35-40 fms, Jan. 29, 1934, 3 males, 4 young.
201-34. Off Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 8 males, 15 females (8 ovig.).
317-34. Off Gordon Rocks, Indefatigable Island, 25-30 fms, Dec. 8, 1934, 1 male.
324-35. Tagus Cove, Albemarle Island, 45 fms, Dec. 10, 1934, 3 males, 4 females.
328-35. Tagus Cove, Albemarle Island, 14 fms, Dec. 10, 1934, 1 female.
336-35. Sulivan Bay, James Island, 20 fms, Dec. 12, 1934, 7 specimens.
339-35. Sulivan Bay, James Island, 10 fms, Dec. 12, 1934, 1 male.
340-35. Sulivan Bay, James Island, 8 fms, Dec. 12, 1934, 1 male, 2 females (1 ovig.).
341-35. Sulivan Bay, James Island, 20 fms, Dec. 12, 1934, 1 male.
346-35. Between South Seymour and Daphne Islands, 55 fms, Dec. 13, 1934, 2 young.
352-35. Wreck Bay, Chatham Island, 35 fms, Dec. 15, 1934, 1 male, 4 females.
355-35. Gardner Bay, Hood Island, 12 fms, Dec. 17, 1934, 1 young.
356-35. Gardner Bay, Hood Island, 12-15 fms, Dec. 17, 1934, 1 female.
788-38. SE of Daphne Major Island, 55 fms, Jan. 19, 1938, 1 young.
795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 16 males, 24 females.
795a-38. Sulivan Bay, James Island, 50-60 fms, Jan. 21, 1938, 4 males.
807-38. Academy Bay, Indefatigable Island, 10-25 fms, Jan. 24, 1938, 1 male.
810-38. (D-1) Barrington Island, 48 fms, Jan. 26, 1938, 1 male.
816-38. North of Hood Island, 50-100 fms, Jan. 29, 1938, 2 males.

Measurements.—Large male: length 7.5 mm, width 10.4 mm, cheliped 14.4 mm, chela 8.0 mm, dactyl 4.5 mm.

Color in life.—Ground color of carapace ivory yellow overcast with cadmium orange. Granules on frontal area bright red. Cheliped like carapace, but a little more red. Fingers light clay color with reddish tint; dark red at base of movable finger fading to light at tip. Eyes black. (Petersen)

Habitat.—Bottom rock, coral, nullipore, bryozoa, and, in one case, mud.

Depth.—3-150 fms.

Remarks.—Almost infinite variation is exhibited by the exhaustive series of this species obtained at a great range of depths and on a variety of bottoms. Only a few of them are as well developed as the type of *Panopeus tanneri* Faxon (USNM No. 20606), a synonym of *M. polita,* from 66 fms, Cocos Island, with which they were compared. Distinct beads on the carapace and chelipeds are characteristic. It is perhaps significant that these are Wenman Island specimens, also deep water, and nearest to Cocos Island. A second careful sorting under the binocular of the 800 specimens revealed a number of the very similar young of *Lophopanopeus maculatus* Rathbun, a new record for the archipelago.

Micropanope fraseri, new species

Plate 57, Figs. 1-4

Pilumnus beebei Boone, Zoologica, vol. 8, no. 4, 1927, p. 220, text fig. 80 only; not pp. 219-221, exclusive of text-fig. 80, which is *Micropanope xantusii* (Stimpson).

Type.—Male, holotype, and female, allotype, AHF no. 331, Allan Hancock Foundation, The University of Southern California, from Black Beach Anchorage, Charles Island, Galapagos Islands, shore; January 27, 1933; collected by Allan Hancock Expedition of 1933 at *Velero* station 33-33. The remaining specimens, paratypes, are considered under *Material examined.*

Measurements.—Male holotype: length of carapace 7.4 mm, width 11.1 mm, length of major cheliped 13.5 mm, of major chela 8.3 mm, of major dactyl 4.6 mm; female allotype: length 7.0 mm, width 10.0 mm.

Diagnosis.—Five anterolateral spines, including the postorbital, the second existing as a cluster of spinules. A similar cluster on the subhepatic region. Granules of the manus of the major chela terminating in an oblique line, leaving the outer distal two-thirds smooth and bare.

Description.—Carapace one-third wider than long, smooth, flat, regions faintly indicated, microscopically pubescent anteriorly, completely naked posteriorly, front visible in dorsal view. Frontal lobes obliquely truncate, bordered with acute granules, a shallow sulcus extending from the mesogastric region to the well-defined median V. Orbits spinulous above and below; two well-marked sulci above. Five anterolateral spines, including the postorbital, the second existing as a cluster of spinules, the posterior three largest, anteriorly directed, and with outer edges serrate, their interspaces U-shaped, the greatest distance between spines 3 and 4. A cluster of subhepatic spinules.

Chelipeds clothed with short, soft hairs, interspersed occasionally with longer hairs. Upper surface of major carpus and manus covered with acuminate granules, which become flattened distally and terminate in an oblique line across the manus, leaving the outer distal two-thirds of the hand smooth and bare. Fingers stout, slightly gaping, pollex somewhat deflexed, an enlarged tooth at base of dactyl, a prominent lobe at basal two-fifths of fixed finger; color of fingers not continued on palm. Minor carpus and manus covered with hairs and acuminate granules extending onto the pollex, fingers slender, deflexed, grooved, acuminate, their tips crossing when closed.

Merus of ambulatory legs spinulous, carpus grooved and spinulous, carpus, propodus, and dactylus with long hairs; dactyli with incurving, horny tips.

Segments 3-4-5 of male abdomen coalesced, sixth segment broadly rectangular, seventh triangular with a rounded tip.

Merus of outer maxilliped roughly rectangular, anterolateral angle broadly rounded, almost lobate, inner margin minutely spinulous, antero-internal angle with a shallow notch for insertion of the 3-jointed palpus.

Material examined (469 specimens from 37 stations).—

24-33. Gardner Bay, Hood Island, shore, Jan. 24, 1933, 4 males, 6 females.

28-33. Gardner Bay, Hood Island, 2 fms, Jan. 25, 1933, 3 males, 3 females.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 1 female.

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 3 males, 2 females.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 1 young.

47-33. Barrington Island, 2 fms, Feb. 2, 1933, 2 males, 1 female.

48-33. Barrington Island, shore, Feb. 2, 1933, 1 male, 1 female.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 5 males, 2 females.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 29 specimens.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 43 males, 19 females (1 ovig.) 19 young.

80-33. Duncan Island, shore, Feb. 15, 1933, 14 males, 7 females, 11 young.

94-33. Darwin Bay, Tower Island, coral, Feb. 22, 1933, 2 females.

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 1 male, 1 female.

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 2 males, 3 females.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 1 male, 2 females.

163-34. Black Beach, Charles Island, shore, Jan. 18, 1934, 2 males.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 6 males, 5 females.

175-34. North Seymour Island, shore, Jan. 22, 1934, 1 female.

194-34. Post Office Bay, Charles Island, coral from Onslow Island crater, Jan. 27, 1934, 5 males.

199-34. Black Beach, Charles Island, shore, Jan. 30, 1934, 1 male.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 5 males, 5 females (3 ovig.).

313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 3 males, 2 females.

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 2 males, 6 females (3 ovig.).

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 5 males, 4 females (2 ovig.), 7 young.

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 4 males, 7 females (3 ovig.), 4 young.

350-35. South Seymour Island, shore, Dec. 13, 1934, 1 male, 1 ovig. female.

351-35. South of Black Beach, Charles Island, shore, Dec. 14, 1934, 2 young males.

357-35. Gardner Bay, Hood Island, coral, Dec. 17, 1934, 3 males, 2 females.

358-35. Gardner Bay, Hood Island, shore, Dec. 17, 1934, 2 males, 3 females (2 ovig.), 2 young.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 22 males, 16 females, 2 young.

784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 1 male.

789-38. South Seymour Island, shore, Jan. 19, 1938, 6 males, 7 females.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 4 males, 7 females.

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 2 males, 2 females.

804-38. Onslow Island, near Charles Island, coral, Jan. 23, 1938, 1 male, 1 female, 1 young.

811-38. Barrington Island, coral, Jan. 26, 1938, 55 males, 42 females, 16 young.

811a-38. Barrington Island, *Pavona* coral, Jan. 26, 1938, 1 young male.

Color in life.—Ground color of carapace pale vinaceous russet with pale violet purple tint on intestinal and branchial areas, gradually blending into very strong violet purple on other areas. Tips of marginal teeth light. Numerous small and a few large blotches of bluish white. Cheliped like carapace but violet purple color much more intense. Fingers black; tips brownish white. Ambulatory legs with pale blue and white blotches more in evidence, almost in bands. Dactyl white, nail yellow. (Petersen)

Habitat.—Shore, under rocks; *Pocillopora* coral.

Remarks.—The largest male from the first Charles Island shore station (the type) was compared with the specimen figured as *Pilumnus beebei* Boone (1927, fig. 80) and agrees with it in every particular. Since the photographed specimen was not the type, and since the written description is of a different species and has page precedence over the figure, the writer follows Rathbun (1930) in considering the Boone species a synonym of *Micropanope xantusii* (Stimpson). (See also remarks under this species.)

This distinctive species is named for Dr. C. McLean Fraser.

Genus **TETRAXANTHUS** Rathbun, 1898

Tetraxanthus rathbunae Chace (tentative)

Plate 80, Fig. 1

Not *Xanthodes bidentatus* A. Milne Edwards, Crust. Reg. Mex., p. 353, pl. 53, figs. 5-5b, 1880.

Tetraxanthus bidentatus Rathbun, Bull. Lab. Nat. Hist. State Univ. Iowa, vol. 4, p. 275, 1898; Bull. 152, U.S. Nat. Mus., p. 458, pl. 184, 1930.

Tetraxanthus rathbunae Chace, Mem. de la Soc. Cubana de Hist. Nat., vol. 13, no. 1, p. 52, 1939. Torreia, no. 4, p. 37, 1940.

Type locality.—Old Bahama Channel due north of Punta Caldera, Camaguey Province, Cuba, 150-180 fms.

Type.—MCZ No. 10213.

Range.—From off Cape Lookout, North Carolina *(Albatross),* to off Cape Frio, Brazil *(Albatross);* 15-260 fms. (Chace)

Diagnosis.—Carapace very convex, regions not indicated. Four lateral teeth, of which the first two are inconspicuous, the last two wide and blunt. Front not sharply demarcated from internal orbital angles. A lobe on carpus of cheliped at inner angle. Legs spindly. Tips of fingers crossing.

Material examined.—

58-33. Cormorant Bay, Charles Island, not over 13 fms, Feb. 6, 1933, 1 young female (photographed).

Measurements.—Female: length 6.3 mm, width 7.8 mm, cheliped 9.5 mm, chela 5.0 mm, dactyl 3.0 mm.

Depth.—The Galapagos specimen was dredged in not over 13 fms.

Remarks.—The sending of this unique specimen in Hancock collections to Dr. Fenner A. Chace for comparison with the type of *Xanthodes bidentatus* A. Milne Edwards resulted in a complete review of the Atlantic species of *Tetraxanthus* by Dr. Chace, involving the suppression of *T. rugosus* Rathbun (1930) and the establishment of *T. bidentatus* Rathbun (1898) as *T. rathbunae* Chace with recent *Atlantis* material for types.

The Galapagos specimen, though differing in minor particulars, is tentatively referred to the latter species until more material is available on which to base a Pacific species of *Tetraxanthus*.

Genus **ECTAESTHESIUS** Rathbun, 1898

Ectaesthesius bifrons Rathbun

Plate 58, Figs. 1-7

Ectaesthesius bifrons Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 591, pl. 42, figs. 12-14, 1898; Bull. 152, U.S. Nat. Mus., p. 460, text fig. 76a-c, 1930.

Type locality.—Off Chatham Island, Galapagos Islands; 45 fms.

Type.—USNM No. 21586.

Range.—Known only from the type locality.

Diagnosis.—Carapace smooth and glabrous, anterior margins bidentate, posterior margins strongly converging. Orbits completely closed. Fingers long and tapering. Legs with last three segments hairy; dactyls as long as propodi.

Material examined (9 specimens from 4 stations).—

346-35. South Seymour Island, 55 fms, Dec. 13, 1934, 1 male.

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 2 males (1 illustrated), 1 female (illustrated in part), 2 young.

795a-38. Sulivan Bay, James Island, 50-60 fms, Jan. 21, 1938, 1 female, 1 young.

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 1 female.

Measurements.—Largest male: length 9.3 mm, width 12.9 mm, cheliped 19.0 mm, chela 11.8 mm, dactyl 6.4 mm; female: length 8.2 mm, width 11.4 mm.

Habitat.—Sand and rock, sand and shell, mud and shell.

Depth.—20-60 fms.

Remarks.—This *Trapezia*-like xanthid was not encountered by the earlier Allan Hancock Expeditions, and it remained for the cruise of 1938 to turn it up in any numbers. The finding of 2 males, 2 females, and 3 young in Sulivan Bay, James Island, proves that it must occur with some frequency on the right type of bottom, which in this case was sand with some rock.

E. bifrons is now known to occur at two localities, James and Seymour, other than the type locality, Chatham. The first male specimen has also been found.

Description of the male.—The description of *Ectaesthesius bifrons* as given by Rathbun for the female is applicable to the male with the following exceptions:

1. In the female, the major and minor chelae are apparently alike and are similar to the minor chela of the male. The major chela of the male is higher than the minor and more swollen. The dactylus is considerably shorter than the superior margin of the palm. The inferior margin is less sinuous than that of the minor chela and is almost straight. The pollex is short and thick, bearing on its inner margin a raised ridge which may represent 2 low teeth worn down to their bases. The tips of the fingers are blunt, incurving, that of the fixed finger having a hooked appearance.

2. The male abdomen has 7 free segments, as has the female, a fact which should be mentioned in the generic description. The first two segments are narrow, the third is widest, its edges broadly convex, the fourth and fifth segments narrowing anteriorly, the sixth rectangular, almost square, and the seventh broadly rounded. All 7 segments are fringed with hair.

3. There is a tiny papilla on the inner distal margin of the merus of the cheliped.

Genus **PARAXANTHIAS** Odhner (part), 1925

Paraxanthias insculptus (Stimpson)

Plate 78, Figs. 1, 2

Xanthodes insculpta Stimpson, Ann. Lyc. Nat. Hist., New York, vol. 10, p. 105 (15), 1871.

Pilumnoides pusillus Rathbun, Proc. Washington Acad. Sci., vol. 4, p. 281, pl. 12, figs. 9 and 10, 1902. Boone, Zoologica, vol. 8, no. 4, p. 215, fig. 78, 1927.

Xanthias insculpta Rathbun, Zoologica, vol. 5, p. 157, fig. 38, 1924. Boone, Zoologica, vol. 8, no. 4, p. 207, figs. 74A and B, 1927. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 634, 1931.

Paraxanthias insculptus Rathbun, Bull. 152, U.S. Nat. Mus., p. 468, pl. 189, fig. 4, text fig. 77a-b, 1930. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 16, 1933.

Type locality.—Cape San Lucas, Lower California.

Type.—Not extant.

Range.—Cape San Lucas, Lower California; Galapagos Islands (Hopkins-Stanford Expedition).

Diagnosis.—Carapace subhexagonal, areolate, anterolateral margins with 4 lobes. Chelipeds nodulous, color of fingers continued on palm of adult male.

Material examined (156 specimens from 39 stations).—

24-33. Gardner Bay, Hood Island, shore, Jan. 24, 1933, 2 males.

25-33. Gardner Bay, Hood Island, dredged, Jan. 24, 1933, 3 males, 2 females (1 ovig.).

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 7 males, 8 females (5 ovig.), 3 young.

28-33. Gardner Bay, Hood Island, 2 fms, Jan. 25, 1933, 1 male, 1 female, 2 young.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 1 male.

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 10 males (1 photographed), 8 females (5 ovig.), 1 young.

46-33. Barrington Island, 4-10 fms, Feb. 2, 1933, 9 young.

47-33. Barrington Island, 2 fms, Feb. 2, 1933, 4 young.

49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 1 specimen.

59-33. Off Cormorant Bay, Charles Island, 13 fms, Feb. 6, 1933, fragment.

66-33. Tagus Cove, Albemarle Island, 10-20 fms, Feb. 9, 1933, 1 young.

68-33. South of Cape Berkeley, Albemarle Island, shore, Feb. 10, 1933, 1 young.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 1 male.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 2 males.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 4, 1933, 3 males.

80-33. Duncan Island, shore, Feb. 15, 1933, 3 males and a fragment.

94-33. Darwin Bay, Tower Island, coral, Feb. 22, 1933, 1 male.

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 1 male.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 1 female.

152-34. Tagus Cove, Albemarle Island, coral, Jan. 14, 1934, 2 males.

161-34. Black Beach, Charles Island, 3 fms, Jan. 17, 1934, 1 male, 1 ovig. female.

163-34. Black Beach, Charles Island, shore, Jan. 18, 1934, 1 ovig. female.

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 2 males, 1 female.

169-34. Academy Bay, Indefatigable Island, 15-25 fms, Jan. 20, 1934, 1 young.

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 2 specimens.

173-34. South Seymour Island, 5 fms, Jan. 22, 1934, 1 male.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 4 males.

313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 1 male, 1 ovig. female.

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 20 males, 8 females (6 ovig.).

329-35. Tagus Cove, Albemarle Island, 10 fms, Dec. 10, 1934, 1 young.

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 4 males, 5 females (4 ovig.), 4 young.

350-35. South Seymour Island, shore, Dec. 13, 1934, 1 ovig. female.

357-35. Gardner Bay, Hood Island, shore, Dec. 17, 1934, 1 specimen.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 4 males, 1 female.

789-38. South Seymour Island, shore, Jan. 19, 1938, 3 males, 2 females, 1 young.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 1 female.

804-38. Onslow Island, near Charles Island, coral, Jan. 23, 1938, 1 male, 2 females.

807-38. Academy Bay, Indefatigable Island, 10-25 fms, Jan. 24, 1938, 1 young female.

811-38. Barrington Island, coral, Jan. 26, 1938, 3 males, 3 females.

Measurements.—Largest specimen, male: length 10.4 mm, width 15.0 mm, cheliped 16.0 mm, chela 11.0 mm, dactyl 6.1 mm.

Color in life.—General appearance of crab light ochre red. Chelipeds light purplish mineral red. Fingers dark sorghum brown fading toward almost white tips. Frontal, gastric, cardiac, and intestinal areas a tone darker than branchial areas. A few bluish white spots scattered over carapace, especially along regional grooves. Ambulatory legs with ground color of chelae but speckled with bluish white spots. Dactyl yellow, nail dark yellow. (Petersen)

Habitat.—Rocky shore.

Depth.—Shore; occasionally to 32 fms.

Remarks.—This series is remarkable for the small size of the ovigerous females as compared to the adult males. Females less than 6 mm long were found with the full complement of eggs. The conspicuous extension of the black on the fingers backwards on the palm, given by Boone (1927) as diagnostic of *Xanthias insculpta,* appears from Hancock series to occur only in large males. In females and smaller males it is chopped off abruptly at the base of the fingers or extends but slightly on the palm. A large male examined by the writer checks exactly with the proportions given for the type of *X. insculpta.*

The young of this species is difficult to distinguish from the young of *Xanthodius stimpsoni* (A. Milne Edwards), of the mainland coast; in fact, one Galapagos specimen so labeled was found in the collections of the U.S. National Museum. Since it is altogether possible that *X. stimpsoni* may occur in the Galapagos area, future collectors should examine with particular care their series of *P. insculptus.*

Genus **MENIPPE** de Haan, 1833

Menippe obtusa Stimpson

Plate 82, Figs. 3, 4

Menippe obtusa Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 53 (7), 1860. Rathbun, Bull. 152, U.S. Nat. Mus., p. 478, pl. 197; pl. 198, figs. 1 and 2, 1930. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 16, 1933.

Type locality.—Panama.

Type.—USNM No. 2050.

Range.—Pacific side of Costa Rica and Panama (Sternbergh); Floreana (Charles) Island, Galapagos (Sivertsen).

Diagnosis.—Anterolateral borders strongly arched; 5 broad teeth, including orbital; second tooth bilobate. Chelipeds massive, a stridulating ridge on inner surface of chela. But one lobule on frontal margin adjoining each submedian lobe.

Material examined (19 specimens from 8 stations).—

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 4 females.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 2 males, 1 female.

71-33. James Bay, James Island, shore, Feb. 12, 1933, 4 females.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 1 male.

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 1 female.

174-34. South Seymour Island, shore, Jan. 22, 1934, 2 females.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 2 males, 1 young.

789-38. South Seymour Island, shore, Jan. 19, 1938, 1 large male (photographed).

Measurements.—Largest specimen, male: length 40 mm, width 59 mm, cheliped (rigid) coxa to elbow 41 mm, elbow to tip of dactyl 57 mm, chela 52 mm, height 29 mm, dactyl 27.5 mm.

Habitat.—Under rocks at low tide.

Depth.—Shore.

Remarks.—A specimen from Hood Island was compared with the type (USNM No. 2050) collected by Sternbergh. Stridulating ridges on the inner side of the palm are a remarkable characteristic of the genus. They play upon certain of the anterolateral teeth and appear capable of producing sound. (See illustration.)

Genus **PILUMNUS** Leach, 1815

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Pilumnus*

A¹ Lateral margin with 5 spines, including orbital; size large . . . . . *P. xantusii*

A² Lateral margin with 5 teeth, including orbital; size minute . . . . . *P. pygmaeus*

Pilumnus xantusii Stimpson

Plate 59, Figs. 1-5; Plate 79, Fig. 4

Pilumnus xantusii Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 213 (85), 1860. Rathbun, Bull. 152, U.S. Nat. Mus., p. 486, pl. 201, figs. 1-3, 1930.

Eriphides hispida Boone, Zoologica, vol. 8, no. 4, p. 237, fig. 87B, 1927; (not fig. 87A, which is *E. hispida*).

Pilumnus crosslandi Finnegan, Journ. Linn. Soc. London, vol. 37, p. 643, 1931.

Type locality.—Cape San Lucas, Lower California.

Types.—Cotypes in Paris Mus. and MCZ, No. 1259.

Range.—Cape San Lucas, Lower California (Xantus); Galapagos Islands (as *P. crosslandi* Finnegan), (Crossland).

Atlantic analogue.—*P. sayi* Rathbun.

Diagnosis.—Five anterolateral spines including exorbital. Outer surface of major manus completely roughened. Meri of ambuatory legs entire. Carapace narrow; proportion of length to width 5:6. Carapace and chelipeds covered with long hairs.

Material examined (33 specimens from 9 stations).—

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 3 males, 1 female.

94-33. Darwin Bay, Tower Island, coral, Feb. 22, 1933, 1 male, 2 ovig. females.

97-33. Darwin Bay, Tower Island, coral, Feb. 24, 1933, 3 males, 5 ovig. females.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 1 ovig. female.

101a-33. Darwin Bay, Tower Island, coral, Feb. 26, 1933, 1 ovig. female.

152-34. Tagus Cove, Albemarle Island, coral, Jan. 14, 1934, 4 males (1 illustrated in part), 6 females (1 illustrated), 1 young.

322-35. Tagus Cove, Albemarle Island, 10 fms, Dec. 10, 1934, 1 specimen.

344-35. Bartholomew Island near James Island, coral, Dec. 12, 1934, 1 male, 2 females.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 1 male. Also a paratype of *P. crosslandi* Finnegan and the specimen identified as *Eriphides hispida* by Boone (photographed).

Measurements.—Largest specimen, female: length 17.6 mm, width 22.0 mm, cheliped 24.0 mm, chela 13.7 mm, dactyl 8.8 mm.

Habitat.—Shore, the *Pocillopora* colony, or dredged (10 fms).

Depth.—Shore to 10 fms.

Remarks.—A paratype of *Pilumnus crosslandi* Finnegan (1931) was examined through the courtesy of Dr. Isabella Gordon of the British Museum and later referred to Dr. Fenner A. Chace of Harvard MCZ for comparison with cotypes of Stimpson's *P. xantusii.* Dr. Chace finds agreement in all points but the degree of armature of the upper orbit, a character variable in the 8 cotypes at hand. In all other respects he reports the species indistinguishable.

Through the courtesy of Miss Jocelyn Crane of the New York Zoological Society, the specimen figured by Boone (1927, fig. 87B) as *Eriphides hispida,* young, has been examined and found to be a well-developed male specimen of *Pilumnus xantusii.*

Pilumnus pygmaeus Boone

Plate 80, Fig. 4

Pilumnus pygmaeus Boone, Zoologica, vol. 8, no. 4, p. 221, fig. 81, 1927. Rathbun, Bull. 152, U.S. Nat. Mus., p. 515, pl. 207, figs. 4 and 5, 1930.

Type locality.—Off Hood Island, Galapagos Islands; 15 ft.

Type.—In Mus. N.Y. Zool. Soc.

Range.—Hood and Tower Islands, Galapagos Islands *(Arcturus).*

Diagnosis.—Of minute size. Carapace and chelipeds granulate. Anterolateral margins toothed, not spinulous; teeth obscure. Major chela twice the size of minor, hairy.

Material examined (138 specimens from 28 stations).—

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 1 male (photographed), 1 female.

28-33. Gardner Bay, Hood Island, 2 fms, Jan. 25, 1933, 1 male, 3 females (1 ovig.).

31-33. Gardner Bay, Hood Island, 4 fms, Jan. 26, 1933, 1 ovig. female.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 3 females.

47-33. Barrington Island, 2 fms, Feb. 2, 1933, 2 males, 2 females.

59-33. Off Cormorant Bay, Charles Island, 13 fms, Feb. 6, 1933, 1 male, 8 females.

65-33. Reef north of Tagus Hill, Albemarle Island, reef, Feb. 9, 1933, 1 young.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 1 young.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 2 males.

94-33. Darwin Bay, Tower Island, 2-3 fms, Feb. 22, 1933, 1 young male.

97-33. Darwin Bay, Tower Island, coral, Feb. 24, 1933, 1 male.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 1 ovig. female.

101a-33. Darwin Bay, Tower Island, coral, Feb. 26, 1933, 1 ovig. female.

152-34. Tagus Cove, Albemarle Island, coral, Jan. 14, 1934, 1 young male.

161-34. Black Beach, Charles Island, 3 fms, Jan. 17, 1934, 2 females (1 ovig.).

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 1 female.

169-34. Academy Bay, Indefatigable Island, 15-25 fms, Jan. 20, 1934, 15 males, 3 young.

193-34. Post Office Bay, Charles Island, 8-10 fms, Jan. 27, 1934, 1 specimen.

194-34. Post Office Bay, Charles Island, coral from Onslow Island crater, Jan. 27, 1934, 3 males, 6 females.
306-35. Marchena Island, shore, Dec. 2, 1934, 6 young.
315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 3 males, 1 female.
333-35. James Bay, James Island, shore, Dec. 11, 1934, 1 male, 1 ovig. female.
343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 1 male.
357-35. Gardner Bay, Hood Island, coral, Dec. 17, 1934, 17 males, 13 females.
789-38. South Seymour Island, shore, Jan. 19, 1938, 1 female.
804-38. Onslow Island, near Charles Island, coral, Jan. 23, 1938, 10 males, 14 females.
811-38. Barrington Island, coral, Jan. 26, 1938, 4 males.
811a-38. Barrington Island, *Pavona* coral, Jan. 26, 1938, 1 male.

Measurements.—Length 2.5 mm, width 3.3 mm.

Color in life.—Carapace warm blackish brown with scattered small irregular patches of creamy white to pale blue. A large posterolateral area of white with an adjoining band of reddish ochraceous orange. Cheliped lighter than carapace and covered with small granules of light purplish vinaceous color. Outer surface covered with long courge green hair. Ground color of ambulatory legs same as carapace but almost covered with irregular patches of creamy white with pinkish tone. Hair on legs pale yellowish white. (Petersen)

Habitat.—Shore, *Pocillopora* colony, and shallow dredging.

Depth.—Shore to 13 fms.

Remarks.—While secured more abundantly in the *Pocillopora* coral, *P. pygmaeus* is also gathered in ordinary shore collecting, where it is likely to be overlooked because of its infinitesimal size. Those at Barrington were obtained by use of the diving helmet, those in Cormorant Bay by shallow dredging.

Genus **ACIDOPS** Stimpson, 1871

Acidops fimbriatus Stimpson

Plate 80, Fig. 3

Acidops fimbriatus Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 10, p. 111 (21), 1871. Rathbun, Bull. 152, U.S. Nat. Mus., p. 534. 1930. (part: not the Australian specimen).

Type locality.—Cape San Lucas, Lower California.

Type.—Not extant.

Range.—Cape San Lucas, Lower California; also from Ecuador, if Rathbun's synonymy of *Ceratoplax ciliata* Cano be accepted.

Diagnosis.—Eyestalks elongate, compressed. Front fringed with long, golden hair. Four teeth including orbital; teeth not produced. Chelipeds hairy and with granulate ridges.

Material examined (6 specimens from as many stations).—

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 1 large female.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 1 male (photographed).

170-34. East of Wreck Bay, Chatham Island, 32 fms, Jan. 21, 1934, 1 specimen.

783-38. Darwin Bay, Tower Island, 40-70 fms, Jan. 16, 1938, 1 male.

785-38. Darwin Bay, Tower Island, 20-40 fms, Jan. 17, 1938, 1 female.

811-38. Barrington Island, coral, Jan. 26, 1938, 1 female.

Measurements.—Largest specimen, male: length 11.0 mm, width 14.4 mm, cheliped (rigid) coxa to elbow 7.0 mm, elbow to end of dactyl 7.5 mm, chela 6.5 mm, dactyl 4.1 mm; female: length 10.0 mm, width 13.5 mm.

Color in life.—Ground color of carapace white with bluish tinge, densely covered with hair of a light, pale yellow tint. Scattered all over are long hairs of bright red color to vermilion with light yellow to white tips. An irregular spot of yellow orange on cardiac region, a vermilion spot on gastric region, and a darker spot on branchial region. Cheliped overcast with vermilion spots and covered with long hairs like those of carapace. Carpus of ambulatory legs with tiny spots like those of cheliped; legs clothed with hair similar to that of carapace. Dactyls pale yellow. (Petersen)

Habitat.—Rocky shore; coral; sand bottom.

Depth.—Shore to 70 fms.

Remarks.—In the absence of Stimpson's type, or material from the Gulf of California, it is a moot question whether the Galapagos specimens are what Stimpson had. Certainly they are not the same as the Australian specimen which Rathbun (1930, p. 534, pl. 215) considered conspecific with the Stimpson specimen. Judging from the increasing number of species known to be common to both Gulf of California and Galapagos waters, the writer considers it much more probable that the above series represents the true *Acidops fimbriatus* than does the Australian specimen.

Genus **OZIUS** Milne Edwards, 1834

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Ozius*

A¹ Carapace less than 1½ times as wide as long . . *O. verreauxii*
A² Carapace more than 1½ times as wide as long
  B¹ Chelae not strikingly dissimilar. Anterolateral margins broadly arched . . . . . *O. peraltus*
  B² Fingers of minor chela extremely attenuate. Anterolateral margins almost straight . . . . . *O. tenuidactylus*

Ozius verreauxii Saussure

Plate 81, Fig. 3; Plate 82, Figs. 5, 6

Ozius verreauxii Saussure, Rev. Mag. Zool., ser. 2, vol. 5, p. 359 (6), pl. 12, fig. 1, 1853. Faxon, Mem. Mus. Comp. Zool., vol. 18, p. 21, 1895. Rathbun, Bull. 152, U.S. Nat. Mus., p. 540, pl. 219; pl. 220, fig. 5, and synonymy, 1930. Boone, Zoologica, vol. 8, no. 4, p. 223, fig. 82, 1927. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 17, 1933.

Type locality.—Mazatlan, Mexico.

Type.—Not extant.

Range.—From Magdalena Bay, Lower California (Orcutt), to Ecuador (Nobili); Galapagos Islands (Habel).

Diagnosis.—Carapace less than one and one-half times as wide as long, first three lateral teeth broad and shallow, last two small but well defined. Front with 4 well-marked, equal lobules. A strong tooth at base of dactyl of large chela.

Material examined (45 specimens from 19 stations).—

11-32. Conway Bay, Indefatigable Island, shore, Jan. 12, 1932, 1 male.

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 2 males, 1 female.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 1 male, 3 females (1 ovig.).

42-33. Opposite Kicker Rock, Chatham Island, Jan. 31, 1933, 1 female.

49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 1 male.

52-33. Academy Bay, Indefatigable Island, shore, Feb. 4, 1933, 2 males, 1 female.

56-33. Flamingo Bay, Charles Island, shore, Feb. 5, 1933, 6 males, 2 females.

58-33. Cormorant Bay, Charles Island, shore, Feb. 6, 1933, 2 males, 2 females (1 ovig.).
62-33. Black Bight, Albemarle Island, shore, Feb. 8, 1933, 3 females.
76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 1 male.
82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 3 males, 2 females.
85-33. North Seymour Island, shore, Feb. 18, 1933, 1 male.
93-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 2 males.
96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 1 male.
98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 2 specimens.
202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 1 large female.
306-35. Marchena Island, shore, Dec. 2, 1934, 2 males.
314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 1 male.
789-38. South Seymour Island, shore, Jan. 19, 1938, 1 large female.

Measurements.—Largest male: length 57 mm, width 86 mm, cheliped (rigid) coxa to elbow 45 mm, elbow to tip of dactyl 73 mm, chela 67 mm, dactyl 37 mm; large female: length 53.5 mm, width 82 mm, cheliped (rigid) coxa to elbow 38 mm, elbow to tip of dactyl 60 mm, chela 56 mm, dactyl 28 mm.

Habitat.—Shore, typically under large, columnar boulders of lava, which have to be pried apart with a crowbar.

Depth.—Shore.

Remarks.—Galapagos specimens of *O. verreauxii* attain large size. They are more secretive than other members of the genus, which accounts for their relative scarcity in collections.

Ozius perlatus Stimpson

Plate 81, Fig. 2

Ozius perlatus Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 211 (83), 1860. Rathbun, Bull. 152, U.S. Nat. Mus., p. 543, pl. 221, figs. 1 and 2, 1930. Boone, Zoologica, vol. 8, no. 4, p. 228, fig. 84, 1927. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 17, 1933. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 25, 1939.

Type locality.—Cape San Lucas, Lower California.

Types.—Cotypes in MCZ, No. 1256.

Range.—From Cape San Lucas, Lower California (Xantus), to Santa Elena, Ecuador (Schmitt); Galapagos Islands, *(Arcturus).*

Atlantic analogue.—*O. reticulatus* (Desbonne and Schramm).

Diagnosis.—Carapace more than one and one-half times as wide as long. Anterolateral margins broadly arcuate. Chelipeds not strikingly dissimilar.

Material examined (170 specimens from 20 stations).—

10-32. James Bay, James Island, shore, Jan. 10, 1932, 16 males, 21 females (4 ovig.).

12-32. South Seymour Island, shore, Jan. 14-18, 1932, 1 male, 1 female.

42-33. Opposite Kicker Rock, Chatham Island, shore, Jan. 31, 1933, 2 males, 2 females, 1 young.

49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 1 female.

56-33. Flamingo Bay, Charles Island, shore, Feb. 5, 1933, 3 males, 3 females (2 ovig.), 3 young.

58-33. Cormorant Bay, Charles Island, shore, Feb. 6, 1933, 9 males, 12 females (6 ovig.), 5 young.

62-33. Black Bight, Albemarle Island, shore, Feb. 8, 1933, 11 males (1 photographed), 14 females (2 ovig.), 8 young.

65-33. Reef north of Tagus Hill, Albemarle Island, reef, Feb. 9, 1933, 5 males, 8 females, (7 ovig.), 1 young.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 2 males.

82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 4 males.

85-33. North Seymour Island, shore, Feb. 18, 1933, 1 male, 1 female, 1 young.

93-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 1 female.

175-34. North Seymour Island, shore, Jan. 22, 1934, 1 male.

179-34. Bartholomew Island near James Island, shore, Jan. 23, 1934, 5 males, 5 females (3 ovig.).

306-35. Marchena Island, shore, Dec. 2, 1934, 1 male, 1 female, 1 young.

312-35. Black Beach, Charles Island, shore, Dec. 5, 1934, 1 male, 1 female.

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 5 males, 2 females.

333-35. James Bay, James Island, shore, Dec. 11, 1934, 2 young.

342-35. Bartholomew Island near James Island, shore, Dec. 12, 1934, 4 males, 2 females.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 1 male, 1 female.

Measurements.—Largest specimen, female: length 20.0 mm, width 33.2 mm, cheliped 31.0 mm, chela 20.0 mm, dactyl 10.0 mm.

Color in life.—Cardiac and intestinal regions pansy purple, blending into a dusky aricula purple on other areas. Grooves between areolations white, with only a little of the color of the adjoining areas. Chelipeds dark pansy purple to middle of fingers. Fingers banded with light taupe brown, lighter toward tips. Ambulatory legs light pansy purple, dactyl lighter, nail yellow. (Petersen)

Habitat.—In crevices between large boulders, where they may be found by removing loose pebbles.

Depth.—Shore.

Remarks.—This species is not nearly so abundant or so continuously distributed as the following *O. tenuidactylus* (Lockington). Small colonies adhere closely to a few favorable localities, as at James Bay, where about 40 were removed in a few minutes from a single moist pocket filled with smooth, round pebbles.

Ozius tenuidactylus (Lockington)

Plate 81, Fig. 1

Xantho tenuidactylos Lockington, Proc. Calif. Acad. Sci., vol. 7, pt. 1, p. 98, 1877.

Ozius tenuidactylos Glassell, Trans. San Diego Soc. Nat. Hist., vol. 8, no. 14, p. 104, 1935.

Ozius tenuidactylus Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p 25, 1939.

Ozius agassizii A. Milne Edwards, Crust. Reg. Mex., p. 279, pl. 55, figs. 1-1d, 1880. Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 583, 1898; Bull. 152, U.S. Nat. Mus., p. 544, pl. 221, figs. 3 and 4, 1930. Boone, Zoologica, vol. 8, no. 4, p. 225, fig. 83, 1927. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 17, 1933.

Type locality.—Unknown; one of Lockington's.

Type.—Not extant.

Range.—From the Gulf of California (Lockington) to Ecuador (Nobili); Galapagos Islands (*Hassler* Expedition).

Diagnosis.—Carapace much more than one and one-half times wider than long. Anterolateral and posterolateral margins nearly straight, meeting in two rounded lobes at lateral angles. Chelipeds dissimilar, dactyls of minor chela extremely attenuated.

Material examined (1,224 specimens from 49 stations).—

11-32. Conway Bay, Indefatigable Island, shore, Jan. 12-14, 1932, 2 young.

12-32. South Seymour Island, shore, Jan. 17, 1932, 2 females.
24-33. Gardner Bay, Hood Island, shore, Jan. 24, 1933, 3 males, 7 young.
27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 2 males.
28-33. Gardner Bay, Hood Island, 2 fms, Jan. 25, 1933, 2 males.
30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 1 male, 2 ovig. females, 3 young.
33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 1 male.
38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 1 male.
42-33. Opposite Kicker Rock, Chatham Island, shore, Jan. 31, 1933, 4 males, 2 females.
48-33. Barrington Island, shore, Feb. 2, 1933, 23 males, 16 females (1 ovig.), 5 young.
49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 15 males, 15 females.
52-33. Academy Bay, Indefatigable Island, shore, Feb. 4, 1933, 40 males, 34 females, 1 young.
56-33. Flamingo Bay, Charles Island, shore, Feb. 5, 1933, 25 males, 26 females.
58-33. Cormorant Bay, Charles Island, shore, Feb. 6, 1933, 6 males, 9 females.
69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 1 male.
71-33. James Bay, James Island, shore, Feb. 12, 1933, 20 males, 12 females (1 ovig.).
76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 1 male, 2 females, 2 young.
82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 85 males, 77 females (61 ovig.), 16 young.
85-33. North Seymour Island, shore, Feb. 18, 1933, 56 males, 44 females (34 ovig.), 16 young.
88-33. South Seymour Island, shore, Feb. 19, 1933, 20 males, 14 females (13 ovig.), 6 young.
93-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 7 males, 3 females (2 ovig.), 1 young.
96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 28 males, 27 females (21 ovig.), 1 young.
97-33. Darwin Bay, Tower Island, coral, Feb. 24, 1933, 1 male.
98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 1 male.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 5 males, 5 ovig. females.

146-34. Albemarle Point, Albemarle Island, shore, Jan. 12, 1934, 1 male.

153-34. Mangrove Point, Narborough Island, shore, Jan. 14, 1934, 1 male.

163-34. Black Beach, Charles Island, shore, Jan. 18, 1934, 1 male, 2 females.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 21 males, 20 females (10 ovig.).

174-34. South Seymour Island, shore, Jan. 22, 1934, 13 males, 25 females (6 ovig.).

175-34. North Seymour Island, shore, Jan. 22, 1934, 65 males, 70 females (15 ovig.).

179-34. Bartholomew Island near James Island, shore, Jan. 23, 1934, 20 males, 22 females.

188-34. Cartago Bay, Albemarle Island, shore, Jan. 25, 1934, 8 males, 6 females, 2 young.

199a-34. Post Office Bay, Charles Island, shore, Jan. 30, 1934, 4 males, 2 females.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 6 males, 5 females.

306-35. Marchena Island, shore, Dec. 2, 1934, 6 males, 6 females (1 ovig.), 2 young.

312-35. Black Beach, Charles Island, shore, Dec. 5, 1934, 26 males, 42 females.

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 31 males, 43 females.

333-35. James Bay, James Island, shore, Dec. 11, 1934, 8 males, 14 females.

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 5 males.

350-35. South Seymour Island, shore, Dec. 13, 1934, 1 male.

358-35. Gardner Bay, Hood Island, shore, Dec. 17, 1934, 11 males, 6 females, 1 young.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 1 male, 1 fragment.

782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 3 males, 4 females, 1 young.

784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 1 male.

789-38. South Seymour Island, shore, Jan. 19, 1938, 1 male.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 2 males.

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 1 male, 5 females (2 ovig.).

808-38. Academy Bay, Indefatigable Island, shore, Jan. 25, 1938, 4 males, 6 females (4 ovig.).

Measurements.—Largest specimen, female: length 16.5 mm, width 25.9 mm, cheliped 34.0 mm, chela 23.3 mm, dactyl 10.8 mm.

Color in life.—Carapace and chelipeds uniform heliotrope purple. Fingers black, lightening toward tips. Eggs magenta. (Garth)

Habitat.—Shore, under loose rocks and pebbles. Rarely found in coral.

Depth.—Shore.

Remarks.—This species is one of the most abundant of the Galapagos fauna and is exceeded in numbers of specimens collected only by *Leptodius cooksoni* Miers among free-living Xanthidae. It may be distinguished at once from its congeners and from all other Galapagos xanthids by the extremely tenuous dactyls of the minor chela, which suggested to Lockington the specific name *tenuidactylus*. The species has gone for many years under the name of *Ozius agassizii* A. Milne Edwards, and so appears in all publications dealing with Galapagos Brachyura with the exception of Schmitt (1939), and including the Rathbun monograph (1930).

Genus **ERIPHIA** Latreille, 1817

Key to the Galapagos Species of the Genus *Eriphia*

A¹ Frontal lobes and margins of orbit smooth and convex. Tubercles of wrist coalesced . . . . . *E. granulosa*

A² Frontal lobes and margins of orbit thin and granulate. Tubercles of wrist single . . . . . *E. squamata*

Eriphia squamata *Stimpson*

Plate 83, Figs. 5, 6

Eriphia squamata Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 56 (10), 1859. Rathbun, Zoologica, vol. 5, no. 14, p. 158, 1924; Bull. 152, U.S. Nat. Mus., p. 550, pl. 223; pl. 224, fig. 1; text fig. 84, and synonymy, 1930. Hult, Arkiv för Zoologi, Band 30A, no. 5, p. 13, 1938.

Type locality.—Mazatlan, Mexico.

Type.—Not extant.

Range.—From Magdalena Bay, Lower California (Orcutt), and Agua Verde Bay, Gulf of California *(Albatross),* to Salinas, Ecuador (Schmitt); Galapagos Islands (Jones).

Atlantic analogue.—*E. gonagra* (Fabricius).

Diagnosis.—Front wide, lobes truncate, edges thin and granulate. Granules of gastric region arranged in short rows. Tubercles of wrist single, rounded, and ciliated anteriorly.

Material examined.—None from among Hancock Galapagos material. The W. H. Jones specimen, USNM No. 17783, male, has been examined and is definitely of this species. It was taken at Chatham Island, Galapagos, April 16-17, 1884, and is photographically reproduced herein. Two females from Eden Island, Galapagos, taken by the *Noma* Expedition in 1923 have also been examined through the courtesy of Miss Jocelyn Crane of the New York Zoological Society. A series of this species taken at Cocos Island by the Hancock Expeditions has been used in comparing the Galapagos material.

Eriphia granulosa A. Milne Edwards

Plate 80, Fig. 2

Eriphia granulosa A. Milne Edwards, Crust. Reg. Mex., p. 339, pl. 56, figs. 2-2b, 1880. Rathbun, Proc. Washington Acad. Sci., vol. 4, no. 8, p. 282, 1902; Bull. 152, U.S. Nat. Mus., p. 551, pl. 224, figs. 2-4, 1930. Boone, Zoologica, vol. 8, no. 4, p. 234, 1927 (part: the Galapagos specimens). Finnegan, Journ. Linn. Soc. London, vol. 37, p. 646, 1931. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 18, 1933. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 25, 1939.

Type locality.—Chile (?).

Type.—In Paris Mus.

Range.—Chile (?) (the holotype); Galapagos Islands (Jones); *not* Cocos Island (Boone).

Diagnosis.—Anterolateral margins spinate. Frontal lobes and margins of orbit smooth and convex, edges of front arching. Granules of gastric region single, not combined in rows. Tubercles of wrist coalesced.

Material examined (553 specimens from 58 stations).—

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 3 males, 3 females (2 ovig.).

28-33. Gardner Bay, Hood Island, 2 fms, Jan. 25, 1933, 1 male, 1 young.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 9 males, 2 females, 1 fragment.

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 3 males, 3 ovig. females.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 2 males.

48-33. Barrington Island, shore, Feb. 2, 1933, 3 males, 2 females (1 ovig.).

49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 2 males.

52-33. Academy Bay, Indefatigable Island, shore, Feb. 4, 1933, 4 females (1 ovig.).

56-33. Flamingo Bay, Charles Island, shore, Feb. 5, 1933, 2 males, (1 photographed), 3 ovig. females.

58-33. Cormorant Bay, Charles Island, shore, Feb. 6, 1933, 2 males, 1 female.

65-33. Reef north of Tagus Hill, Albemarle Island, reef, Feb. 9, 1933, 5 males, 3 females, 1 young.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 25 males, 13 females, 6 young.

71-33. James Bay, James Island, shore, Feb. 12, 1933, 4 males, 5 females.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 4 males, 1 female.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 3 males, 1 female.

80-33. Duncan Island, shore, Feb. 15, 1933, 1 young.

82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 1 female, 1 young.

85-33. North Seymour Island, shore, Feb. 18, 1933, 7 males, 3 females.

88-33. South Seymour Island, shore, Feb. 19, 1933, 1 male, 2 females.

93-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 1 male.

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 9 males, 16 females (7 ovig.).

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 4 males, 5 ovig. females.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 6 males, 13 females (8 ovig.).

146-34. Albemarle Point, Albemarle Island, shore, Jan. 12, 1934, 12 males, 6 females (3 ovig.).

152-34. Tagus Cove, Albemarle Island, coral, Jan. 14, 1934, 1 male, 1 female, 7 young.

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 4 males, 4 ovig. females.

161-34. Black Beach, Charles Island, 3 fms, Jan. 17, 1934, 2 males.

163-34. Black Beach, Charles Island, shore, Jan. 18, 1934, 2 males, 8 females (7 ovig.).

166-34. Black Beach, Charles Island, shore, Jan. 19, 1934, 2 males, 4 females (3 ovig.).

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 9 males, 11 females (10 ovig.).

174-34. South Seymour Island, shore, Jan. 22, 1934, 2 males, 2 ovig. females.

175-34. North Seymour Island, shore, Jan. 22, 1934, 10 males, 6 females (5 ovig.).

179-34. Bartholomew Island near James Island, shore, Jan. 23, 1934, 2 males, 3 ovig. females.

188-34. Cartago Bay, Albemarle Island, shore, Jan. 25, 1934, 1 male, 1 ovig. female.

194-34. Post Office Bay, Charles Island, coral from Onslow Island crater, Jan. 27, 1934, 1 male, 1 small female.

199-34. Black Beach, Charles Island, shore, Jan. 30, 1934, 1 male.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 6 males, 5 females.

306-35. Marchena Island, shore, Dec. 2, 1934, 12 males, 3 females (1 ovig.), 1 fragment.

312-35. Black Beach, Charles Island, shore, Dec. 5, 1934, 11 males, 11 females (7 ovig.).

313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 1 male.

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 20 males, 22 females (13 ovig.).

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 16 males, 1 fragment.

316-35. Off Gordon Rocks, Indefatigable Island, 20 fms, Dec. 8, 1934, 1 male.

333-35. James Bay, James Island, shore, Dec. 11, 1934, 15 males, 9 females (5 ovig.).

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 27 males, 17 females (10 ovig.).

350-35. South Seymour Island, shore, Dec. 13, 1934, 3 males, 4 females (3 ovig.).

354-35. Wreck Bay, Chatham Island, shore, Dec. 15, 1934, 1 male, 1 female.

357-35. Gardner Bay, Hood Island, coral, Dec. 17, 1934, 14 males, 6 females (2 ovig.).

358-35. Gardner Bay, Hood Island, shore, Dec. 17, 1934, 2 males, 1 female.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 23 males, 6 females.

782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 5 males, 5 females.
784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 2 males.
789-38. South Seymour Island, shore, Jan. 19, 1938, 3 females.
796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 3 males, 1 female.
800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 1 male.
804-38. Onslow Island, near Charles Island, coral, Jan. 23, 1938, 1 female.
808-38. Academy Bay, Indefatigable Island, shore, Jan. 25, 1938, 2 males.
811a-38. Barrington Island, *Pavona* coral, Jan. 26, 1938, 1 young female.

Measurements.—A large male: length 14.0 mm, width 19.0 mm, cheliped (rigid) coxa to elbow 12 mm, elbow to tip of dactyl 16 mm, chela 15.0 mm, dactyl 8.0 mm.

Color in life.—Carapace and chelipeds purplish brown. Apple-green markings on cardiac region. Two longitudinal bands of purple on maxillipeds and three on subhepatic region. Last three rows of squamae on chelae (most ventral) white. Abdominal segments each marked with purplish brown transversely. Row of setae on hepatic region yellow. (Garth)

Habitat.—Shore, under rocks, and in *Pocillopora* coral.

Depth.—Shore to 3 fms.

Remarks.—After a careful individual examination of over 500 specimens of *Eriphia* from the Galapagos Islands in Hancock collections it appears that all are *E. granulosa.* The writer differs emphatically from Boone (1927, p. 234), who avers that this species may prove to be only a subspecies of *E. squamata* Stimpson and agrees with Rathbun (1930, p. 552) that it is very distinct from, and not to be confused with, the *gonagra-squamata* type. Her distinguishing features are borne out very nicely by a pair of Hancock specimens from Charles Island which were compared with Hopkins-Stanford material (USNM No. 25667). The front is entire, the granules of the carapace single, and the tubercles of the wrist tend to form bands (pl. 80, fig. 2).

That there has been confusion of these species, even among specialists, is amply demonstrated. A specimen in the National Museum identified by Rathbun as *squamata,* Pinchot Expedition, Daphne Island, A. K. Fisher, collector, is definitely *granulosa.* The specimens reported by Boone (1927) from Cocos Island as *granulosa* have been re-examined at the request of the writer by Miss Jocelyn Crane of the New York Zoological Society and have proved to be *squamata.*

The occurrence of *E. granulosa* at localities other than the Galapagos Islands is open to question. A footnote in Rathbun (1930, p. 552) states that an interrogation point follows the designation "Chili" on the label of the type specimen in the Paris Museum. Its reported occurrence on Cocos Island has been disposed of in the paragraph above. In conclusion, it would seem that *E. granulosa* is a Galapagos endemic species, and that *E. squamata,* found from Mexico to Ecuador occurs also at Cocos and sporadically in the Galapagos Islands (pl. 83, figs. 5, 6).

Genus **ERIPHIDES** Rathbun, 1897

Eriphides hispida (Stimpson)

Plate 83, Figs. 3, 4

Eriphia hispida Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 218 (90), 1860.

Eriphides hispida Rathbun, Proc. Washington Acad. Sci., vol. 4, p. 282, 1902; Bull. 152, U.S. Nat. Mus., p. 552, pls. 225 and 226, 1930. Boone, Zoologica, vol. 8, no. 4, p. 236, fig. 87A, 1927; (not fig. 87b, which is *Pilumnus xantusii* Stimpson). Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 18, 1933. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 25, 1939.

Pseuderiphia hispida Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 590, 1898.

Type locality. West coast of Central America.

Type.—Not extant.

Range.—West coast of Costa Rica (Tristan) to Panama (A. Milne Edwards); Galapagos Islands *(Albatross).*

Diagnosis.—Carapace and chelipeds covered with short bristles and paved with sharp granules. Front very wide. Fingers of minor chela spoon shaped.

Material examined (133 specimens from 31 stations).—

10-32. James Bay, James Island, shore, Jan. 10, 1932, 1 male.

12-32. South Seymour Island, shore, Jan. 17, 1932, 1 male.

24-33. Gardner Bay, Hood Island, shore, Jan. 24, 1933, 1 specimen.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 13 males, 16 ovig. females (1 photographed).

52-33. Academy Bay, Indefatigable Island, shore, Feb. 4, 1933, 4 specimens.

56-33. Flamingo Bay, Charles Island, shore, Feb. 5, 1933, 5 males, 6 females (2 ovig.), 1 young.

65-33. Reef north of Tagus Hill, Albemarle Island, reef, Feb. 9, 1933, 8 males, 4 young.

68-33. South of Cape Berkeley, Albemarle Island, shore, Feb. 10, 1933, 1 male.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 1 male.

71-33. James Bay, James Island, shore, Feb. 12, 1933, 3 specimens.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 5 specimens.

82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 1 specimen.

85-33. North Seymour Island, shore, Feb. 18, 1933, 2 males, 2 ovig. females, 2 young.

88-33. South Seymour Island, shore, Feb. 19, 1933, 1 young.

93-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 1 male, 1 ovig. female, 2 young.

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 2 males.

146-34. Albemarle Point, Albemarle Island, shore, Jan. 12, 1934, 3 males.

163-34. Black Beach, Charles Island, shore, Jan. 18, 1934, 1 male, 2 ovig. females.

168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 1 male, 2 females.

175-34. North Seymour Island, shore, Jan. 22, 1934, 6 males, 3 females.

179-34. Bartholomew Island near James Island, Jan. 23, 1934, 4 males, 1 female.

199a-34. Post Office Bay, Charles Island, shore, Jan. 30, 1934, 1 male.

306-35. Marchena Island, shore, Dec. 2, 1934, 9 males, 1 female, 1 young.

312-35. Black Beach, Charles Island, shore, Dec. 5, 1934, 8 males, 1 female.

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 1 female.

333-35. James Bay, James Island, shore, Dec. 11, 1934, 3 males, 4 females, 1 young.

343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 1 male.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 11 specimens.

782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 1 female, 2 young.

796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 1 male.

808-38. Academy Bay, Indefatigable Island, shore, Jan. 25, 1938, 1 female.

Measurements.—Large female: length 43.7 mm, width 59 mm, cheliped 67 mm, chela 38 mm, dactyl 21 mm.

Color in life.—Carapace dull violet black with a few cadmium orange patches showing on gastric and cardiac areas. Eyes garnet brown. Cheliped neutral red with tubercles violet black. Movable finger neutral red with purplish tint fading toward tip. Fixed finger very much darker, almost black, with white tip and teeth. Ventral side dull orange yellow with abdomen dull purplish red. Eggs scarlet. (Petersen)

Habitat.—Rocky shore; typically in burrows in sandstone.

Depth.—Shore.

Remarks.—The purple bristle crab is one of the most formidable members of the Galapagos crustacean fauna, and one of the very few species capable of inflicting a painful wound. The massive claws maintain their viselike grip even after being severed from the body. A ledge of soft rock southeast of Cormorant Point, Charles Island, was riddled with burrows of this species.

Genus **DOMECIA** Eydoux and Souleyet, 1842

Domecia hispida Eydoux and Souleyet

Plate 81, Fig. 5

Domecia hispida Eydoux and Souleyet, Voy. Bonite, vol. 1, Crust., p. 235, 1842. Rathbun, Bull. 152, U.S. Nat. Mus., p. 554, pl. 227, and synonymy, 1930. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 647, 1931. Crane, Zoologica, vol. 22, no. 3, p. 73, 1937.

Type locality.—Sandwich Islands.

Type.—In Paris Mus.

Range.—From Arena Bank, Gulf of California *(Zaca),* to Gorgona Island, Colombia (Crossland); Eastern Atlantic, Indian, and Pacific Oceans.

Diagnosis.—Carapace transversely oval, flat, smooth. Front and anterolateral margins profusely spinulous, posterolateral margins converging rapidly. Chelipeds covered with black spines. Merus of third maxilliped of no great length. Legs spiny.

Material examined (250 specimens from 20 stations).—

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 2 females (1 ovig.).

47-33. Barrington Island, 2 fms, Feb. 2, 1933, 1 ovig. female.

59-33. Off Cormorant Bay, Charles Island, 13 fms, Feb. 6, 1933, 1 male.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 20 males, 26 females (12 ovig.).

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 3 males, 18 females (12 ovig.), 1 young.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 9 males, 11 females (7 ovig.).

80-33. Duncan Island, coral, Feb. 15, 1933, 14 males, 18 females (9 ovig.), 5 young.

82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 1 male, 2 females.

94-33. Darwin Bay, Tower Island, coral, Feb. 22, 1933, 33 specimens.

97-33. Darwin Bay, Tower Island, coral, Feb. 24, 1933, 18 males, 24 females (16 ovig.).

101a-33. Darwin Bay, Tower Island, coral, Feb. 26, 1933, 5 males, 2 ovig. females.

168a-34. Academy Bay, Indefatigable Island, coral, Jan. 20, 1934, 1 female.

189-34. Cartago Bay, Albemarle Island, coral, Jan. 25, 1934, 2 females (1 ovig.).

194-34. Post Office Bay, Charles Island, coral from Onslow Island crater, Jan. 27, 1934, 1 male, 1 female.

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 1 female.

309-35. Marchena Island, 8 fms, Dec. 3, 1934, 1 specimen.

311-35. Marchena Island, 20 fms, Dec. 3, 1934, 1 specimen.

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 5 males, 3 females (2 ovig.).

804-38. Onslow Island near Charles Island, coral, Jan. 23, 1938, 2 males, 1 female.

811-38. Barrington Island, coral, Jan. 26, 1938, 5 males (1 photographed), 12 females (6 ovig.).

Measurements.—A large female: length 8.3 mm, width 10.8 mm.

Habitat.—*Pocillopora* coral, shallow dredging. Among sponges, under stones. (Crane)

Depth.—Shore; also 8-20 fms.

Remarks.—Associated with the *Trapezias* in the *Pocillopora* colony, this species was taken occasionally where coral was not recorded. It was probable in such a case that a small head of coral was found and cracked on the beach, no record having been made of it at the time. This species was dredged twice in shallow water.

D. hispida is now recorded from the Galapagos Islands.

Genus **TRAPEZIA** Latreille, 1825

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Trapezia*

A[1] Fronto-orbital width greatest width of carapace. No lateral tooth . . . . . *T. digitalis*

A[2] Fronto-orbital width less than greatest width of carapace. A lateral tooth . . . . . *T. cymodoce ferruginea*

Trapezia cymodoce ferruginea Latreille

Plate 81, Fig. 4

Trapezia ferruginea Latreille, Encyc. Meth., Hist. Nat., Entom., vol. 10, p. 695, 1825.

Trapezia cymodoce ferruginea Rathbun, Mem. Mus. Comp. Zool., vol. 35, p. 58, 1907; Bull. 152, U.S. Nat. Mus., p. 557, pl. 228, figs. 1 and 2, and synonymy, 1930. Boone, Zoologica, vol. 8, no. 4, p. 240, fig. 88, 1927. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 645, 1931. Hult, Arkiv för Zoologi, Band 30A, no. 5, p. 13, 1938. Crane, Zoologica, vol. 22, no. 3, p. 73, 1937.

Type locality.—Red Sea.

Type.—Not in Paris Mus.

Range.—From Arena Bank, Gulf of California *(Zaca),* to Gorgona Island, Colombia (Crossland); Galapagos Islands *(Arcturus);* Red Sea and Indo-Pacific Ocean.

Diagnosis.—Carapace smooth, no trace of regions. Fronto-orbital width almost equal to width of carapace. Anterolateral margins short, diverging slightly posteriorly. A lateral tooth projecting. Color red.

Material examined (1,809 specimens from 21 stations).—

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 37 males, 31 females (16 ovig.).

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 411 specimens.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 37 males, 26 females (18 ovig.).

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 17 males, 17 females (12 ovig.).

80-33. Duncan Island, coral, Feb. 15, 1933, 42 males, 37 females (27 ovig.), 2 young.

94-33. Darwin Bay, Tower Island, coral, Feb. 22, 1933, 308 specimens.

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 1 male.

97-33. Darwin Bay, Tower Island, coral, Feb. 24, 1933, 486 specimens.

99-33. Darwin Bay, Tower Island, tangles, Feb. 25, 1933, 1 male, 1 ovig. female, 2 young.

101a-33. Darwin Bay, Tower Island, coral, Feb. 26, 1933, 23 males, 13 females (8 ovig.).

168a-33. Academy Bay, Indefatigable Island, coral, Jan. 20, 1934, 5 males, 3 females.

189-34. Cartago Bay, Albemarle Island, coral, Jan. 25, 1934, 6 males, 5 females (4 ovig.).

202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, 3 males, 1 female.

315-35. Opposite Gordon Rocks, Indefatigable Island, 8-10 fms, Dec. 8, 1934, 32 males, 26 females (20 ovig.), 2 young.

320-35. Academy Bay, Indefatigable Island, 8-10 fms, Dec. 8, 1934, 2 males.

350-35. South Seymour Island, shore, Dec. 13, 1934, 1 male, 1 ovig. female.

782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 3 males, 2 females (1 ovig.), 1 young.

784-38. Darwin Bay, Tower Island, coral, Jan. 17, 1938, 6 males, 5 females (2 ovig.).

789-38. South Seymour Island, shore, Jan. 19, 1938, 1 male, 4 females (2 ovig.).

800-38. Cartago Bay, Albemarle Island, shore, Jan. 22, 1938, 3 specimens.

811-38. Barrington Island, coral, Jan. 26, 1938, 206 specimens.

Measurements.—A large, ovigerous female: length 13.3 mm, width 16.3 mm, cheliped 26.3 mm, chela 16.5 mm, dactyl 8.2 mm.

Color in life.—Bright red.

Habitat.—The *Pocillopora* coral colony.

Depth.—Shore to 10 fms.

Remarks.—The collection of over 1,800 of this red porcelain crab was almost involuntary. Every head of living *Pocillopora* coral contained hundreds of specimens, and it was as convenient to preserve them as to toss them overboard while cracking coral. In view of the exceeding abundance of this species, it seems incredible that a single specimen obtained by William Beebe and two specimens by Rolf Blomberg are the only examples ever recorded from the Galapagos Islands. Apparently, no other expedition has examined coral heads, for the *Trapezias* rarely stray beyond the protecting labyrinth of their rasping branches.

Trapezia digitalis Latreille

Plate 81, Fig. 6

Trapezia digitalis Latreille, Encyc. Meth., Hist. Nat., Entom., vol. 10, p. 696, 1825. Rathbun, Bull. 152, U.S. Nat. Mus., p. 559, pl. 228, figs. 5 and 6, and synonymy, 1930. Crane, Zoologica, vol. 22, no. 3, p. 73, 1937.

Type locality.—Red Sea.

Type.—Not extant.

Range.—From Arena Bank, Gulf of California *(Zaca),* to Panama (Bradley); Red Sea to Indo-Pacific Ocean.

Diagnosis.—Carapace smooth, regions not indicated. Fronto-orbital width greatest width of carapace, the anterolateral margins converging posteriorly. No lateral projection. Color brown.

Material examined (667 specimens from 18 stations).—

30-33. Gardner Bay, Hood Island, coral, Jan. 26, 1933, 5 males, 6 females.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 82 males, 59 females (40 ovig.), 5 young.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 9 males, 10 females (2 ovig.).

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 4 males, 8 females (7 ovig.).

80-33. Duncan Island, coral, Feb. 15, 1933, 11 males, 12 females (8 ovig.).

94-33. Darwin Bay, Tower Island, coral, Feb. 22, 1933, 61 males, 70 females (36 ovig.), 11 young.

97-33. Darwin Bay, Tower Island, coral, Feb. 24, 1933, 41 males, 31 females (15 ovig.).

99-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 2 males, 1 female.

101a-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 15 males, 8 females (4 ovig.).

-33. Galapagos Islands, 1933, 52 males, 47 females (15 ovig.), 7 young.

168a-34. Academy Bay, Indefatigable Island, coral, Jan. 20, 1934, 1 male, 1 ovig. female.

202-34. Gardner Bay, Hood Island, coral, Jan. 31, 1934, 1 female.

315-35. Opposite Gordon Rocks, Indefatigable Island, coral, Dec. 8, 1934, 16 males, 7 females (3 ovig.), fragment.

782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 1 male.

784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 4 males, 5 females (2 ovig.).

789-38. South Seymour Island, shore, Jan. 19, 1938, 4 males, 1 ovig. female.

800-38. Cartago Bay, Albemarle Island, Jan. 22, 1938, 1 male.

811-38. Barrington Island, coral, Jan. 26, 1938, 28 males, 30 females (21 ovig.).

Measurements.—A large female: length 10.8 mm, width 13.5 mm, cheliped 18.0 mm, chela 12.8 mm, dactyl 7.3 mm.

Color in life.—Brown and yellow.

Habitat.—The *Pocillopora* coral colony.

Depth.—Shore.

Remarks.—This brown and yellow *Trapezia* occurs with the red *T. cymodoce ferruginea* Latreille in the proportion of 1 : 3. In separating so many hundreds, the color alone was relied upon, although there are other important differences, as given in the diagnoses. The front of *T. digitalis* is finely denticulate, as compared to the shallow frontal lobes of *T. c. ferruginea,* and there is no lateral tooth.

T. digitalis is now recorded from the Galapagos Islands.

Genus **QUADRELLA** Dana, 1851

Quadrella nitida Smith

Plate 80, Fig. 6

Quadrella nitida Smith, Proc. Boston Soc. Nat. Hist., vol. 12, p. 288, 1869. Rathbun, Bull. 152, U.S. Nat. Mus., p. 561, pl. 229, and synonymy, 1930. Crane, Zoologica, vol. 22, no. 3, p. 74, 1937.

Type locality.—Pacheca, Perlas Islands, Panama.

Type.—In Peabody Mus., Yale Univ.

Range.—Lower California (Stimpson) to Panama (Bradley); 6-75 fms. (Crane)

Diagnosis.—Carapace hexagonal, convex, smooth, regions not indicated. Front cut into 4 spines, median notch deepest. Merus of cheliped stout, projecting beyond carapace and armed with 6 to 8 spines. Carpus with an inner tooth. Hand exceeding width of carapace, fingers long and incurved.

Material examined.—

311-35. Marchena Island, 20 fms, Dec. 3, 1934, 1 young (photographed).

Measurements.—Young specimen: length 3.4 mm, width 3.5 mm.

Color in life.—From a Gulf of California specimen: ground color of carapace light yellowish drab gray, overcast with tiny snowflakelike blotches. Front dark scarlet red, extended on eyestalk. Ground color of cheliped deep orange buff. Merus netted with light scarlet; carpus same but much lighter scarlet; hand overcast with scarlet spots, very dense on upper surface and extending on fingers. A few large, carmine spots at the distal end of the hand and on the fingers. Ambulatory legs a warm buff. (Petersen)

Habitat.—The gorgonian, *Muricea miser* Verrill, according to Crane.

Depth.—6-75 fms. (Crane)

Remarks.—For a classic description of the remarkable association of this rare xanthid crab and the gorgonian, *Muricea miser* Verrill, the reader is referred to Crane (1937).

Q. nitida is now recorded from the Galapagos Islands.

Genus **MALDIVIA** Borradaile, 1903

Maldivia Borradaile, *In:* J. S. Gardiner, Fauna and Geography of the Maldive and Laccadive Archipelagoes, vol. 1, pt. 1, pp. 269-270, 1903.

The following are the characters of this genus: (1) *Carapace* hexagonal, swollen, a little longer than broad, hairless, roughened with granulations which pass into spines at the sides, and with indications of the regions. (2) *Front* broad, triangular, widely grooved, bent strongly downwards. (3) *Anterolateral edge* toothed, about equal to postero-lateral. *Hind edge* wavy. (4) *Orbits* large, very slanting, not fully closed. (5) Abdomen of male seven-jointed. (6) *Endostome ridges* present, but not very strong. (7) *Eyes* large. (8) *Antennae* with slender basal joints which do not touch the front, and long flagella. (9) *Merus of third maxilliped* about as long as broad, without a notch in the fore edge, which is straight. (10) Chelipeds stout, *Pilumnus*-like, fingers not hollowed at the tip. (11) Walking legs moderately stout. (Borradaile)

Maldivia galapagensis Garth

Plate 80, Fig. 5

Maldivia galapagensis Garth, Allan Hancock Pac. Exped., vol. 5, no. 2, p. 22, pl. 8, figs. 1-6.

Type locality.—Onslow Island near Charles Island, Galapagos Islands, from *Pavona* coral in 2 fms.

Type.—AHF no. 385.

Range.—Charles and Barrington Islands, Galapagos Islands.

Diagnosis.—Carapace convex, polished, faintly granulate anteriorly. Posterolateral borders exceeding anterolateral; 2 denticles on anterolateral margin. Granules of cheliped flattened, not arranged in rows. Minor chela excavate, fingers slender, curved, with knifelike edges.

Material examined (31 specimens from 4 stations).—

180-34. Sulivan Bay, James Island, 3½ fms, coral, Jan. 22, 1934, 1 male, 4 females (3 ovig.).

194-34. Post Office Bay, Charles Island, coral from Onslow Island crater, Jan. 27, 1934, 7 males, 11 females.

804-38. Onslow Island near Charles Island, *Pavona* coral, Jan. 23, 1938, 2 males, 4 females, (the type series, including the male holotype, AHF no. 385).

811a-38. Barrington Island, *Pavona* coral, Jan. 26, 1938, 2 females.

Measurements.—Male holotype: length 3.7 mm, width 4.6 mm, chela 4.9 mm; female allotype: length 3.9 mm, width 5.5 mm.

Color in life.—Ground color of carapace ivory yellow to cream buff with designs of Eugenia red and grass green on posterior and Brazil red and cedar green on anterior areas. Cheliped clear creamy white with coral red on merus and carpus. Fingers hazel brown at base, becoming lighter toward tips. Ventral side clear white with tinge of bluish lavender. (Petersen)

Habitat.—*Pavona* coral.

Depth.—2-3½ fms.

Remarks.—The compact heads of "brain coral" (*Pavona* sp.) allow much less freedom of movement for the crustaceans which inhabit their interstices than do the multiramose heads of *Pocillopora.* The *Pavona* colony is therefore made up of fewer and less active species than the *Trapezias* and *Domecias,* the alpheid and peneid shrimps of the *Pocillopora,* which indeed were totally lacking in the three loads of *Pavona* cracked by *Velero III* parties. In their place are the delicate *Maldivia* and an even more fragile shrimp, which has been turned over to Dr. W. L. Schmitt for study. Although an effort was made to find specimens *in situ,* none were observed as the cracking with geological hammers proceeded. All specimens were recovered from the rinse water at the bottom of the bucket.

Family *PINNOTHERIDAE*

Subfamily PINNOTHERINAE

Genus PARAPINNIXA Holmes, 1894

Parapinnixa glasselli Garth

Plate 84, Figs. 1, 2

Parapinnixa glasselli Garth, Allan Hancock Pac. Exped., vol. 5, no. 2, p. 24, pl. 9, figs. 1-4, 1939.

Type locality.—Tagus Cove, Albemarle Island, Galapagos Islands.

Type.—USNM No. 77367.

Range.—Known only from the type locality.

Diagnosis.—Displacement of first ambulatory leg equal to nearly one-half the volume of carapace. Fingers long and slender, gaping when closed, a small tooth near tips. Immovable finger curving well downward. Lines separating abdominal segments sinuous.

Material examined.—

66a-33. Tagus Cove, Albemarle Island, from "roach" trap attached to fish trap suspended in 2 fms, Feb. 9, 1933, 2 females, including the holotype (USNM No. 77367).

Measurements.—Female holotype: length 2.8 mm, width 6.5 mm.

Habitat.—Worm tubes.

Depth.—2-3 fms.

Remarks.—The capture of two female specimens in a baited "roach" trap, suspended in two fathoms of water attached to a lobster pot, suggests that this species, while undoubtedly commensal, does not hesitate to fare forth from its worm tube in search of food.

The male of the species is unknown.

Subfamily PINNOTHERELIINAE

Genus PINNIXA White, 1846

Pinnixa transversalis (Milne Edwards and Lucas)

Plate 84, Figs. 6-8

Pinnotheres transversalis Milne Edwards and Lucas, d'Orbigny's Voy. Amer. Merid., vol. 6, pt. 1, p. 23, 1843; vol. 9, atlas, pl. 10, figs. 3-3e, 1847.

Pinnixa transversalis Milne Edwards, Ann. Sci. Nat., ser. 3, Zool., vol. 20, p. 220 (186), pl. 11, fig. 5, 1853. Rathbun, Bull. 97, U.S. Nat. Mus., p. 131, pl. 29, figs. 1-3, text figs. 74-76, and synonymy, 1918. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 648, 1931.

Type locality.—Chile.

Type.—In Paris Mus.

Range.—From Coiba Island, Panama (Crossland), to Punta Arenas, Patagonia (Lenz).

Atlantic analogue.—*P. faxoni* Rathbun.

Diagnosis.—A prominent ridge across carapace at cardiac level. Lateral angles forming a prominent shoulder. Terminal segment of palpus of third maxilliped reaching proximal end of merus. Abdomen of male enlarging from middle of sixth segment; tip semicircular.

Material examined.—

783-38. Darwin Bay, Tower Island, 40-70 fms, Jan. 16, 1938, 1 male, 2 females.

Measurements.—Largest specimen, female: length 5.0 mm, width 9.4 mm.

Habitat.—From the tubes of *Chaetopterus variopedatus* (Renier), identified by Olga Hartman. (See pl. 84, fig. 7).

Depth.—2½-70 fms.

Remarks.—The occurrence of this commensal crab may be expected wherever its widespread host, *Chaetopterus,* is found. This worm builds a tube to which sand particles are attached by agglutination.

P. transversalis is now recorded from the Galapagos Islands.

Genus **PINNAXODES** Heller, 1865

Pinnaxodes chilensis (Milne Edwards)

Plate 84, Figs. 3-5

Pinnotheres chilensis Milne Edwards, Hist. Nat. Crust., vol. 2, p. 33, 1837.

Pinnaxodes chilensis Smith, in Verrill, Amer. Nat., vol. 3, p. 245, 1869. Rathbun, Bull. 97, U.S. Nat. Mus., p. 175, pl. 38, text fig. 111a and b, and synonymy, 1918. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 26, 1939.

Type locality.—Valparaiso, Chile.

Type.—In Paris Mus.

Range.—Ecuador (Heller) to Port Otway, Patagonia *(Albatross);* Galapagos Islands (Hopkins-Stanford Expedition).

Diagnosis.—Carapace subquadrate with rounded corners, soft in female, firm in male. Female chelae elongate. A constriction about sixth abdominal segment of male.

Material examined.—

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, a single specimen contained within the test of the sea urchin, *Strongylocentrotus gibbosus* (Valenciennes) (pl. 84, fig. 4).

Habitat.—Commensal in the periproct of the sea urchin, *S. gibbosus.*

Remarks.—Schmitt (1939) is in error in stating that the first time this species had been observed in the Galapagos Islands was on the Presidential Cruise of 1938. Actually, it was taken on the Hopkins-Stanford Expedition in 1898-99, but because of its commensal habit was observed, not by the person who reported on the Brachyura, but by the person who wrote up the echinoderms. H. L. Clark (1902) writes concerning *Strongylocentrotus gibbosus* (Valenciennes):

"There are 11 dry specimens of this interesting urchin, from Tagus Cove. They range in diameter from 16 to 40 mm. The color is a distinct reddish-brown, the spines very dark olive, tipped with purplish; specimens from Chile and Peru, whence this species was previously known, are said to be gray. *All but the smallest of the shells before me are distorted by the presence of the parasitic crab so generally found in this urchin, and in all but 3 the crab is present.*" (Italics are author's)

Because the relationship between *Pinnaxodes chilensis* and this host is a specific one, there can be no doubt that this was the species observed by Dr. Clark.

Family *CYMOPOLIIDAE*

Genus **CYMOPOLIA** Roux, 1828

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Cympolia*

A¹ Second ambulatory leg not more than twice as long as carapace
  B¹ Two acuminate anterolateral spines, excluding exorbital
    C¹ Four slender frontal teeth. Carapace 1⅛ times broader than long . . . . . *C. lucasii*
    C² Two large, triangular frontal teeth. Carapace 1¼ times as broad as long . . . . . *C. cortezi*
  B² Four truncate anterolateral spines, excluding exorbital. A sternal plate at base of third walking leg . . *C. velerae*
A² Second ambulatory leg more than twice as long as carapace . . . . . *C. fragilis*

Cymopolia cortezi Crane

Plate 85, Fig. 2

Cymopolia cortezi Crane, Zoologica, vol. 22, no. 3, p. 75, pl. 8, fig. 25, 1937.

Type locality.—Santa Inez Bay, Gulf of California; 60 fms.

Type.—N.Y. Zool. Soc. No. 36,895.

Range.—Known only from the type locality.

Diagnosis.—Front with 2 large, triangular teeth; 2 sharp anterolateral teeth. Last leg overreaching merus of third ambulatory leg. Lobe at distal extremity of ambulatory meri acute.

Material examined.—

143-34. Wenman Island, 100-150 fms, Jan. 11, 1934, 1 young specimen (photographed).

Measurements.—Young specimen: length 5.5 mm, width 6.2 mm.

Habitat.—Mud and crushed shell (Crane). *Velero III* records show rock, coral, and nullipore, presumably with sand.

Depth.—60-150 fms.

Remarks.—The single small specimen from deep water north of Wenman Island conforms remarkably with Miss Crane's description of the type, and also with a small specimen from the Gulf of California, particularly as regards the front, the two triangular teeth of which meet at almost a right angle. Extension of the range of *C. cortezi* to the Galapagos Islands is less surprising in view of the simultaneous extension of ranges of two other Gulf of California species, *C. lucasii* Rathbun and *C. fragilis* Rathbun.

C. cortezi is now recorded from the Galapagos Islands.

Cymopolia lucasii (Rathbun)

Plate 87, Fig. 1

Palicus lucasii Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 600, pl. 43, fig. 2, 1898.

Cymopolia lucasii Rathbun, Bull. 97, U.S. Nat. Mus., p. 193, pl. 44, figs. 1 and 2, text fig. 119, 1918. Crane, Zoologica, vol. 22, no. 3, p. 76, 1937.

Type locality.—Off Cape San Lucas, Lower California; 31 fms.

Type.—USNM No. 21590.

Range.—From Arena Bank, Gulf of California *(Zaca),* to Cape San Lucas *(Albatross);* 31-60 fms.

Atlantic analogue.—*C. faxoni* (Rathbun).

Diagnosis.—Carapace only one-eighth wider than long, tuberculate. Anterolateral margin with 2 acute teeth, excluding exorbital; supraorbital teeth sharpened. Ambulatory legs wide; an acute lobe at distal end of merus of legs 1 and 2, that of leg 3 rounded.

Material examined (18 specimens from 11 stations).—

69a-33. Albemarle Point, Albemarle Island, 12 fms, mud sample, Feb. 11, 1933, 1 specimen.

148-34. Tagus Cove, Albemarle Island, 12-15 fms, Jan. 13, 1934, 1 male.

149-34. Tagus Cove, Albemarle Island, 20 fms, Jan. 13, 1934, 2 females, fragment.

157-34. Tagus Cove, Albemarle Island, 10-18 fms, Jan. 15, 1934, 2 males (1 photographed), 3 females.

177-34. Sulivan Bay, James Island, 5-20 fms, Jan. 23, 1934, 2 females.

201-34. Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 5 males, 1 female.

345-35. Off Daphne Islands, 30 fms, Dec. 13, 1934, 1 female.

361-35. Gardner Bay, Hood Island, 12 fms, Dec. 19, 1934, 1 male.

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 2 females.

799-38. Cartago Bay, Albemarle Island, 15-18 fms, Jan. 22, 1938, 1 male.

Measurements.—Largest male: length 10.5 mm, width 12.4 mm, second ambulatory leg 20.0 mm.

Color in life.—Dragon's blood red and white. A solid median band of color extends longitudinally from front to posterior border, dividing the carapace into 3 approximately equal parts, the outer two of which are white. Anterolateral and preorbital teeth dragon's blood red, orbital tooth white. Legs banded with dragon's blood red, the wide propodal band brightest. Spines of merus, tips of dactyls, and entire reduced leg white. (Garth)

Habitat.—Muddy and sandy bottoms (Crane). *Velero III* records show sand and rock, sand and shell, sand and algae, and two stations: "coral, nullipore, and rock."

Depth.—5-60 fms.

Remarks.—A Galapagos Island specimen of this species, identified by its author, Miss Rathbun, was the first indication that Gulf of California *Cymopolias* might be expected in the Galapagos archipelago. Since that time two other Gulf species, *C. fragilis* Rathbun and *C. cortezi* Crane, as well as a new species, *C. velerae* Garth, have been found to occur in the Galapagos Islands.

C. lucasii is now recorded from the Galapagos Islands.

Cymopolia fragilis Rathbun

Plate 85, Figs. 3, 4

Cymopolia fragilis Rathbun, Proc. U.S. Nat. Mus., vol. 16, p. 259, 1893; Bull. 97, U.S. Nat. Mus., p. 213, pl. 51, figs. 2 and 3, text fig. 129a and b, 1918.

Cymopolia xacae Glassell, Zoologica, vol. 21, no. 17, p. 217, 1936. Crane, Zoologica, vol. 22, no. 3, p. 76, pl. 8, fig. 26, 1937.

Type locality.—Off Lower California; 58 and 71 fms.

Type.—USNM No. 17485.

Range.—From northwest of Cedros Island, Lower California *(Albatross),* to Ecuador *(Albatross),* including the Gulf of California; 52-71 fms. *(Albatross).*

Diagnosis.—Carapace one and one-half times as wide as long. Four anterolateral teeth, excluding exorbital. First ambulatory leg short, not overreaching merus of second in male.

Material examined (124 specimens from a single station).—

143-34. Wenman Island, 100-150 fms, Jan. 11, 1934, 56 males, 65 females (including the photographed pair), 3 young.

Measurements.—Largest specimen, male: length 7.7 mm, width 12.3 mm, length of second ambulatory leg 22.5 mm; largest female; length 8.2 mm, width 11.7 mm, length of second ambulatory leg 22.8 mm. Note difference of proportions in the two sexes.

Habitat.—Bottom of coral, nullipores, and calcareous worm tubes.

Depth.—52-150 fms.

Remarks.—Specimens from Wenman Island were compared with the type of *C. zacae* Glassell in the laboratories of the New York Zoological Society by Miss Jocelyn Crane, who found them to agree very nicely. Specimens from Wenman Island were also compared with the type of *C. fragilis* Rathbun at the U.S. National Museum, and were found to be the same. Evidence pointing to the synonymy of *C. zacae,* which was said by Glassell (1936) to differ from *C. fragilis* in having 5 anterolateral spines instead of 4, in having the first leg extending past the merus of the second instead of falling short of it, in having the suborbital lobe truncate, instead of bilobed, and not equally advanced with the pterygostomian lobe, is as follows:

1. The inferior orbital lobe is truncate in the type specimen of *C. fragilis,* although bilobed on the photographed specimen (USNM No. 20620) from Ecuador.

2. The inferior orbital lobe makes an oblique line with the pterygostomian lobe, which is much more advanced on an anterior-posterior line. Wenman Island specimens and the type of *C. fragilis* are alike in this respect.

3. Both Wenman Island specimens and the type specimen of *C. fragilis* have 4 teeth if the exorbital tooth and the posterior marginal fold, which resembles a tooth, be excluded.

4. The first ambulatory leg is detached from the carapace of the type of *C. fragilis* and the other legs are rigid, making it impossible to tell whether or not the type had the first ambulatory leg overreaching the

merus of the second. In the Wenman Island specimens there is sufficient difference between merus lengths of the male and female to allow the male first leg to overreach and the female not.

Cymopolia velerae Garth

Plate 85, Fig. 1

Cymopolia velerae Garth, Allan Hancock Pac. Exped., vol. 5, no. 2, p. 25, pl. 10, figs. 1-4.

Type locality.—Off Daphne Minor Island, Galapagos Islands, 70-80 fms.

Type.—AHF no. 386.

Range.—Throughout the Galapagos Islands, exclusive of the three northern islands, in depths of 3-80 fms *(Velero III)*. (See *Remarks* below).

Diagnosis.—Five anterolateral teeth diminishing in size posteriorly. Outer suborbital lobe trilobed, inner sinus narrow. Outer slope of frontal lobe continuous with preorbital lobe. Supraorbital teeth broad, truncate. Merus of leg 2 with distal spine acuminate. Carapace 1.4 times wider than long; a sinuous posterior line of tubercles.

Material examined (111 specimens from 16 stations).—

55-33. Lat. 1° 03′ 30″ S, Long. 90° 17′ 30″ W, 60 fms, Feb. 5, 1933, 1 male.

147-34. Tagus Cove, Albemarle Island, 30 fms, Jan. 13, 1934, 1 female.

171-34. East of Wreck Bay, Chatham Island, 35-40 fms, Jan. 21, 1934, 3 females.

182-34. James Bay, James Island, 30 fms, Jan. 24, 1934, 1 male.

185-34. Cartago Bay, Albemarle Island, 32 fms, Jan. 25, 1934, 16 males, 15 females (5 ovig.), 3 fragments.

186-34. Cartago Bay, Albemarle Island, 32 fms, Jan. 25, 1934, 10 males, 2 ovig. females, 1 young.

190-34. Lat. 0° 55′ S, Long. 90° 30′ W, 58-60 fms, Jan. 26, 1934, 3 males, 7 females (3 ovig.), 2 young.

198-34. NW of Post Office Bay, 55-65 fms, Jan. 29, 1934, 1 ovig. female.

201-34. Off Gardner Bay, Hood Island, 25-35 fms, Jan. 31, 1934, 4 males, 1 young.

318-35. Off Gordon Rocks, Indefatigable Island, 45 fms, Dec. 8, 1934, 2 females (1 ovig.).

324-35. Tagus Cove, Albemarle Island, 45 fms, Dec. 10, 1934, 2 females.

346-35. Between South Seymour and Daphne Islands, 55 fms, Dec. 13, 1934, 1 male, 2 females, 2 fragments.

347-35. South Seymour Island, 3 fms, Dec. 13, 1934, 3 males.

792-38. Off Daphne Minor Island, 70-80 fms, Jan. 20, 1938, 2 males, 16 females, including the holotype (AHF no. 386).

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 2 males, 1 female.

814-38. North of Hood Island, 20-40 fms, Jan. 28, 1938, 12 females.

Measurements.—Female holotype: length 6.9 mm, width 9.9 mm, length of second ambulatory leg 14.3 mm; largest male paratype: length 4.1 mm, width 4.9 mm.

Habitat.—Sand, sand and shell, sand and nullipore, sand and coral; mud, mud and shell, mud and sand; rock.

Depth.—3-80 fms.

Remarks.—This species was erroneously recorded as occurring in depths to 150 fms, apparently through inadvertency in including a Wenman Island station, at which only *C. fragilis* Rathbun and *C. cortezi* Crane were taken.

Family *GRAPSIDAE*

Subfamily GRAPSINAE

Genus GRAPSUS Lamarck, 1801

Grapsus grapsus (Linnaeus)

Plate 86, Figs. 1, 2

Cancer grapsus Linnaeus, Syst. Nat., ed. 10, vol. 1, p. 630, 1758.

Grapsus grapsus Ives, Proc. Acad. Nat. Sci. Philadelphia, p. 190, 1891. Faxon, Mem. Mus. Comp. Zool., vol. 18, p. 30, 1895. Rathbun, Bull. 97, U.S. Nat. Mus., p. 227, pls. 53 and 54, and synonymy, 1918. Boone, Zoologica, vol. 8, no. 4, p. 244, fig. 90, 1927. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 18, 1933. Crane, Zoologica, vol. 22, no. 3, p. 77, 1937.

Pachygrapsus crassipes Boone, Zoologica, vol. 8, no. 4, p. 257, fig. 93, 1927.

Type localities.—America and Ascension Island.

Types.—Not extant.

Range.—San Benito Islands, Lower California (Anthony), to Mollendo, Peru (Coker); Galapagos Islands *(Hassler);* occurs also in the Atlantic.

Diagnosis.—Carapace discoidal with transverse granular ridges. Front almost vertical. Fingers with spoon shaped tips.

Material examined (76 specimens from 22 stations).—

11-32. Conway Bay, Indefatigable Island, shore, Jan. 12, 1932, 2 males, 1 female.

24-33. Gardner Bay, Hood Island, shore, Jan. 24, 1933, 2 males, 2 females, (1 ovig.).

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 4 males.

42-33. Opposite Kicker Rock, Chatham Island, shore, Jan. 31, 1933, 1 male.

48-33. Barrington Island, shore, Feb. 2, 1933, 1 male (soft shell).

49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 2 males.

52-33. Academy Bay, Indefatigable Island, shore, Feb. 4, 1933, 1 male.

56-33. Flamingo Bay, Charles Island, shore, Feb. 5, 1933, 16 young.

62-33. Black Bight, Albemarle Island, shore, Feb. 8, 1933, 3 young males.

65-33. Reef north of Tagus Hill, Albemarle Island, reef, Feb. 9, 1933, 5 young males.

66-33. Tagus Cove, Albemarle Island, 10-20 fms, Feb. 9, 1933, 4 young.

68-33. South of Cape Berkeley, Albemarle Island, shore, Feb. 10, 1933, 3 young males.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 2 young males.

85-33. North Seymour Island, shore, Feb. 18, 1933, 1 male.

93-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 3 males (1 photographed), 1 female.

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 9 males, 1 female.

146-34. Albemarle Point, Albemarle Island, shore, Jan. 12, 1934, 2 males, 1 large female.

179-34. Bartholomew Island near James Island, shore, Jan. 23, 1934, 1 small male.

184-34. James Bay, James Island, shore, Jan. 24, 1934, 1 young male.

306-35. Marchena Island, shore, Dec. 2, 1934, 1 male.

312-35. Black Beach, Charles Island, shore, Dec. 5, 1934, 1 young.

815-38. East side of Hood Island, shore, Jan. 28, 1938, 4 males, 1 ovig. female.

Measurements.—A large male: length 65 mm, width 73 mm, cheliped 65 mm, chela 30 mm, dactyl 21 mm.

Habitat.—Lava rocks above water line (spray zone).

Depth.—Shore.

Remarks.—"Sally Lightfoot," as this well-known grapsoid crab is commonly called, is abundant on all the islands of the Galapagos group and, because of the contrast of its bright red carapace against jet black lava, the most conspicuous member of the crustacean fauna. The young are so unlike the adults as to have been mistaken for another species, as noted under *Pachygrapsus crassipes* Boone. The greenish-blue carapace is spattered with creamy dots and the slender legs appear longer in proportion to body size than in the more compact adult. Furthermore, the young are occasionally obtained in shallow dredging, a situation in which the adults would not be found. The loss of a leg or two to the bright-eyed Galapagos bittern, a bird which stalks these crabs relentlessly, seems but a temporary inconvenience, as a new appendage is soon regenerated.

Genus **GEOGRAPSUS** Stimpson, 1858

Geograpsus lividus (H. Milne Edwards)

Plate 86, Figs. 3, 4

Grapsus lividus Milne Edwards, Hist. Nat. Crust., vol. 2, p. 85, 1837.

Geograpsus lividus Stimpson, Ann. Lyc. Nat. Hist. New York, vol. 7, p. 230, 1860. Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 604, 1898; Bull. 97, U.S. Nat. Mus., p. 232, pl. 55, and synonymy, 1918. Boone, Zoologica, vol. 8, no. 4, p. 251, fig. 91, 1927. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 19, 1933. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 25, 1939.

Type locality.—Antilles.

Type.—In Paris Mus.

Range.—From La Paz, Lower California, (Belding), to Chile; Galapagos Islands *(Albatross);* occurs also in the Atlantic and in Hawaii.

Diagnosis.—Carapace subquadrate, sides little arched. Edge of front visible in dorsal view. Fingers with pointed tips. Legs conspicuously hairy.

Material examined (46 specimens from 14 stations).—

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 2 males, 1 female.

49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 6 males, 1 female.

56-33. Flamingo Bay, Charles Island, shore, Feb. 5, 1933, 5 males, 5 females.

58-33. Cormorant Bay, Charles Island, shore, Feb. 6, 1933, 5 males, 1 female.

62-33. Black Bight, Albemarle Island, shore, Feb. 8, 1933, 2 males.
68-33. South of Cape Berkeley, Albemarle Island, shore, Feb. 10, 1933, 3 males, 4 females.
69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 1 female.
82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 2 males.
85-33. North Seymour Island, shore, Feb. 18, 1933, 1 male.
153-34. Mangrove Point, Narborough Island, shore, Jan. 14, 1934, 1 male, 2 females.
179-34. Bartholomew Island near James Island, shore, Jan. 23, 1934, 1 ovig. female.
184-34. James Bay, James Island, shore, Jan. 24, 1934, 1 ovig. female.
306-35. Marchena Island, shore, Dec. 2, 1934, 1 female (photographed).
314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 1 ovig. female.

Measurements.—Largest specimen, female: length 30 mm, width 38 mm, cheliped 50 mm, chela 25 mm, dactyl 15.7 mm.

Habitat.—Rocky shore, above water line (spray zone).

Depth.—Shore.

Remarks.—*G. lividus* is a most secretive species in comparison with *Grapsus grapsus,* dwelling in crevices above the water line and darting into some deep recess upon the slightest sign of danger. Only the glint of the long, yellow hairs with which the walking legs are liberally provided reveals the hiding place of the species.

Genus **PACHYGRAPSUS** Randall, 1840

Pachygrapsus transversus (Gibbes)

Plate 87, Fig. 2

Grapsus transversus Gibbes, Proc. Amer. Assoc. Adv. Sci., vol. 3, p. 181, 1850.

Pachygrapsus transversus Gibbes, Proc. Amer. Assoc. Adv. Sci., vol. 3, p. 182, 1850. Rathbun, Proc. Washington Acad. Sci., vol. 4, no. 8, p. 279, 1902; Bull. 97, U.S. Nat. Mus., p. 244, pl. 61, figs. 2 and 3, and synonymy, 1918. Boone, Zoologica, vol. 8, no. 4, p. 253, fig. 92, 1927. Finnegan, Journ. Linn. Soc. London, vol. 37, p. 649, 1931. Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 19, 1933. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 25, 1939.

Type locality.—Key West, Florida.

Type.—Not extant.

Range.—From Agua Verde Bay, Gulf of California *(Albatross),* to Matapalo, Peru (Coker); Galapagos Islands (Jones); occurs also in the Atlantic.

Diagnosis.—Lateral margins strongly converging, bearing a single tooth just behind outer orbital tooth at widest part of carapace. Edge of front sinuous. Distal extremity of merus of fourth leg finely dentate.

Material examined (214 specimens from 40 stations).—

24-33. Gardner Bay, Hood Island, shore, Jan. 24, 1933, 8 males, 6 females.

27-33. Gardner Bay, Hood Island, shore, Jan. 25, 1933, 1 ovig. female.

30-33. Gardner Bay, Hood Island, shore, Jan. 26, 1933, 53 males, 23 females (12 ovig.).

38-33. SE of Cormorant Point, Charles Island, Jan. 29, 1933, 1 ovig. female.

48-33. Barrington Island, shore, Feb. 2, 1933, 6 males, 3 ovig. females.

49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 3 males, 1 ovig. female.

52-33. Academy Bay, Indefatigable Island, shore, Feb. 4, 1933, 5 males, 1 ovig. female.

56-33. Flamingo Bay, Charles Island, shore, Feb. 5, 1933, 1 male.

62-33. Black Bight, Albemarle Island, shore, Feb. 8, 1933, 1 male.

65-33. Reef north of Tagus Hill, Albemarle Island, reef, Feb. 9, 1933, 8 males, 2 females.

69-33. Albemarle Point, Albemarle Island, shore, Feb. 11, 1933, 2 males, 2 females (1 ovig.).

71-33. James Bay, James Island, shore, Feb. 12, 1933, 1 male, 1 female.

73-33. Cartago Bay, Albemarle Island, shore, Feb. 13, 1933, 1 male.

76-33. Cartago Bay, Albemarle Island, shore, Feb. 14, 1933, 1 male, 1 female.

82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 3 males, 7 females (3 ovig.).

85-33. North Seymour Island, shore, Feb. 18, 1933, 4 males, 2 females.

93-33. Darwin Bay, Tower Island, lagoon, Feb. 22, 1933, 3 males, 3 females.

96-33. Darwin Bay, Tower Island, shore, Feb. 24, 1933, 1 male, 6 females.

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 1 male (photographed), 1 female.
146-34. Albemarle Point, Albemarle Island, shore, Jan. 12, 1934, 1 male, 3 females (1 ovig.), 1 young.
153-34. Mangrove Point, Narborough Island, shore, Jan. 14, 1934, 1 male.
154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1933, 1 male.
168-34. Academy Bay, Indefatigable Island, shore, Jan. 20, 1934, 1 male, 1 ovig. female.
168a-34. Academy Bay, Indefatigable Island, coral, Jan. 20, 1934, 3 young.
174-34. South Seymour Island, shore, Jan. 22, 1934, 2 females.
175-34. North Seymour Island, shore, Jan. 22, 1934, 1 male, 1 ovig. female.
179-34. Bartholomew Island near James Island, shore, Jan. 23, 1934, 1 male, 2 females.
180-34. Sulivan Bay, James Island, coral, Jan. 23, 1934, 1 specimen.
199a-34. Post Office Bay, Charles Island, shore, Jan. 30, 1934, 1 female.
202-34. Gardner Bay, Hood Island, shore, Jan. 31, 1934, fragment.
306-35. Marchena Island, shore, Dec. 2, 1934, 5 males, 3 ovig. females.
312-35. Black Beach, Charles Island, shore, Dec. 5, 1934, 1 male.
314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 2 males, 1 ovig. female.
333-35. James Bay, James Island, shore, Dec. 11, 1934, 2 males.
343-35. Sulivan Bay, James Island, shore, Dec. 12, 1934, 1 male.
354-35. Wreck Bay, Chatham Island, shore, Dec. 15, 1934, 1 male, 1 female.
359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 3 males, 3 females (1 ovig.).
782-38. Darwin Bay, Tower Island, shore, Jan. 16, 1938, 1 male, 2 females, 1 young.
789-38. South Seymour Island, shore, Jan. 19, 1938, fragment.
796-38. Sulivan Bay, James Island, shore, Jan. 21, 1938, 1 young.

Measurements.—Largest specimen, male: length 19 mm, width 23.3 mm, cheliped 32 mm, chela 18 mm, dactyl 12.8 mm.

Color in life.—General appearance black, chela shading to purple on outer margin of movable finger. A strip of apple green shows on either side of the carpus at point of articulation with next segment. Abdomen hazel brown. (Garth)

Habitat.—Rocky shore.

Depth.—Shore.

Remarks.—After a microscopic examination of over 200 *Pachygrapsus* from the Galapagos Islands, most of which are minute, it appears that all have the distal extremity of the merus of the last ambulatory leg finely dentate and so must be classified as *P. transversus* (Gibbes) instead of as *P. crassipes* Randall (1839), in which the merus is entire. Since Boone (1927, p. 257) figures and describes as *crassipes* a young *Grapsus grapsus* (Linnaeus), there remains but a single record of the occurrence in the Galapagos Islands of *P. crassipes,* that of Rathbun (1902). The identification of this specimen is correct, as verified by Mr. G. P. Ashcraft. The error, if there be one, is on the label. The specimen (USNM No. 25663) is one of three (2 males, 1 female) taken by the Hopkins-Stanford Expedition in 1898-99 and recorded from Tagus Cove, Albemarle Island, in 12 fathoms of water. Other species taken at this station were *Micropanope polita* (Rathbun), *Medaeus spinulifer* (Rathbun), *Portunus (Achelous) angustus* Rathbun, *Stenorynchus debilis* (Smith), *Podochela margaritaria* Rathbun, and *Microphrys triangulatus* (Lockington). While it is normal for the above-mentioned species to be found in 12 fathoms, it is not usual to encounter *P. crassipes* outside the intertidal zone; in fact, records of its occurrence at any depth at all are nonexistent. Although it is possible that there may have been a shore station of the same day at which *P. crassipes* was collected, to be later inadvertently placed in a bottle containing the dredged specimens, it is more probable that the *crassipes* was collected at a more northerly station. This is borne out by the fact that in his unpublished personal notes R. E. Snodgrass records spending a day ashore on the south end of Guadalupe Island at Whaler's Bay, where *crassipes* is abundant. Until further specimens are obtained to substantiate this Galapagos record, it seems unwise to consider *crassipes* a member of the Galapagan fauna.

Genus **PLANES** Leach

Planes minutus (Linnaeus)

Cancer minutus Linnaeus, Syst. Nat., ed. 10, vol. 1, p. 625, 1758.

Planes minutus Verrill, Trans. Conn. Acad. Arts and Sci., vol. 13, p. 325, pl. 13, figs. a-j'; pl. 27, fig. 6; text fig. 7, 1908. Rathbun, Proc. Washington Acad. Sci., vol. 4, no. 8, p. 278, 1902; Bull. 97, U.S. Nat. Mus., p. 253, pl. 63, 1918. Boone, Zoologica, vol. 8, no. 4, p. 259, fig. 94, 1927. Crane, Zoologica, vol. 22, no. 3, p. 77, 1937.

Type locality.—"in Pelagi Fuco natante."

Type.—Not extant.

Range.—From Humboldt Bay, California (Dall), to Payta, Peru (Jones); Galapagos Islands *(Albatross);* also occurs in the Atlantic.

Diagnosis.—Carapace smooth, bare, convex in both directions, length and breadth subequal. Frontal width approximately half of carapace width, front entire or slightly bilobed. A small lateral tooth behind outer orbital tooth.

Material examined.—None from Galapagos.

Remarks.—While the writer has examined as many living sea turtles on Galapagos beaches as are likely to come under the observation of one collector, he has not been fortunate in finding this pelagic species in the situation from which it has been reported, about the reptile's venter. Like *Plagusia immaculata* Lamarck, which rides upon drifting logs, its occurrence depends to a large extent upon the vagaries of ocean currents and eddies.

Subfamily VARUNINAE

Genus **EUCHIROGRAPSUS** Milne Edwards, 1853

Euchirograpsus americanus A. Milne Edwards

Plate 85, Figs. 5, 6

Euchirograpsus americanus A. Milne Edwards, Bull. Mus. Comp. Zool., vol. 8, p. 18, 1880. Rathbun, Bull. 97, U.S. Nat. Mus., p. 282, pl. 74, text fig. 144, 1918.

Type locality.—Barbados, 69 fms.

Type.—Cotypes in MCZ, No. 6132.

Range.—From off South Carolina *(Albatross)* to off Santa Lucia *(Blake);* Caribbean Sea; 42-278 fms.

Diagnosis.—Carapace squarish, covered with pubescence. A single lobe on the inner surface of the merus of the third maxilliped. Three small spines behind outer orbital spine on margins of carapace. Legs hairy with conspicuous bands of orange red.

Material examined (Two specimens from as many stations).—

186-34. Cartago Bay, Albemarle Island, 32 fms, Jan. 25, 1934, 1 female.

795-38. Sulivan Bay, James Island, 35-40 fms, Jan. 21, 1938, 1 male (photographed).

Measurements.—Largest specimen, male: length 11.8 mm, width 13.3 mm, cheliped 19.0 mm, chela 10.0 mm, dactyl 5.7 mm.

Color in life.—Ground color light apricot orange, a shade darker on frontal portion of carapace, which is marked by delicate orange-red blotches and small orange-red dots. Eye green. Chelae apricot orange

with ridges of orange red; tips of teeth white. Ambulatory legs apricot orange banded with orange red on merus, carpus, and propodus, and dactylus. Tip of nail white. (Petersen)

Habitat.—Coarse sand and nullipore; sand and rock.

Depth.—32-278 fms.

Remarks.—The specimens have been compared with the cotypes from Barbados at Harvard MCZ by Dr. Fenner Chace and with a male and two females taken off Santa Lucia by Captain E. Cole of the *Blake* in the collections of the U.S. National Museum. Concerning the former comparison Dr. Chace writes: "From the specimens I have seen, both Atlantic and Pacific, I do not believe the latter deserve a specific designation at this time." With this sentiment the writer, in his examination of the *Blake* specimens, is in perfect agreement.

E. americanus is now recorded for the first time in Pacific waters.

Subfamily PLAGUSIINAE

Genus **PLAGUSIA** Latreille, 1806

Plagusia immaculata Lamarck

Plagusia immaculata Lamarck, Hist. Nat. Anim. sans Vert., vol. 5, p. 247, 1818. Rathbun, Bull. 97, U.S. Nat. Mus., p. 335, pl. 103, 1918. Boone, Zoologica, vol. 8, no. 4, p. 264, fig. 95, 1927.

Type locality.—Mediterranean Sea or Indian Ocean.

Type.—In Paris Mus.

Range.—From Punta Arenas, Costa Rica (Biolley), to Taboga Island, Panama (Meek and Hildebrand); Galapagos Islands *(Arcturus);* also Indo-Pacific.

Diagnosis.—Carapace subcircular, depressed, covered with low tubercles or squamae, lateral margin toothed. Meri of ambulatory legs with an anterodistal spine, legs conspicuously hairy.

Material examined.—None from Galapagos Islands. Hancock collections contain a series from Cocos Island, Costa Rica.

Remarks.—A pelagic species, the Pacific Log Rider is to be expected whenever the warm Niño current carries floating rafts southwestward from the Bay of Panama.

Genus **PERCNON** Gistel, 1848

Percnon gibbesi (Milne Edwards)

Plate 86, Figs. 5, 6

Acanthopus gibbesi Milne Edwards, Ann. Sci. Nat., ser. 3, Zool., vol. 20, pp. 180 and 146, 1853.

Percnon gibbesi Rathbun, Bull. 97, U.S. Nat. Mus., p. 337, pl. 105, 1918. Hult, Arkiv. för Zoologi, Band 30A, no. 5, p. 14, 1938. Schmitt, Smithsonian Misc. Col., vol. 98, no. 6, p. 25, 1939.

Type locality.—Antilles.

Type.—In Paris Mus.

Range.—From Cape San Lucas, Lower California, to Chile; Galapagos Islands (Hult); occurs also in the Atlantic.

Diagnosis.—Carapace exceedingly flat and depressed, disclike. Legs long and slender; anterior margins of meri armed with strong spines. Chelae of adult male bulbous but compressed.

Material examined (28 specimens from 9 stations).—

33-33. Black Beach, Charles Island, shore, Jan. 27, 1933, 1 female.

38-33. SE of Cormorant Point, Charles Island, shore, Jan. 29, 1933, 3 males, 5 females (1 ovig.).

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 1 ovig. female.

101-33. Darwin Bay, Tower Island, shore, Feb. 26, 1933, 1 male.

154-34. Reef north of Tagus Hill, Albemarle Island, reef, Jan. 15, 1934, 2 females.

313-35. Black Beach, Charles Island, shore, Dec. 6, 1934, 1 female.

359-35. Osborn Island in Gardner Bay, Hood Island, shore, Dec. 19, 1934, 2 males, 3 females.

784-38. Darwin Bay, Tower Island, shore, Jan. 17, 1938, 4 males, 2 females (1 photographed).

789-38. South Seymour Island, shore, Jan. 19, 1938, 2 males, 1 young, fragment.

Measurements.—Largest specimen, female: length 32.5 mm, width 34.3 mm; largest male: length 30.0 mm, width 27.7 mm, cheliped 32.0 mm, chela 14.0 mm, height of palm 9.0 mm, dactyl 7.4 mm. These specimens are of exceptional size.

Color in life.—Carapace and merus of ambulatory legs brown above. A fine white line bisecting carapace into right and left halves. Carpus, propodus, and dactylus show increasing amounts of chrome orange, the brown superior band narrowing with each article. Eyestalks and chelae orange, though paler than legs. (Garth)

Habitat.—Under large, turnable rocks in shallow, turbulent water.

Depth.—Shoal water.

Remarks.—The Spray Crab is found in white water of knee to hip depth. Its extreme flatness and propensity for keeping always on the under side no matter how rapidly the rock is turned make *P. gibbesi* the most difficult to capture of all the Galapagos Grapsidae. Undoubtedly, many more specimens are present than are seen.

P. gibbesi was first taken in the Galapagos Islands by *Velero III* collectors.

A key to the genus *Percnon* is given by Schmitt (1939, p. 23).

Family *OCYPODIDAE*

Subfamily OCYPODINAE

Genus OCYPODE Fabricius, 1798

Ocypode gaudichaudii Milne Edwards and Lucas

Plate 87, Fig. 7

Ocypoda gaudichaudii Milne Edwards and Lucas, d'Orbigny's Voy. dans l'Amer. Merid., vol. 6, Crust., p. 26, 1843; vol. 9, atlas, pl. 11, figs. 4-4b, 1847.

Ocypode gaudichaudii Rathbun, Proc. U.S. Nat. Mus., vol. 21, p. 603, 1898; Bull. 97, U.S. Nat. Mus., p. 373, pl. 129, fig. 1; pl. 130, fig. 1, 1918; *not* Zoologica, vol. 5, no. 14, p. 155, pl. 7, figs. 1-3. Boone, Zoologica, vol. 8, no. 4, p. 267, fig. 96A, 1927 (*not* fig. 96B). Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 19, 1933. Crane, Zoologica, vol. 25, p. 65, 1940.

Type locality.—Chile.

Type.—In Paris Mus.

Range.—Gulf of Fonseca, Salvador (MCZ), to Chile (MCZ); Galapagos Islands *(Albatross)*.

Diagnosis.—Carapace subcylindrical, granulate. Front narrow, one-seventh or less of carapace width. Eyestalks extending beyond cornea. Fingers truncate.

Material examined (47 specimens from 12 stations).—

10-32. James Bay, James Island, shore, Jan. 9, 1932, 3 males.

13-32. Darwin Bay, Tower Island, shore, Jan. 20, 1932, 1 female.

42-33. Opposite Kicker Rock, Chatham Island, shore, Jan. 31, 1933, 6 males (1 photographed), 5 females.

58-33. Cormorant Bay, Charles Island, shore, Feb. 6, 1933, 1 male.

71-33. James Bay, James Island, shore, Feb. 12, 1933, 5 males, 2 females.

82-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 1 male.

85-33. North Seymour Island, shore, Feb. 18, 1933, 1 female.

88-33. South Seymour Island, shore, Feb. 19, 1933, 11 males, 2 females.

175a-34. South Seymour Island, shore, Jan. 22, 1934, 2 females.

332-35. Two miles south of Tagus Cove, Albemarle Island, shore, Dec. 10, 1934, 1 male.

333-35. James Bay, James Island, shore, Dec. 11, 1934, 1 male.

789-38. South Seymour Island, shore, Jan. 19, 1938, 4 males, 1 female.

Measurements.—Largest specimen, male: length 35 mm, width 46 mm, cheliped (rigid) coxa to elbow 30 mm, elbow to tip of dactyl 30 mm, chela 30 mm, dactyl 17.4 mm.

Color in life.—General appearance light coral pink, slightly darker on posterior regions and ambulatory legs. Merus of cheliped light coral red, carpus coral pink, manus pinkish with yellowish crest. Eyestalks bright coral red, eye pale lilac, almost white, with longitudinal dark brown cornea ending in a coral pink spine. Dactyls with pale yellowish tinge. (Petersen)

Habitat.—In burrows on sandy beaches.

Depth.—Shore.

Remarks.—The Ghost Crab or Cart Driver, El Carretero, as he is called in Latin America, is found only on the hard-packed sand beaches which occur much less frequently in the Galapagos Islands than the rocky shoreline. Two striking differences separate *O. gaudichaudii* from the species of the Mexican coast, *O. occidentalis* Stimpson 1860; the eyestalks are prolonged beyond the cornea and the tips of the dactyls are truncate.

Crane (1940, p. 70) presents convincing evidence that the megalops described and figured by Rathbun (1924, p. 155, pl. 7) as (?) *Ocypode gaudichaudii* and repeated by Boone (1927, p. 271, fig. 96B) with photographic illustration and without the question mark should be referred instead to the genus *Plagusia* because of its grapsid, rather than ocypodid, characters.

Genus **UCA** Leach, 1814

KEY TO THE GALAPAGOS SPECIES OF THE GENUS *Uca*

A¹ Front less than one-third width of carapace. No granular ridge on superior margin of palm. Size small . . *U. helleri*

A² Front about one-third width of carapace. A granular ridge on superior margin of palm. Size large . . *U. galapagensis*

Uca galapagensis Rathbun

Plate 87, Figs. 3, 4

Uca galapagensis Rathbun, Proc. Washington Acad. Sci., vol. 4, p. 275, pl. 12, figs. 1 and 2, 1902; Bull. 97, U.S. Nat. Mus., p. 403, pl. 142, text fig. 167a and b, 1918; Zoologica, vol. 5, no. 14, p. 155, 1924. Boone, Zoologica, vol. 8, no. 4, p. 271, fig. 97, upper figure, 1927; *not* fig. 97, lower figure, which is *Uca panamensis,* (Stimpson). Sivertsen, Med. fra det Zool. Mus., Oslo, nr. 38, p. 20, 1933. Hult, Arkiv för Zoologi, Band 30A, no. 5, p. 14, 1938.

Uca macrodactyla Crane, Zoologica, vol. 26, no. 19, p. 178, 1941; part: the Galapagos specimen.

Type locality.—Indefatigable Island.

Type.—USNM No. 22319.

Range.—Known only from the Galapagos Islands, Indefatigable, James, and Seymour.

Diagnosis.—Superior margin of palm with a granular ridge. Orbital margins moderately oblique. Front about one-third width of carapace. Size large.

Material examined (173 specimens from 6 stations).—

8-32. E. of Post Office Bay, Charles Island, shore, Jan. 3, 1932, 16 males, 3 females, fragment.

39-33. Flamingo Lagoon, Charles Island, shore, Jan. 29, 1933, 39 males, 12 females, (including photographed pair).

49-33. Academy Bay, Indefatigable Island, shore, Feb. 3, 1933, 29 males, 19 females.

82a-33. Conway Bay, Indefatigable Island, shore, Feb. 17, 1933, 2 males.

88-33. South Seymour Island, shore, Feb. 19, 1933, 38 males, 15 females.

314-35. Academy Bay, Indefatigable Island, shore, Dec. 7, 1934, 5 males, 2 females.

Measurements.—Largest specimen, male: length 14.6 mm, width 22.1 mm, cheliped 60 mm, chela 38.6 mm, dactyl 28 mm; female: length 13.5 mm, width 19.6 mm.

Habitat.—In mud flats of brackish lagoons.

Depth.—Shore.

Remarks.—Brackish water and claylike soil are sought by the fiddler crabs in general. The Galapagos species, *U. galapagensis* Rathbun, thrives equally well in a pinkish muck at Charles Island or a red-orange gumbo at South Seymour Island. The Academy Bay specimens, living in gray mud, attain the greatest size.

The Eden Island specimen figured by Boone (1927, fig. 97, upper figure) has been examined through the kindness of Miss Jocelyn Crane of the New York Zoological Society and found to be in close agreement with the large series of *galapagensis* taken by *Velero III* collectors at Academy Bay, on the opposite side of Indefatigable Island. In view of this fact and the fact that Miss Crane considers the specimen to be *atypical* as *U. macrodactyla,* the specimen is here referred once more to the established Galapagos species until others unquestionably of the latter species put in an appearance.

Uca helleri Rathbun

Plate 87, Figs. 5, 6

Uca helleri Rathbun, Proc. Washington Acad. Sci., vol. 4, p. 277, pl. 12, figs. 3 and 4, 1902; Bull. 97, U.S. Nat. Mus., p. 415, pl. 151, text fig. 170a and b, 1918. Boone, Zoologica, vol. 8, no. 4, p. 278, fig. 98, 1927. Crane, Zoologica, vol. 26, no. 19, p. 198, text figs. 4R, 5, 1941.

Type locality.— Mangrove Point, Narborough Island, Galapagos Islands.

Type.—USNM. No. 24829.

Range.—Albemarle, Narborough, and Tower Islands, Galapagos Islands.

Diagnosis.—Superior margin of palm without granular ridge. Orbital margins strongly oblique. Front less than one-third width of carapace. Size small.

Material examined (225 specimens from 5 stations).—

52-33. Academy Bay, Indefatigable Island, shore, Feb. 4, 1933, 14 males, 11 females (2 ovig.).

62-33. Black Bight, Albemarle Island, shore, Feb. 8, 1933, 63 males, 38 females (4 ovig.), (including photographed pair).

93-33. Darwin Bay, Tower Island, shore, Feb. 22, 1933, 50 males, 43 females (3 ovig.).

98-33. Darwin Bay, Tower Island, shore, Feb. 25, 1933, 4 males, 1 female.

153-34. Mangrove Point, Narborough Island, shore, Jan. 14, 1934, 1 male.

Measurements.—Large specimen, male: length 8.2 mm, width 12.3 mm, cheliped 32 mm, chela 21.4 mm, dactyl 15.5 mm; female: length 8.0 mm, width 11.0 mm.

Habitat.—Sandy mud beneath mangrove roots.

Depth.—Shore.

Remarks.—*U. helleri* and *U. galapagensis* Rathbun are found in separate colonies and on separate islands except at Academy Bay, where they occur in adjacent coves. The Academy Bay record is an extension of range for *U. helleri.*

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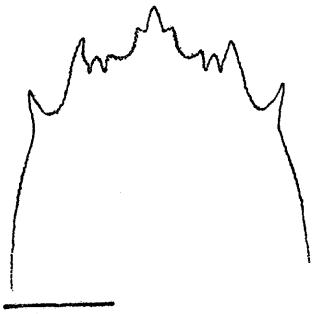
EXPLANATION OF PLATES

PLATE 49

Raninoides ecuadorensis Rathbun (p. 344)
Male paratype

Fig. 1 Dorsal view
Fig. 2 Outline of front
Fig. 3 Outline of wrist and hand
Fig. 4 Fourth walking leg
Fig. 5 First walking leg



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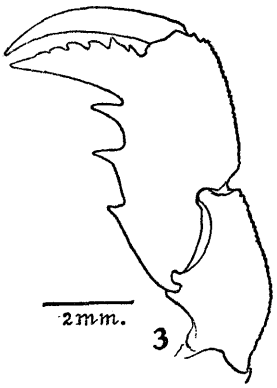

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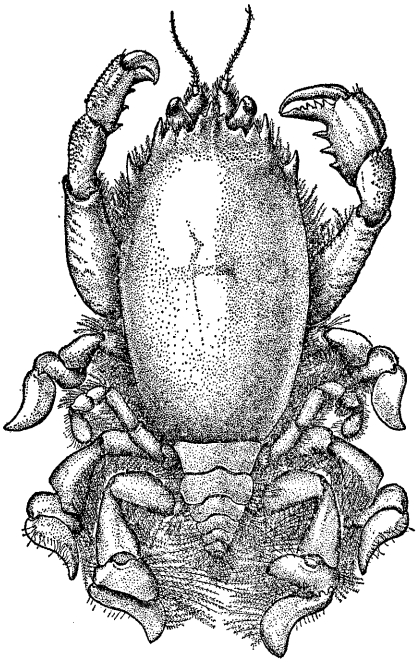

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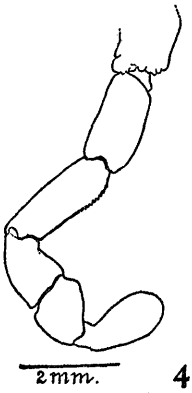

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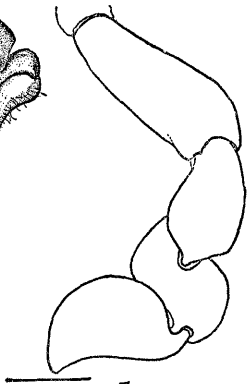

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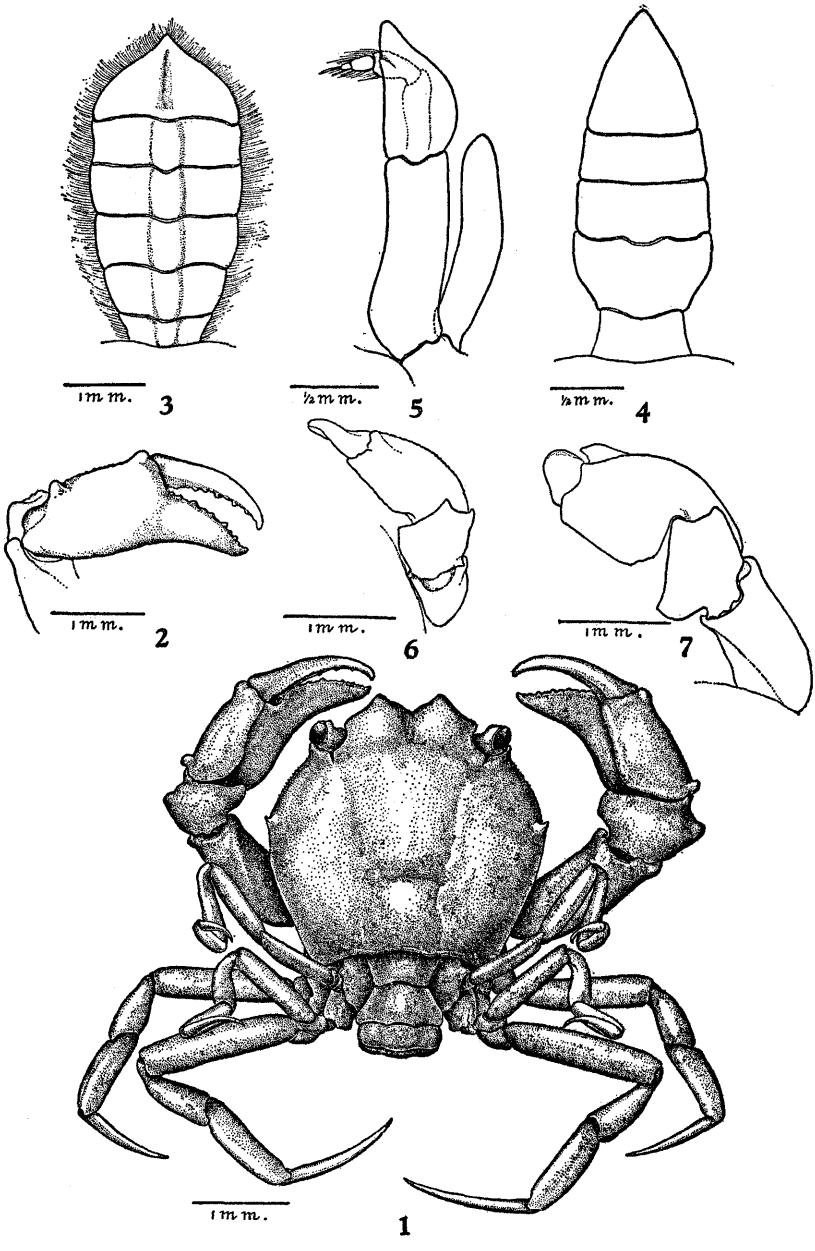
PLATE 50

Clythrocerus laminatus Rathbun (p. 353)

Fig. 1 Dorsal view, male
Fig. 2 Right chela, male
Fig. 3 Abdomen, female
Fig. 4 Abdomen, male
Fig. 5 Left outer maxilliped
Fig. 6 Right cheliped, female
Fig. 7 Right cheliped, male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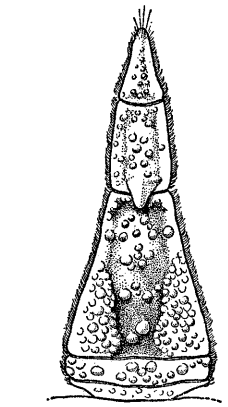
7

PLATE 51

Ebalia hancocki Rathbun (p. 354)

Fig. 1 Dorsal view, male
Fig. 2 Abdomen, male
Fig. 3 Abdomen, female
Fig. 4 Right chela
Fig. 5 Frontal view of carapace
Fig. 6 Posterior view of carapace



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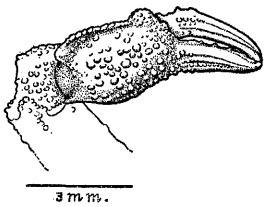

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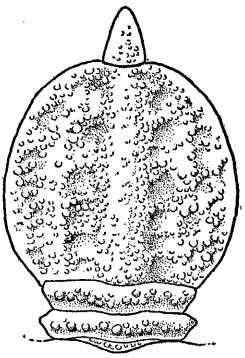

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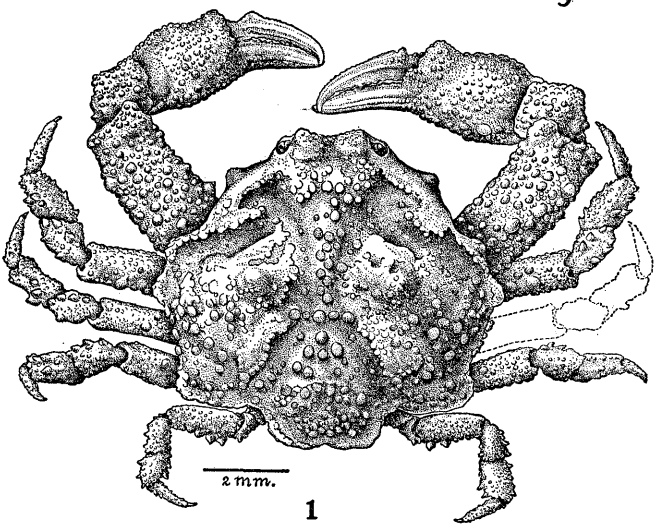

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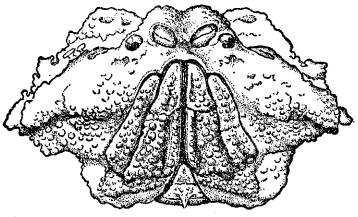

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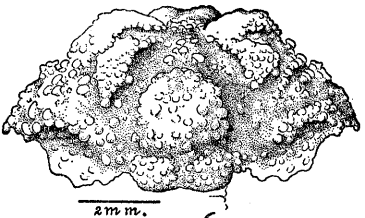

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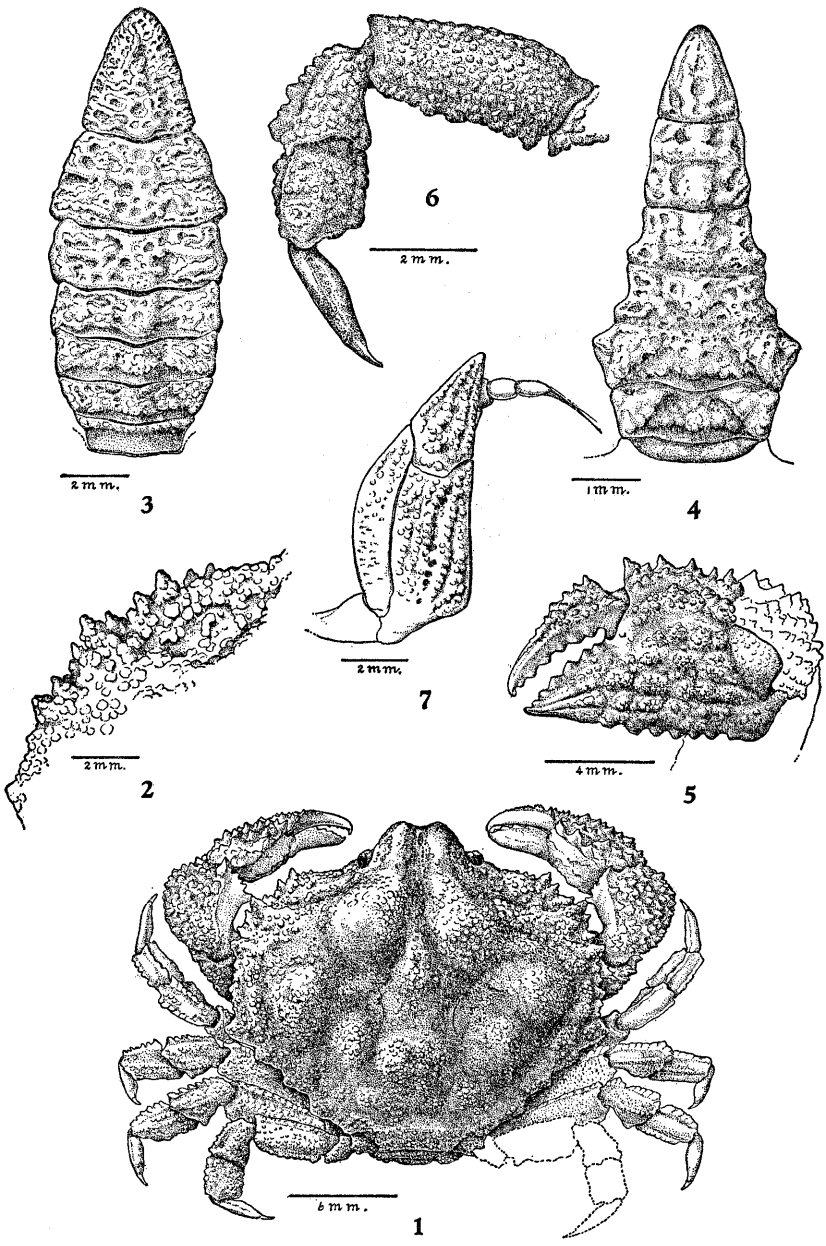
6

PLATE 52

Osachila galapagensis Rathbun (p. 364)
Female paratype

Fig. 1 Dorsal view
Fig. 2 Detail of anterolateral margin
Fig. 3 Abdomen
Fig. 4 Abdomen, male
Fig. 5 Left chela
Fig. 6 Left fourth ambulatory leg
Fig. 7 Right outer maxilliped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3
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2 mm.
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6 mm.
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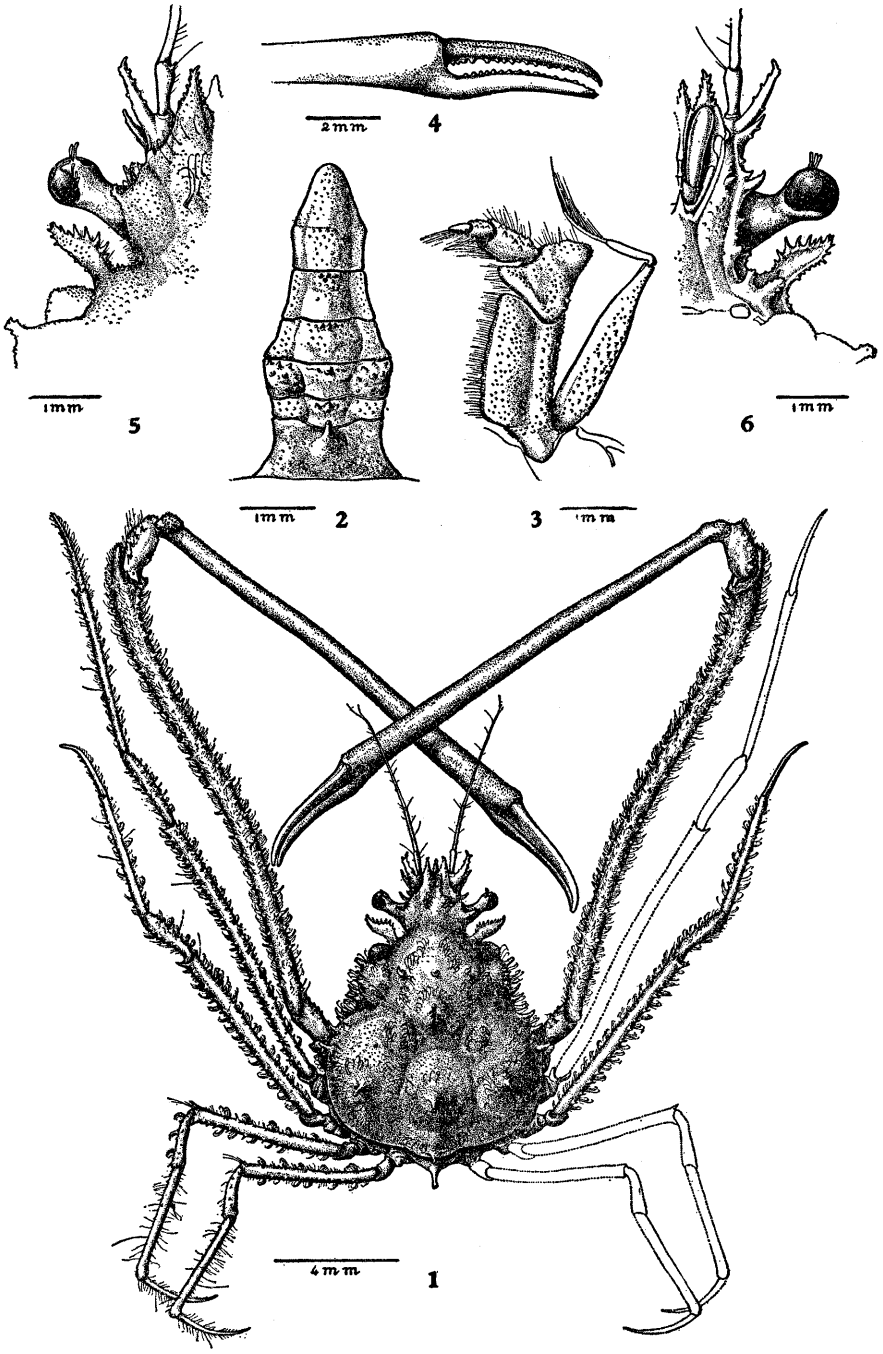
PLATE 53

Euprognatha granulata Faxon (p. 372)
Male

Fig. 1 Dorsal view
Fig. 2 Abdomen
Fig. 3 Left outer maxilliped
Fig. 4 Right chela
Fig. 5 Dorsal view of orbit
Fig. 6 Ventral view of orbit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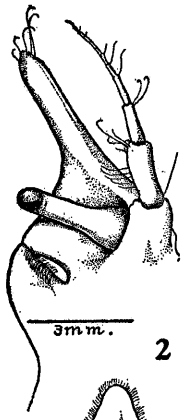
4 mm
1

PLATE 54

Tyche lamellifrons Bell (p. 406)

Fig. 1 Dorsal view, female
Fig. 2 Ventral view of orbit
Fig. 3 Left chela, male
Fig. 4 Abdomen, male
Fig. 5 Abdomen, female
Fig. 6 Right outer maxilliped



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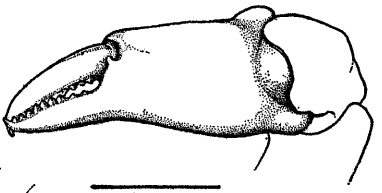

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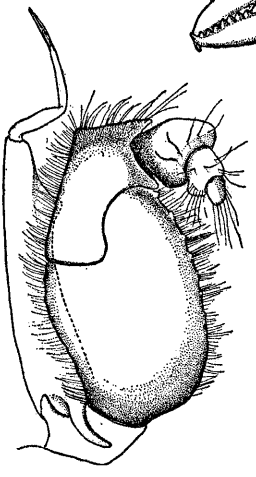

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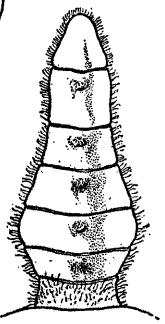

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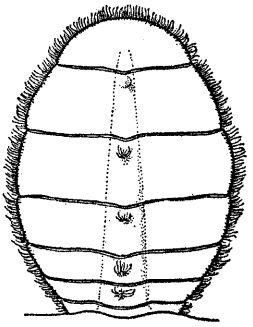

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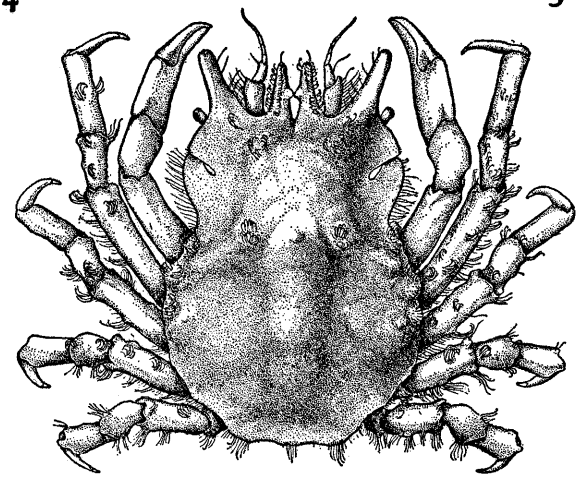

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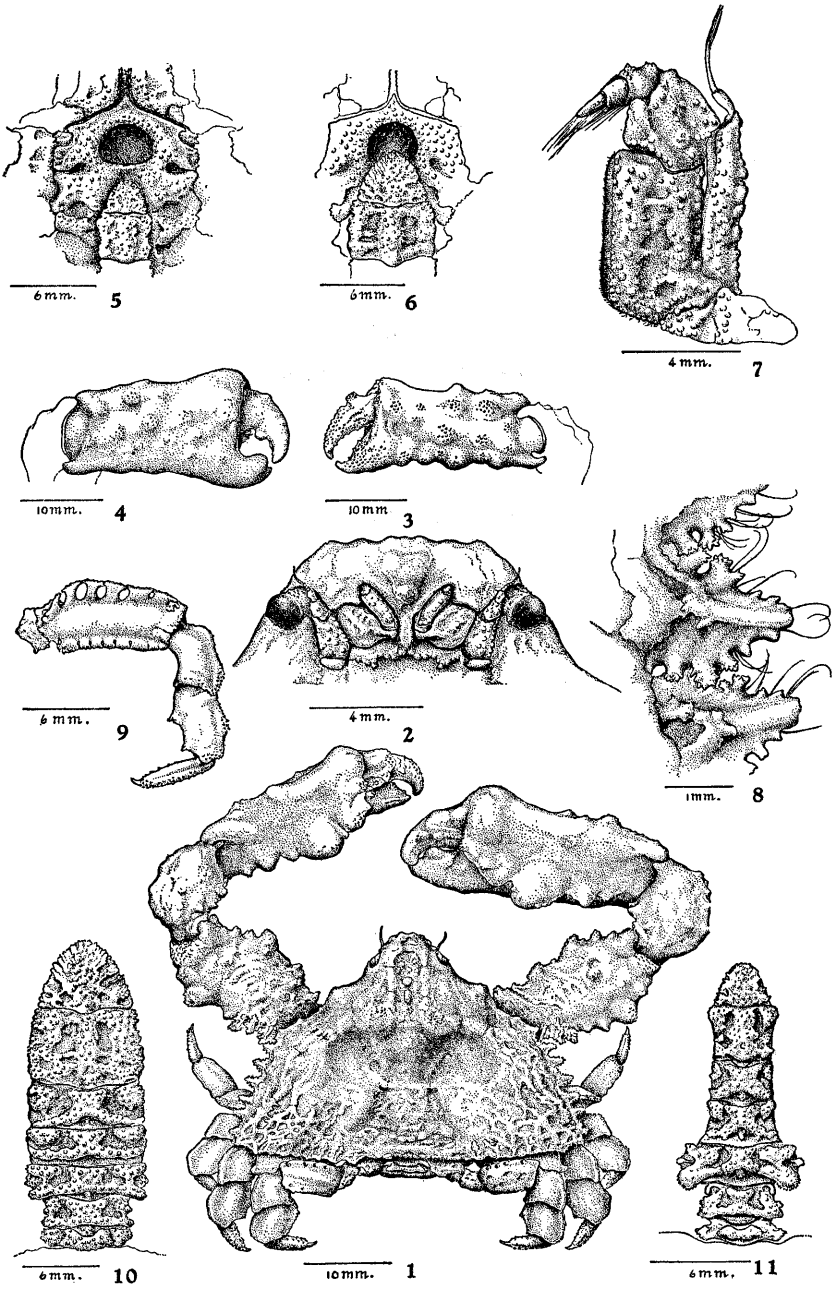
PLATE 55

Daldorfia garthi Glassell (p. 412)

Fig. 1 Dorsal view
Fig. 2 Frontal view
Fig. 3 Minor chela
Fig. 4 Major chela
Fig. 5 Sternal pit, showing position of male abdomen
Fig. 6 Sternal pit, showing position of female abdomen
Fig. 7 Left outer maxilliped
Fig. 8 Detail of lateral teeth
Fig. 9 Right third ambulatory leg
Fig. 10 Female abdomen
Fig. 11 Male abdomen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6mm. 10
10mm. 1
6mm. 11

PLATE 56

Actaea crosslandi (Finnegan) (p. 436)
Male

Fig. 1 Dorsal view
Fig. 2 Right chela
Fig. 3 Abdomen
Fig. 4 Left outer maxilliped

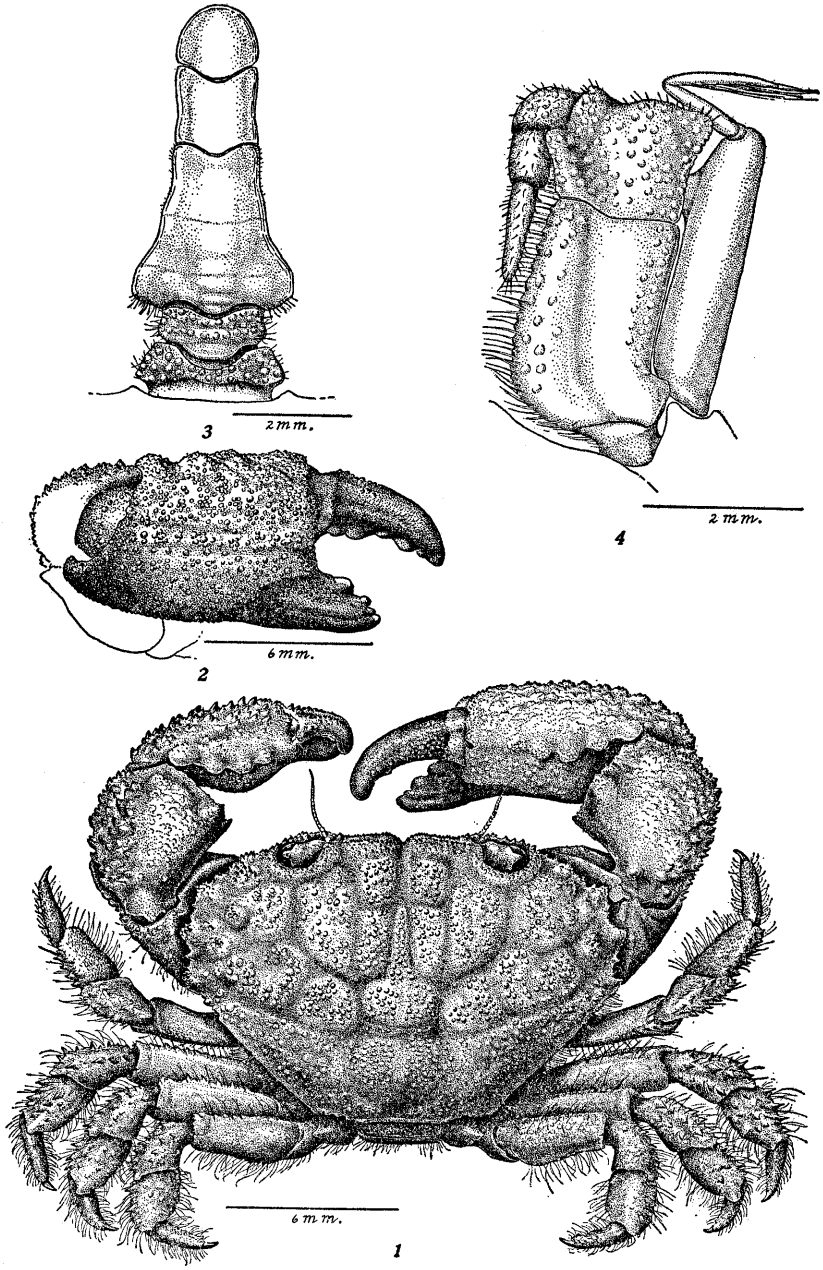
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PLATE 57

Micropanope fraseri, new species (p. 462)
Male holotype

Fig. 1 Dorsal view
Fig. 2 Frontal view of chelae
Fig. 3 Abdomen
Fig. 4 Left outer maxilliped

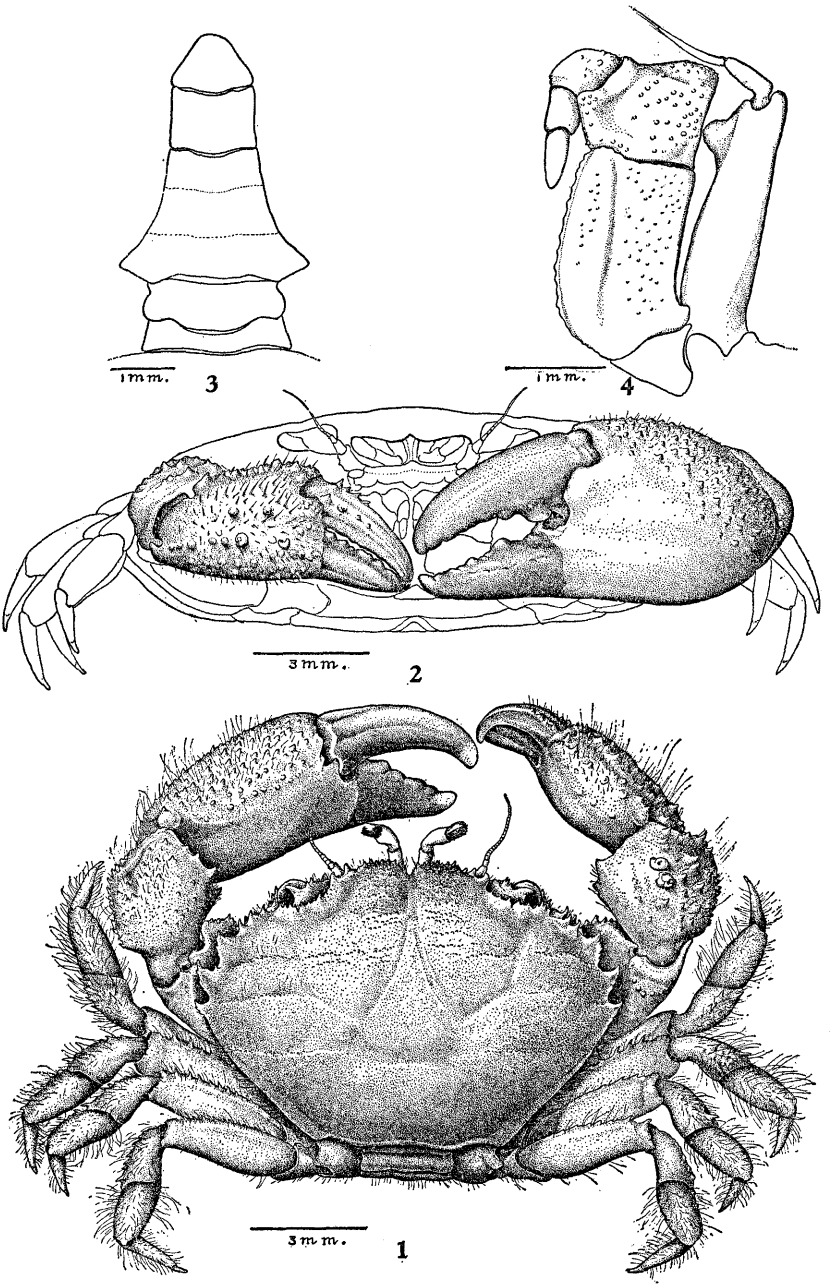
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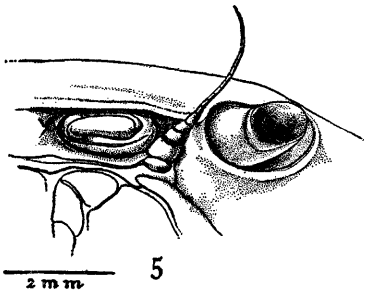
PLATE 58

Ectaesthesius bifrons Rathbun (p. 466)
Male

Fig. 1 Dorsal view
Fig. 2 Right chela
Fig. 3 Left chela
Fig. 4 Left outer maxilliped
Fig. 5 Antennal region
Fig. 6 Abdomen, female
Fig. 7 Abdomen, male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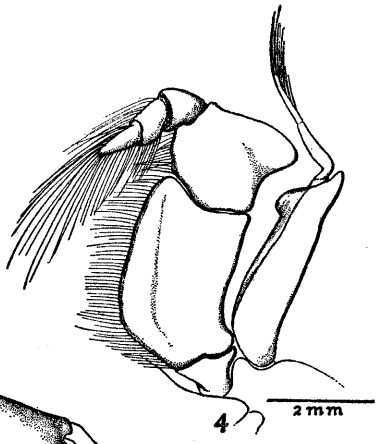
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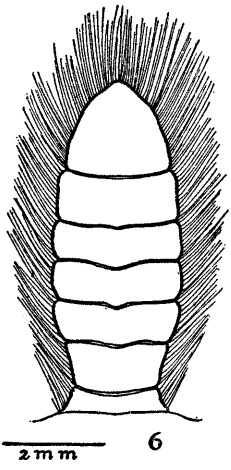
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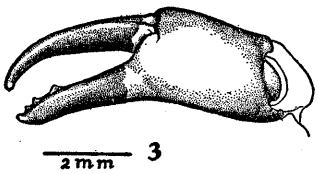
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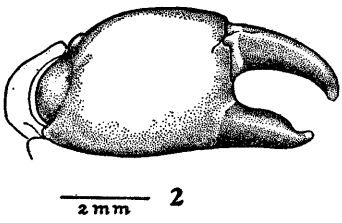
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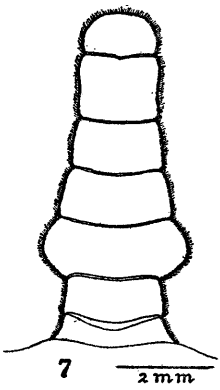
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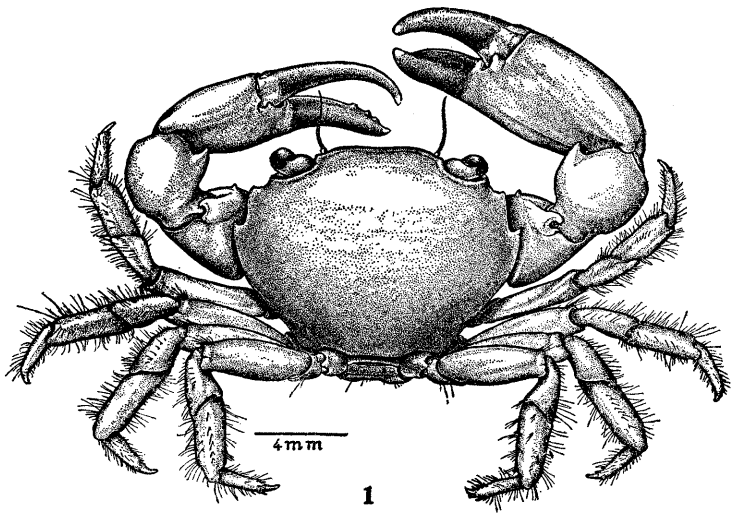
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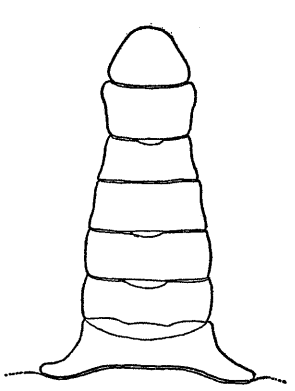
PLATE 59

Pilumnus xantusii Stimpson (p. 471)

Fig. 1 Dorsal view, female
Fig. 2 Abdomen, male
Fig. 3 Left outer maxilliped
Fig. 4 Right chela, male
Fig. 5 Right chela, female



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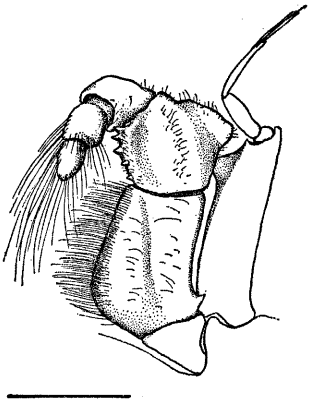

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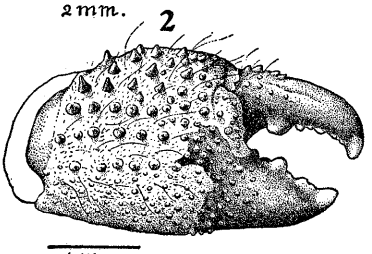

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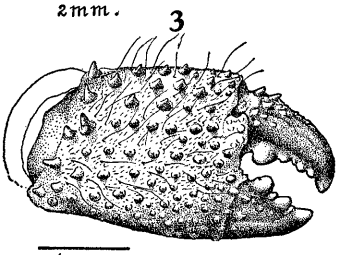

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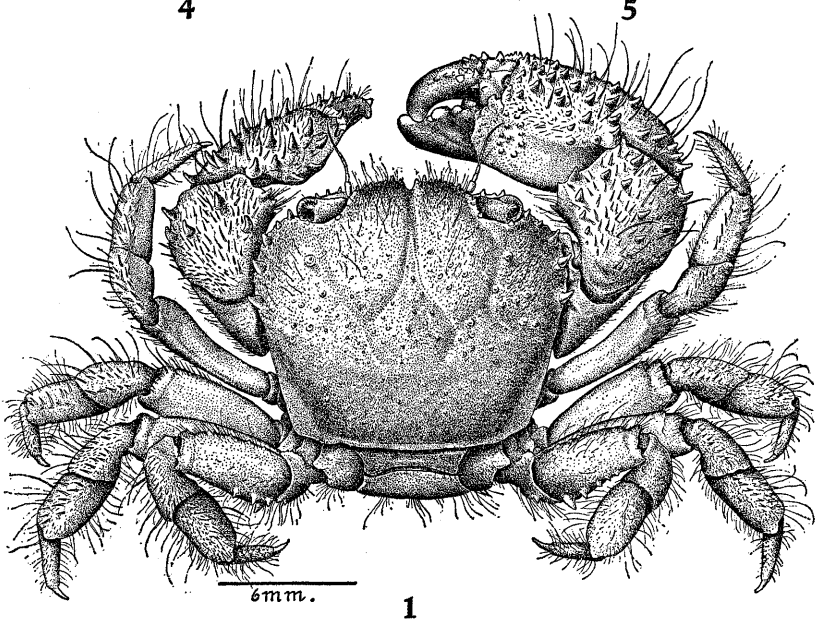

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PLATE 60

Fig. 1 *Ranilia fornicata* (Faxon), male, dorsal view (p. 345)
Fig. 2 *Ranilia fornicata* (Faxon), male, ventral view
Fig. 3 *Ethusa lata* Rathbun, male, dorsal view (p. 352)
Fig. 4 *Uhlias ellipticus* Stimpson, male, dorsal view (p. 357)
Fig. 5 *Uhlias ellipticus* Stimpson, male, ventral view


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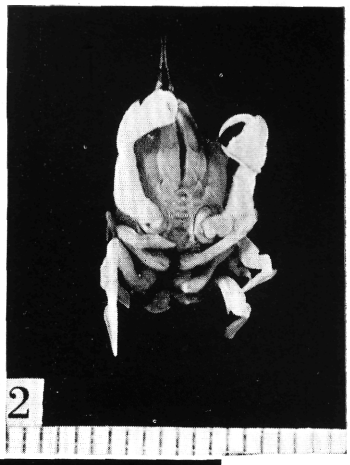
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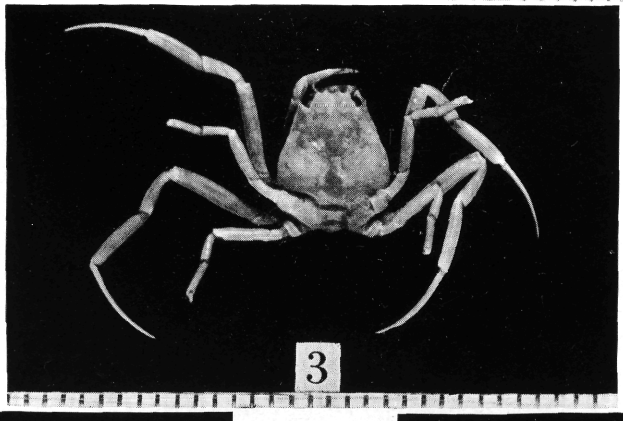
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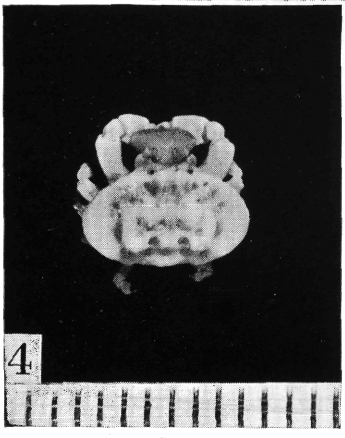
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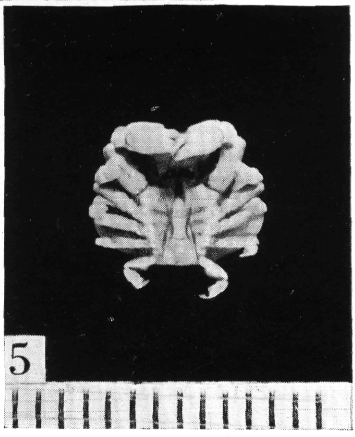
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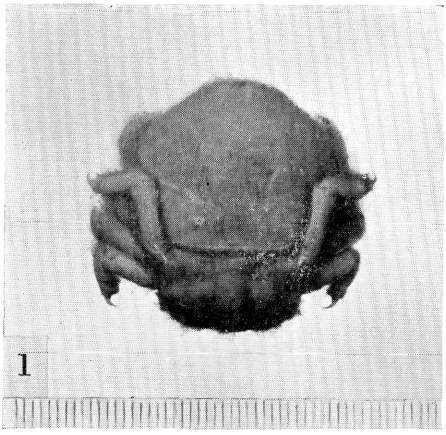
PLATE 61

Fig. 1 *Dromidia larraburei* Rathbun, female, dorsal view (p. 346)
Fig. 2 *Dromidia larraburei* Rathbun, female, ventral view, showing sponge carried for concealment
Fig. 3 *Hypoconcha panamensis* Smith, male, dorsal view (p. 348)
Fig. 4 *Hypoconcha panamensis* Smith, male, ventral view
Fig. 5 *Dynomene ursula* Stimpson, male, dorsal view (p. 349)
Fig. 6 *Dynomene ursula* Stimpson, male, ventral view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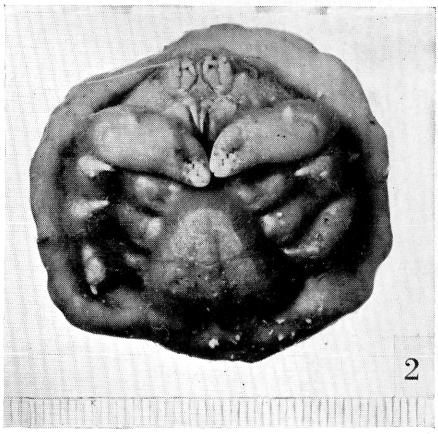
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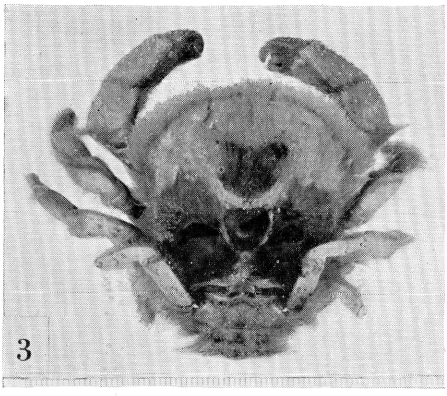
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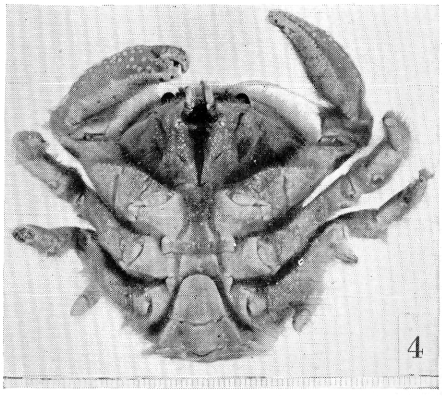
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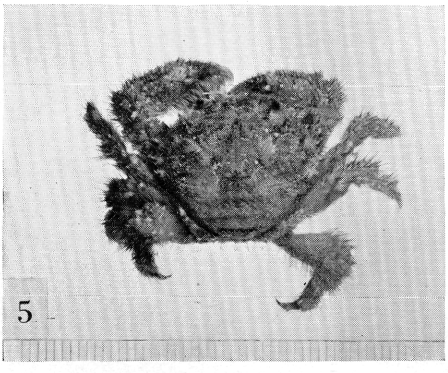
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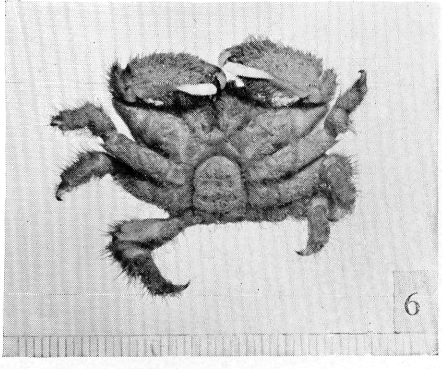
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PLATE 62

Fig. 1 *Lithadia cumingii* Bell, male, dorsal view (p. 356)
Fig. 2 *Randallia agaricias* Rathbun, male, dorsal view (p. 359)
Fig. 3 *Mursia gaudichaudii* (Milne Edwards), male, dorsal view (p. 361)
Fig. 4 *Mursia gaudichaudii* (Milne Edwards), male, ventral view
Fig. 5 *Osachila levis* Rathbun, male, dorsal view (p. 365)
Fig. 6 *Calappa convexa* Saussure, young, dorsal view (p. 360)
Fig. 7 *Cycloës bairdii* Stimpson, male, dorsal view (p. 362)
Fig. 8 *Cycloës bairdii* Stimpson, male, ventral view

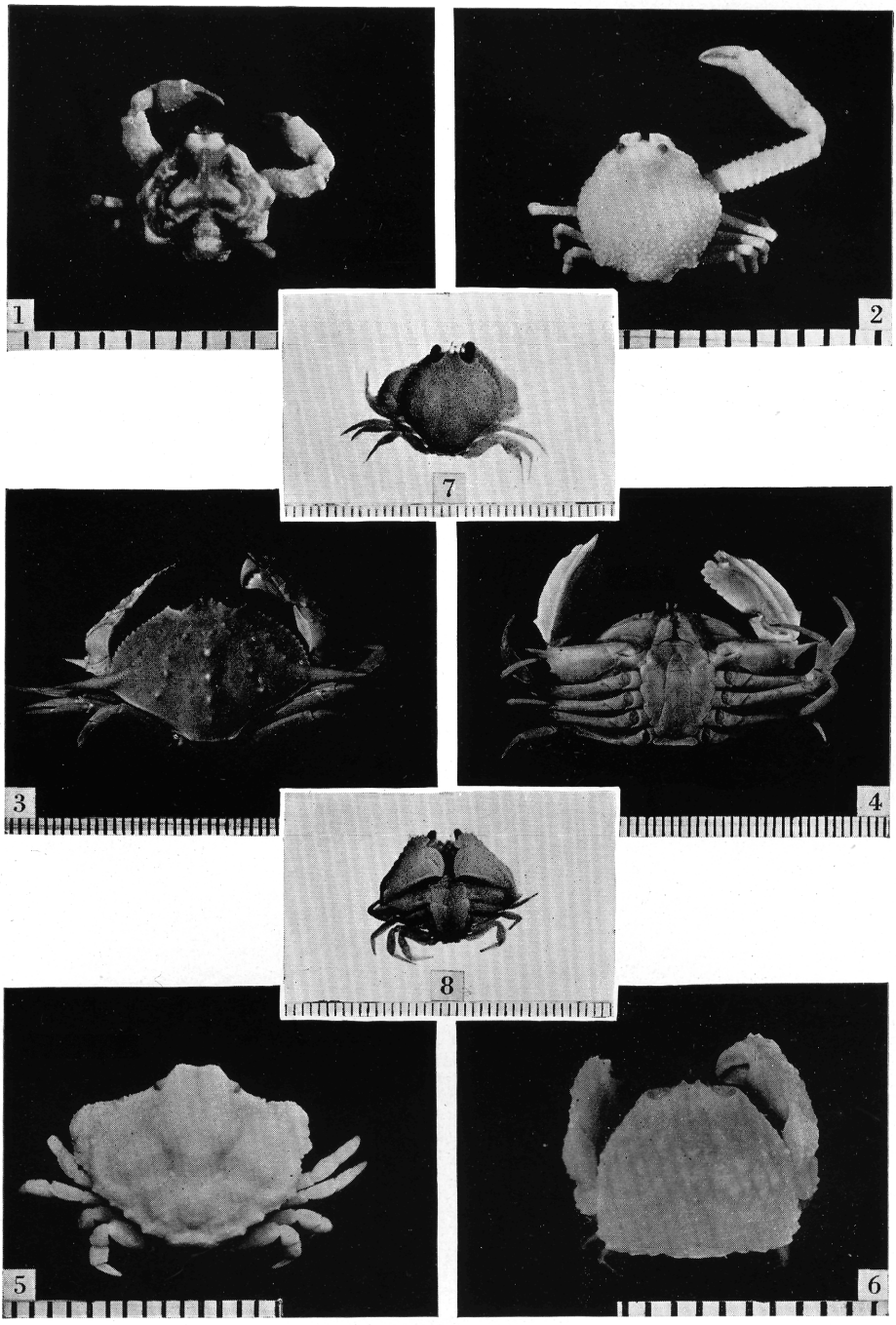
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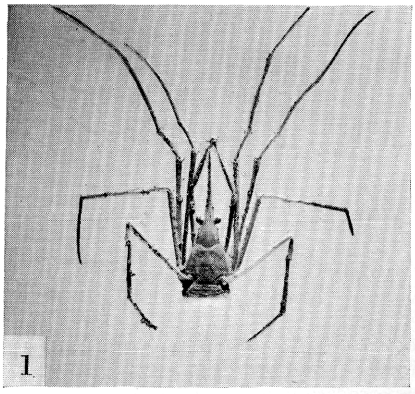
PLATE 63

Fig. 1 *Stenorynchus debilis* (Smith), female, dorsal view (p. 366)
Fig. 2 *Sphenocarcinus agassizi* Rathbun, female, dorsal view (p. 379)
Fig. 3 *Herbstia pyriformis* (Bell), male, dorsal view (p. 383)
Fig. 4 *Acanthonyx petiverii* Milne Edwards, male, dorsal view (p. 376)
Fig. 5 *Microphrys aculeatus* (Bell), female, dorsal view (p. 402)
Fig. 6 *Microphrys triangulatus* (Lockington), male, dorsal view (p. 403)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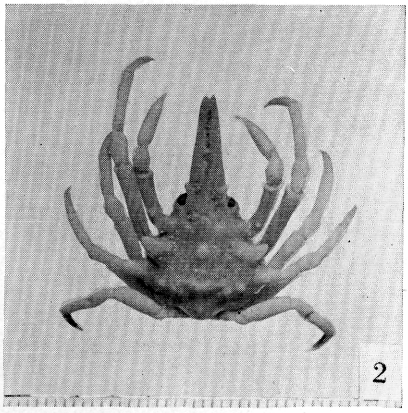
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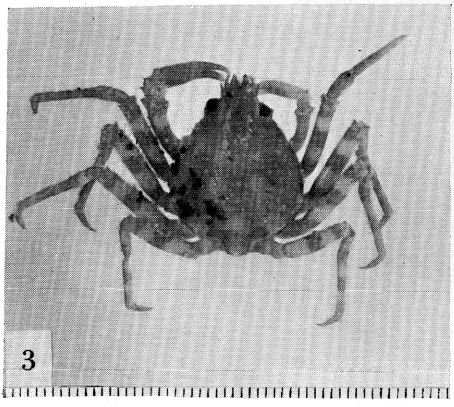
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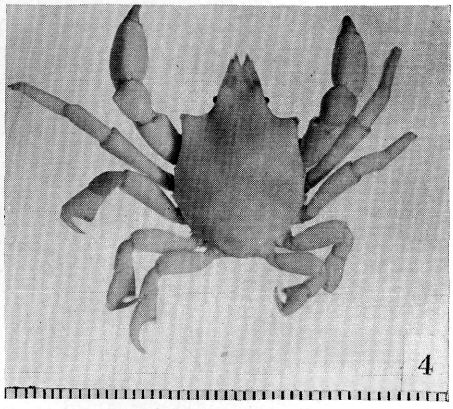
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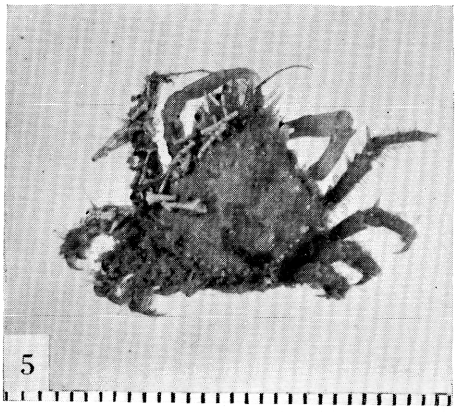
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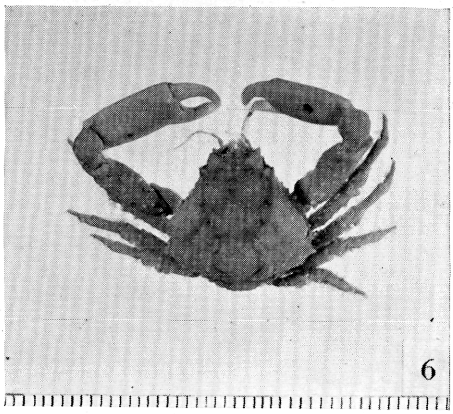
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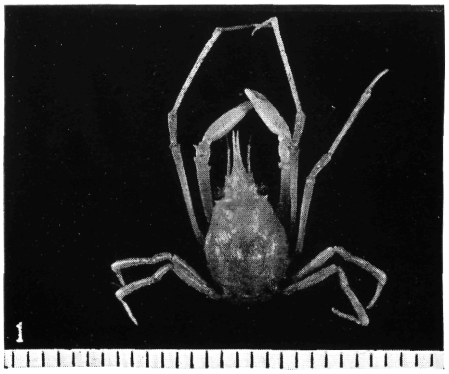
PLATE 64

Fig. 1 *Anamalothir hoodensis* Garth, female holotype, dorsal view (p. 368)
Fig. 2 *Anomalothir hoodensis* Garth, female holotype, ventral view
Fig. 3 *Podochela schmitti* Garth, male holotype, dorsal view (p. 371)
Fig. 4 *Podochela schmitti* Garth, male holotype, ventral view
Fig. 5 *Podochela margaritaria* Rathbun, female, dorsal view (p. 369)
Fig. 6 *Podochela margaritaria* Rathbun, female, ventral view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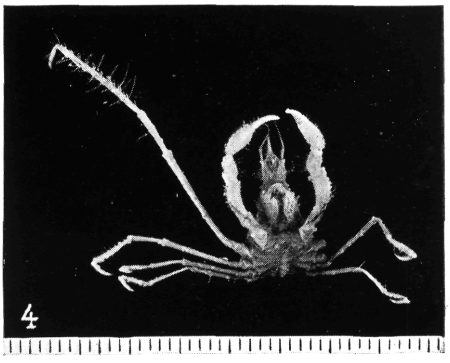
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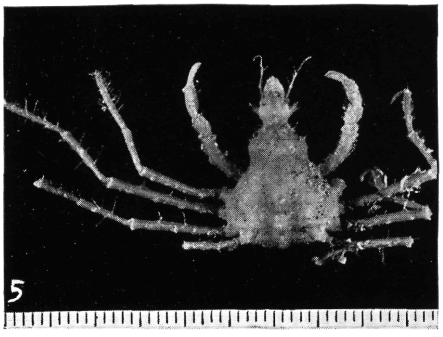
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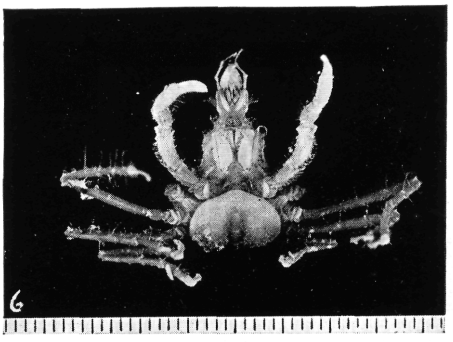
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PLATE 65

Fig. 1 *Herbstia edwardsii* Bell, male, dorsal view (p. 381)
Fig. 2 *Herbstia edwardsii* Bell, male, ventral view
Fig. 3 *Lissa aurivilliusi* Rathbun, female, dorsal view (p. 384)
Fig. 4 *Lissa aurivilliusi* Rathbun, female, ventral view
Fig. 5 *Mithrax (Mithrax) spinipes* (Bell), male, dorsal view (p. 388)
Fig. 6 *Mithrax (Mithrax) spinipes* (Bell), male, ventral view


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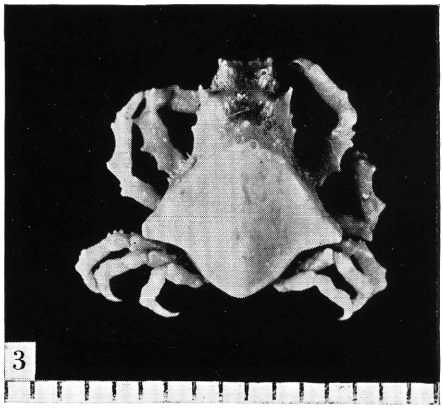
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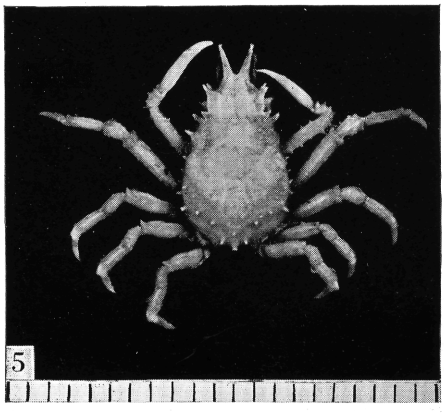
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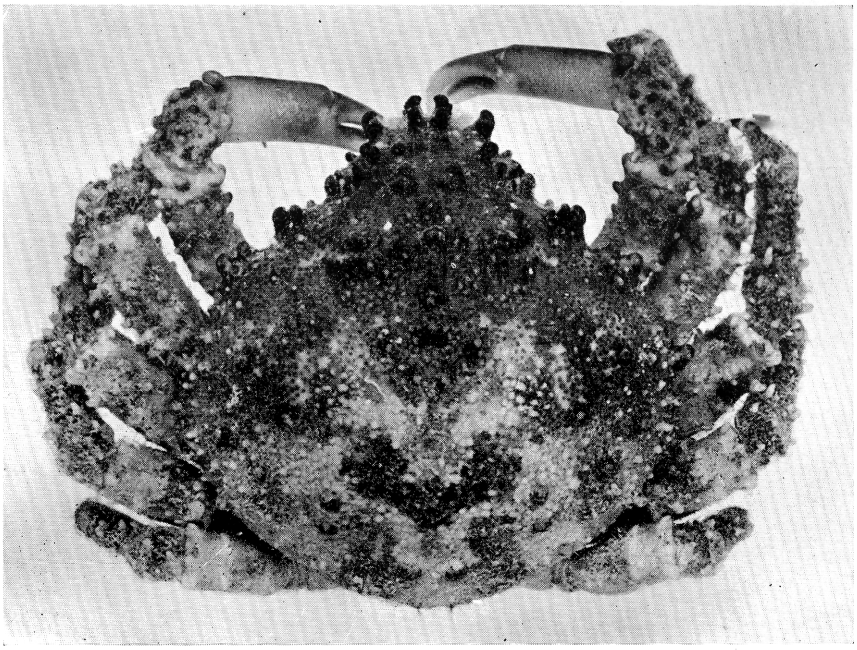
PLATE 66

Mithrax (Mithrax) bellii Gerstaecker (p. 389)
Female

Fig. 1 Dorsal view, x 1.25
Fig. 2 Ventral view, x 1.25



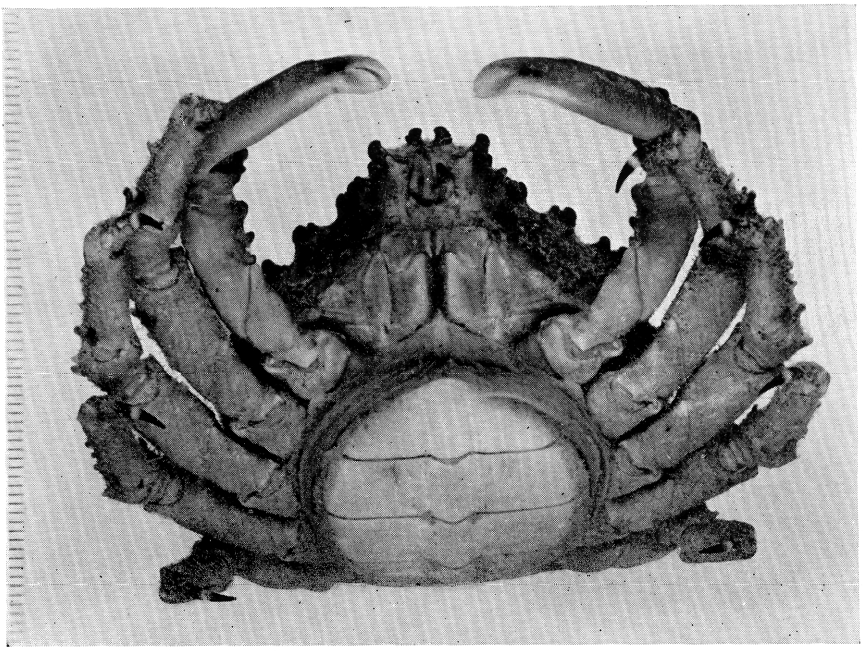
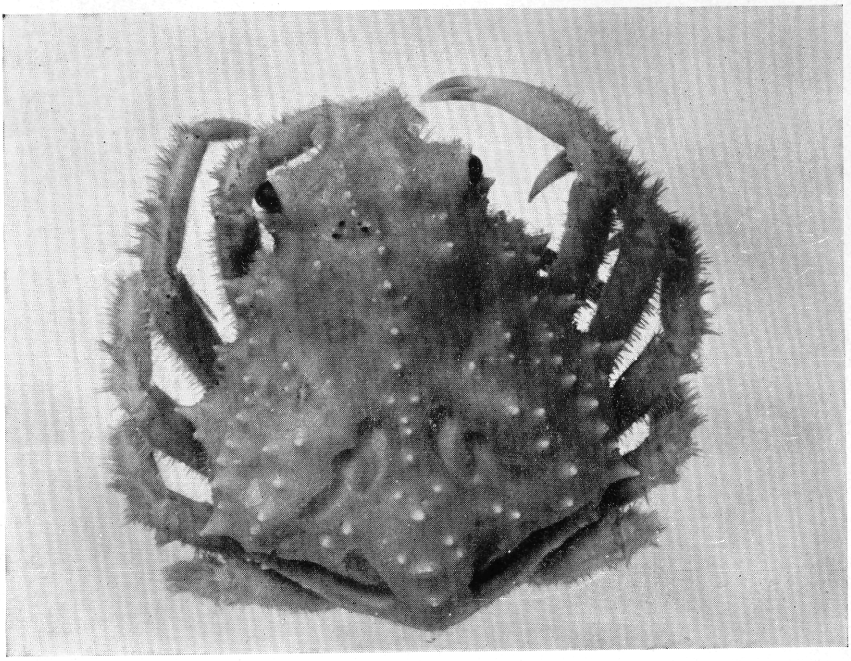


PLATE 67

Stenocionops triangulata (Rathbun) (?) (p. 401)
Male

Fig. 1 Dorsal view, x 1.8
Fig. 2 Ventral view, x 1.8



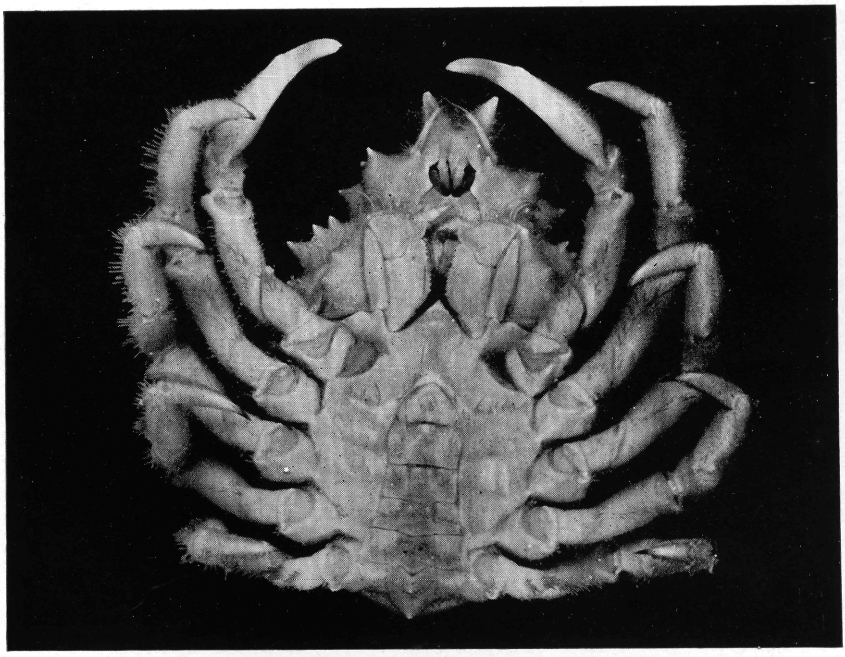
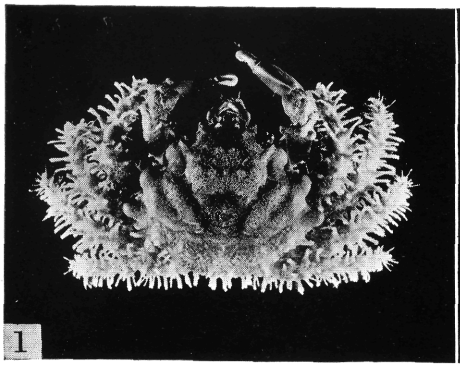


PLATE 68

Fig. 1 *Mithrax (Mithraculus) nodosus* Bell, young, dorsal view (p. 392)
Fig. 2 *Stenocionops triangulata,* (Rathbun), young male, dorsal view (p. 401)
Fig. 3 *Microphrys platysoma* (Stimpson), young female, dorsal view (p. 405)
Fig. 4 *Microphrys platysoma* (Stimpson), young female, ventral view
Fig. 5 *Teleophrys cristulipes* Stimpson, male, dorsal view (p. 396)
Fig. 6 *Teleophrys cristulipes* Stimpson, male, ventral view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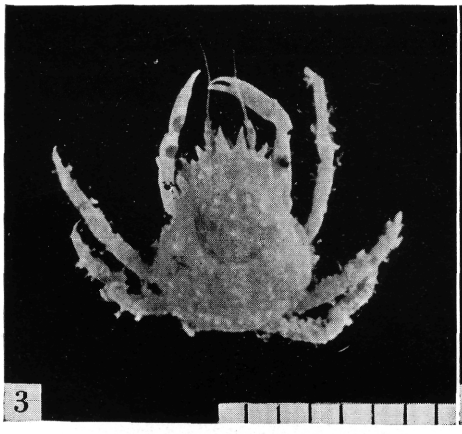
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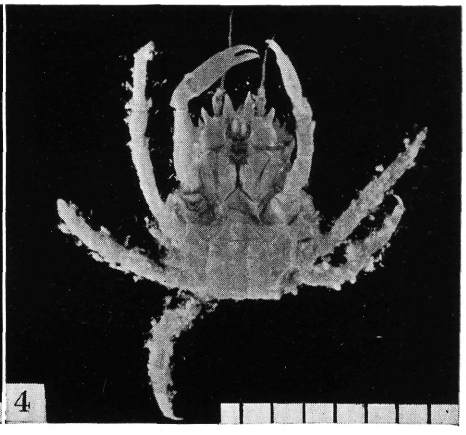
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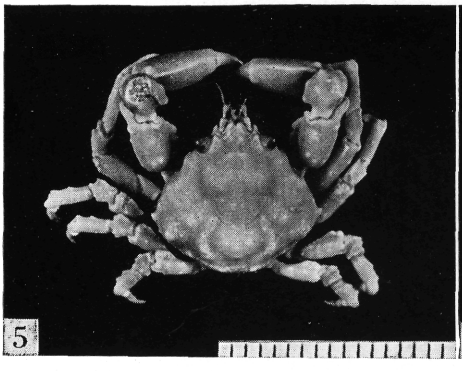
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PLATE 69

Fig. 1 *Parthenope (Pseudolambrus) triangula* (Stimpson), male, dorsal view (p. 410)

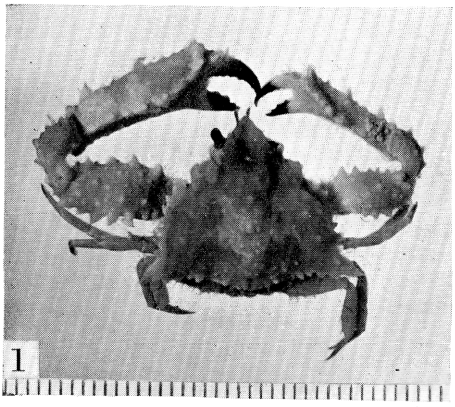
Fig. 2 *Parthenope (Platylambrus) exilipes* (Rathbun), female, dorsal view (p. 409)

Fig. 3 *Solenolambrus arcuatus* Stimpson, male, dorsal view (p. 413)

Fig. 4 *Solenolambrus arcuatus* Stimpson, male, ventral view

Fig. 5 *Mesorhoea bellii* (A. Milne Edwards), male, dorsal view (p. 414)

Fig. 6 *Mesorhoea bellii* (A. Milne Edwards), male, ventral view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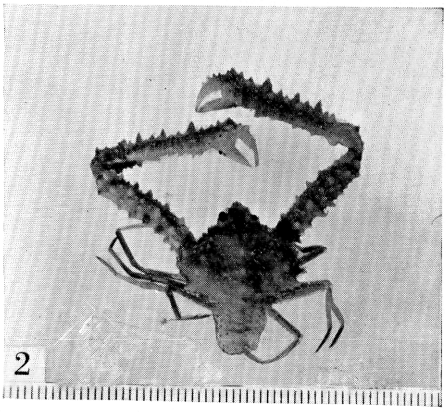
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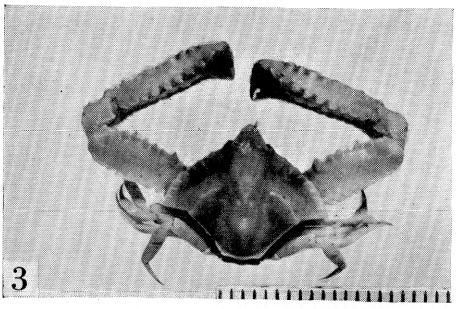
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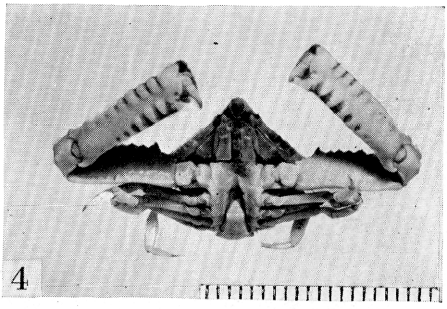
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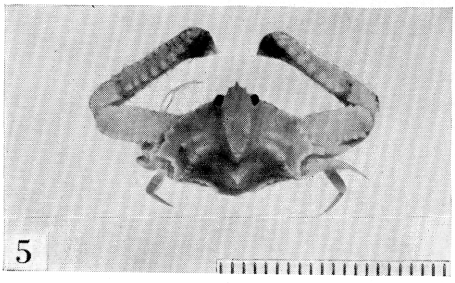
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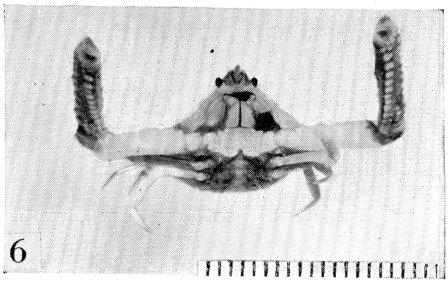
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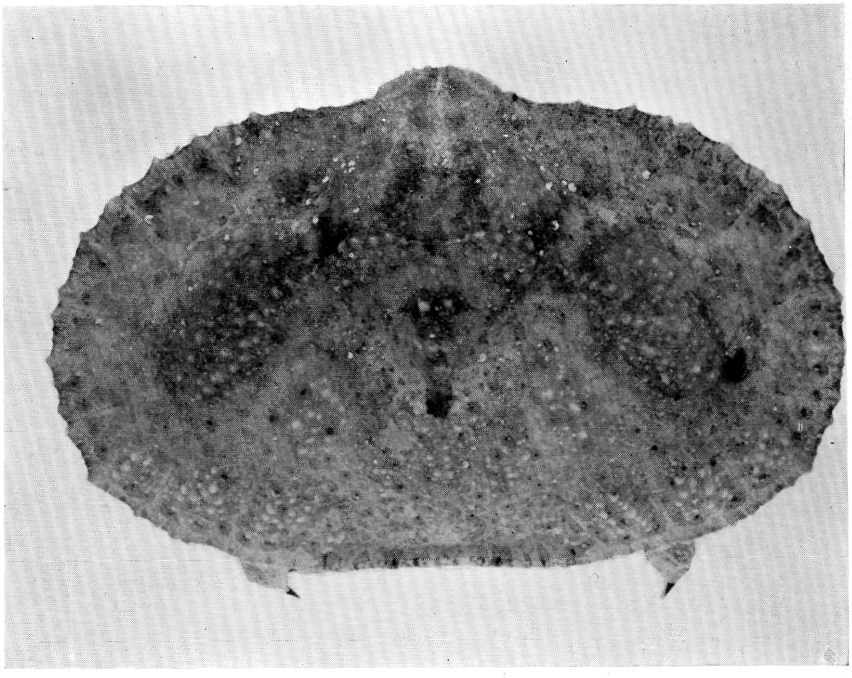
PLATE 70

Aethra scruposa scutata Smith (p. 415)
Female

Fig. 1 Dorsal view, x 1.27
Fig. 2 Ventral view, x 1.27



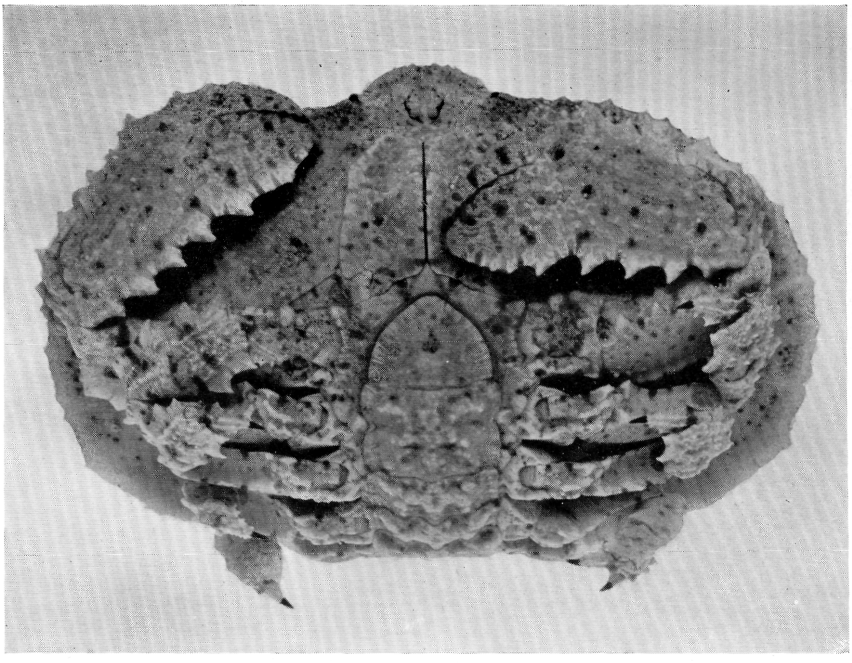


PLATE 71

Fig. 1 *Portunus (Achelous) stanfordi* Rathbun, male, dorsal view (p. 416)

Fig. 2 *Portunus (Achelous) tuberculatus* (Stimpson), female, dorsal view (p. 421)

Fig. 3 *Portunus (Achelous) angustus* Rathbun, ovigerous female, dorsal view (p. 419)

Fig. 4 *Portunus (Achelous) angustus* Rathbun, ovigerous female, ventral view

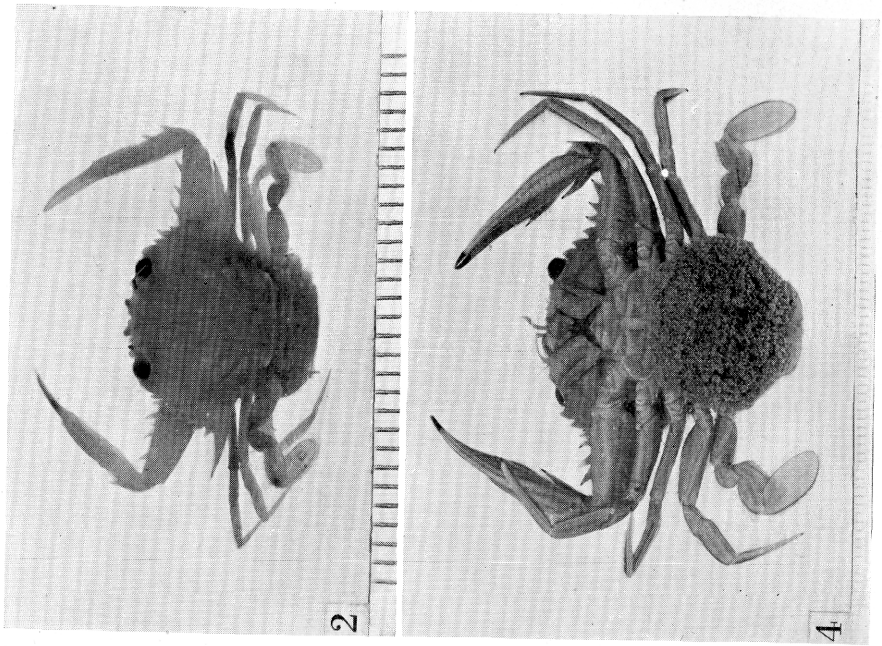

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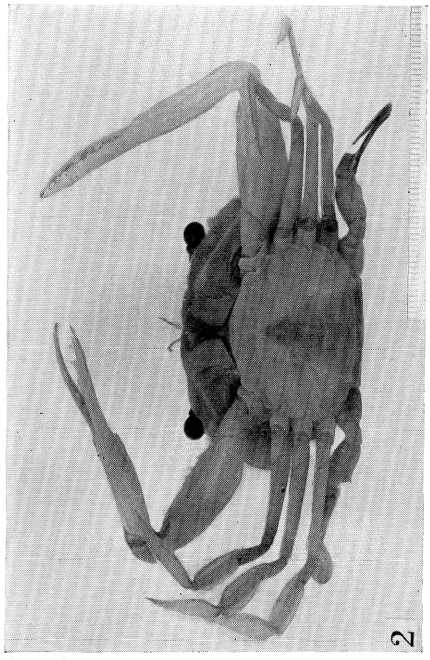
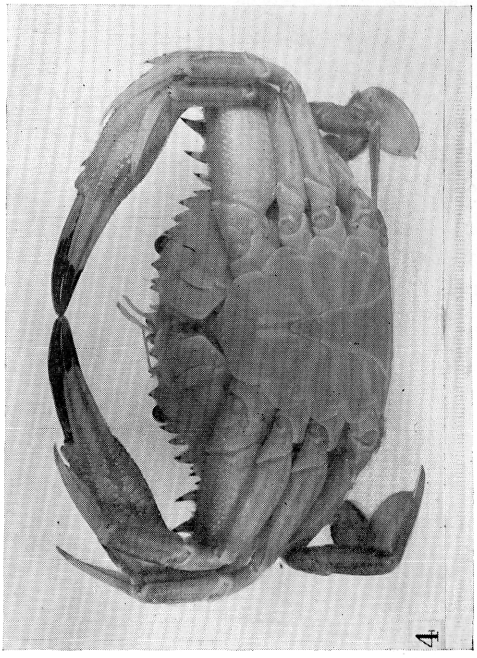
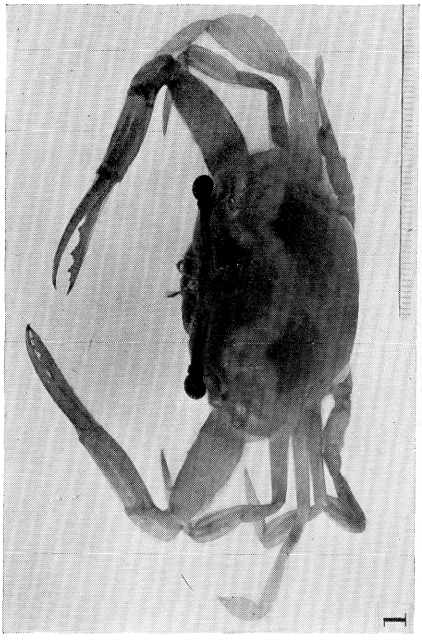
PLATE 72

Fig. 1 *Euphylax dovii* Stimpson, male, dorsal view (p. 423)
Fig. 2 *Euphylax dovii* Stimpson, male, ventral view
Fig. 3 *Cronius ruber* (Lamarck), male, dorsal view (p. 422)
Fig. 4 *Cronius ruber* (Lamarck), male, ventral view







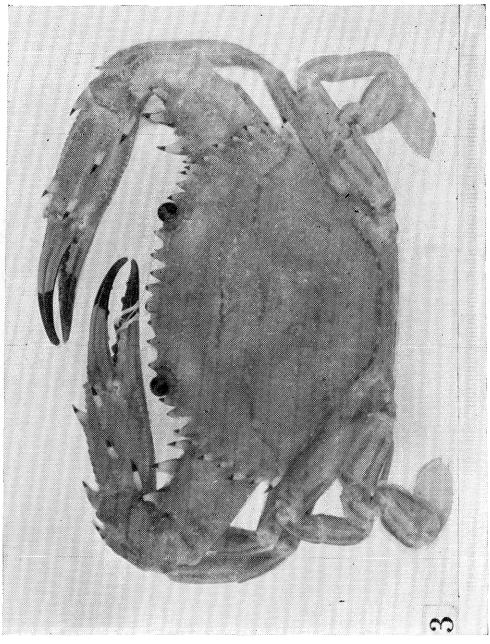


PLATE 73

Kraussia americana Garth (p. 424)
Male holotype

Fig. 1 Dorsal view
Fig. 2 Ventral view

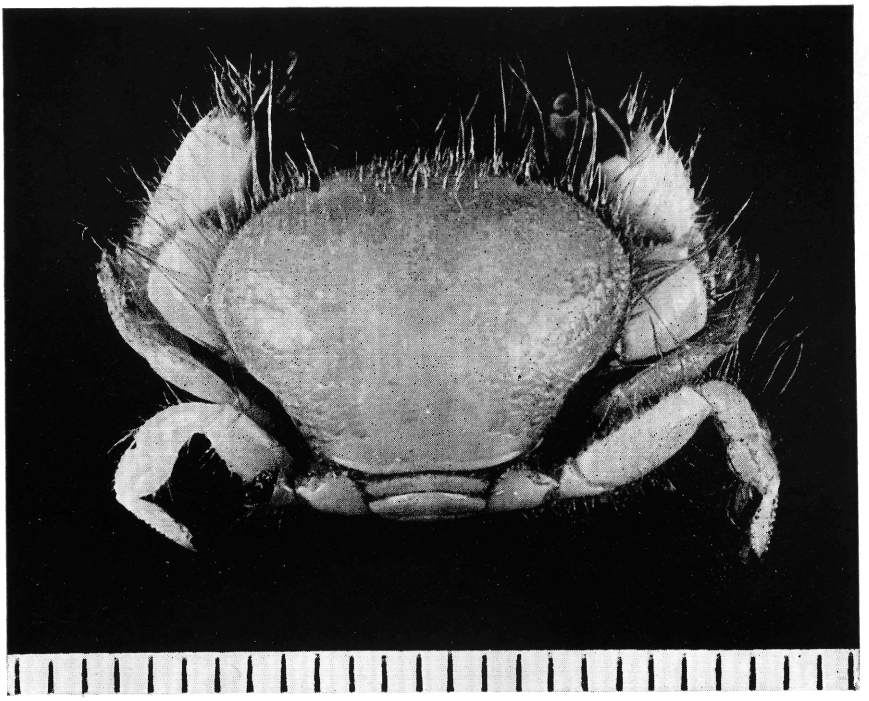
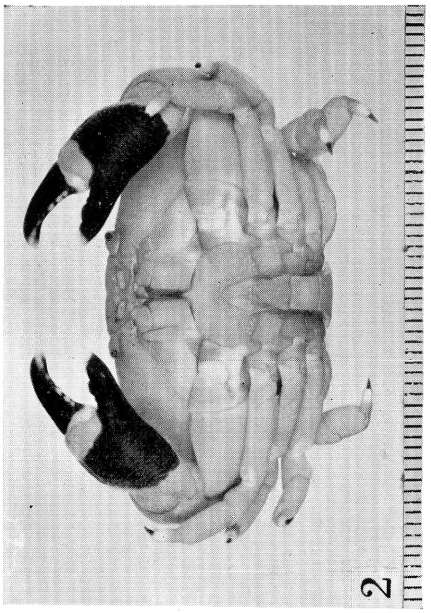
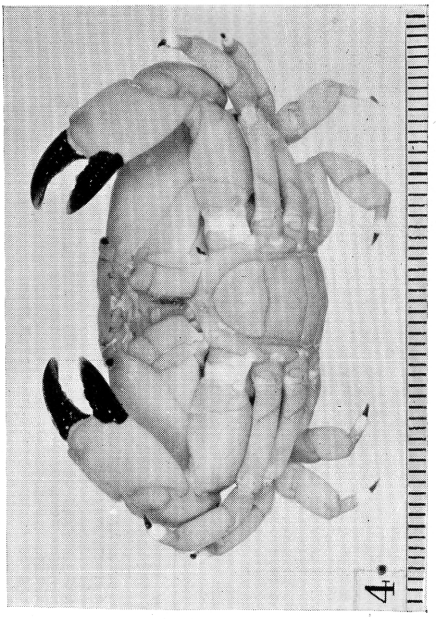


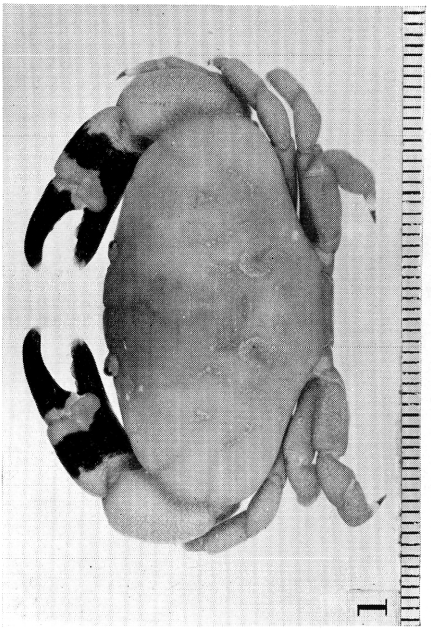
PLATE 74

Carpilodes cinctimanus (White) (p. 426)

Fig. 1 Male, dorsal view
Fig. 2 Male, ventral view
Fig. 3 Female, dorsal view
Fig. 4 Female, ventral view







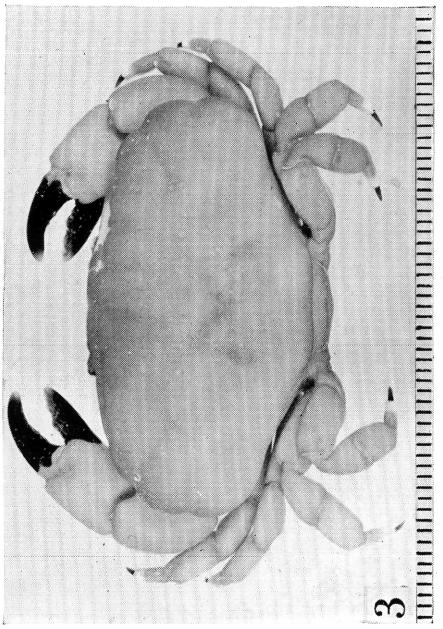


PLATE 75

Fig. 1 *Actaea angusta* Rathbun, male, dorsal view (p. 433)
Fig. 2 *Actaea angusta* Rathbun, male, ventral view
Fig. 3 *Lipaesthesius leeanus* Rathbun, female, dorsal view (p. 441)
Fig. 4 *Lipaesthesius leeanus* Rathbun, female, frontal view
Fig. 5 *Medaeus spinulifer* (Rathbun), male, dorsal view (p. 443)
Fig. 6 *Medaeus spinulifer* (Rathbun), male, ventral view

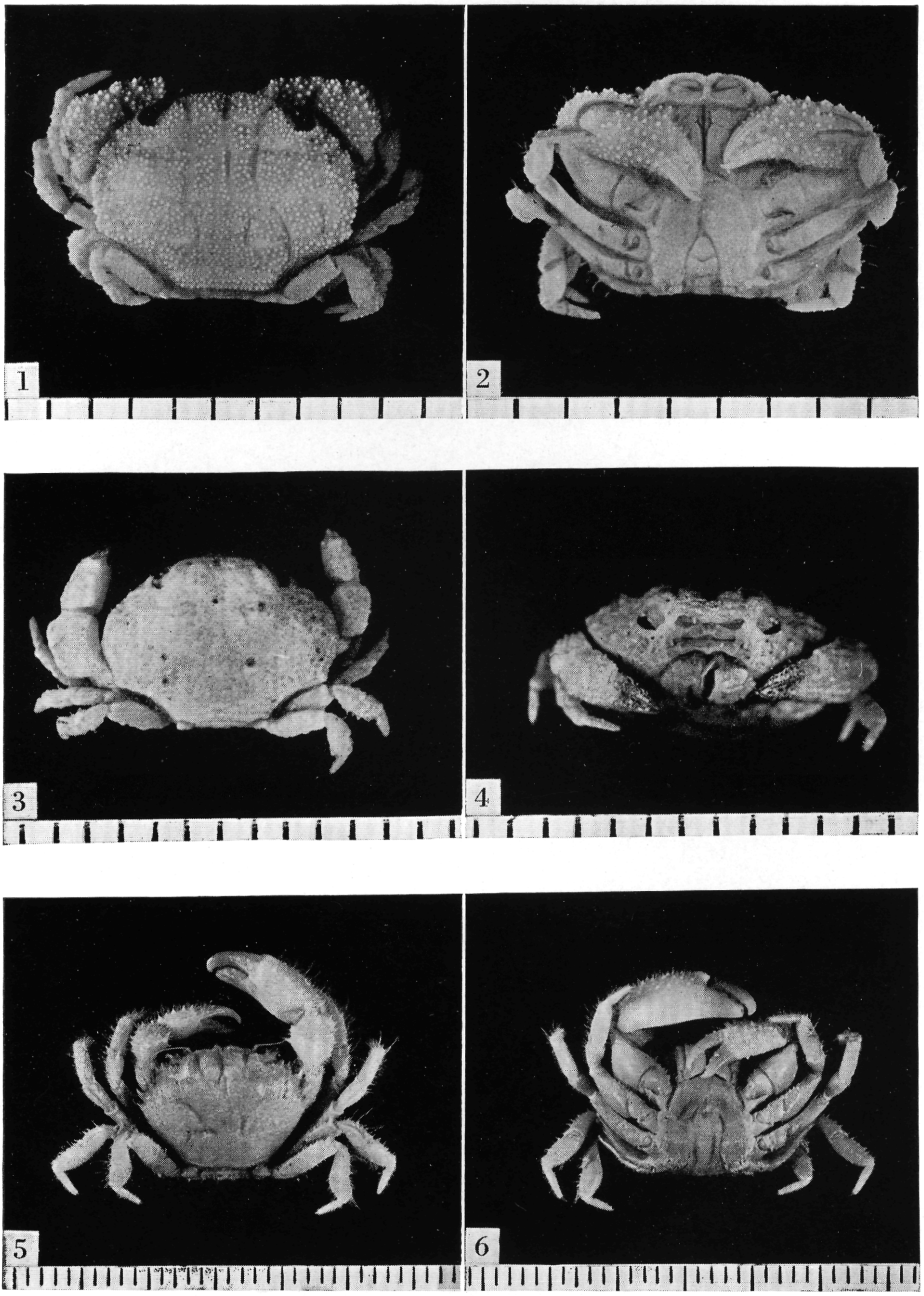

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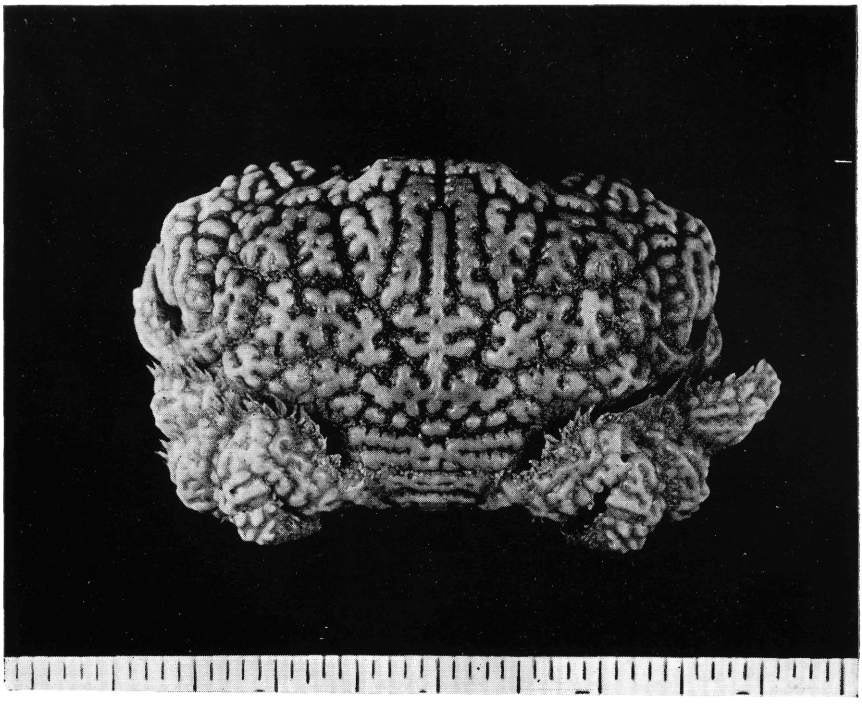
PLATE 76

Glyptoxanthus hancocki Garth (p. 437)
Female holotype

Fig. 1 Dorsal view
Fig. 2 Ventral view



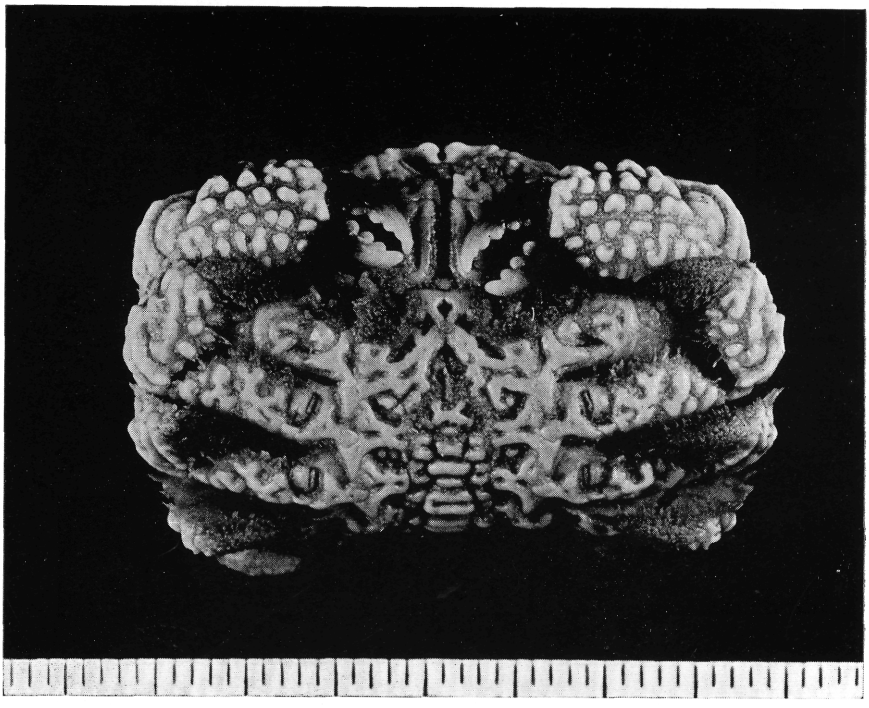


PLATE 77

Fig. 1 *Actaea sulcata* Stimpson, male, dorsal view (p. 434)
Fig. 2 *Medaeus lobipes* Rathbun, male, dorsal view (p. 442)
Fig. 3 *Leptodius cooksoni* Miers, male, dorsal view (p. 448)
Fig. 4 *Micropanope polita* Rathbun, male, dorsal view (p. 459)
Fig. 5 *Lophoxanthus lamellipes* (Stimpson), male, dorsal view (p. 451)
Fig. 6 *Micropanope xantusii* (Stimpson), male, dorsal view (p. 457)

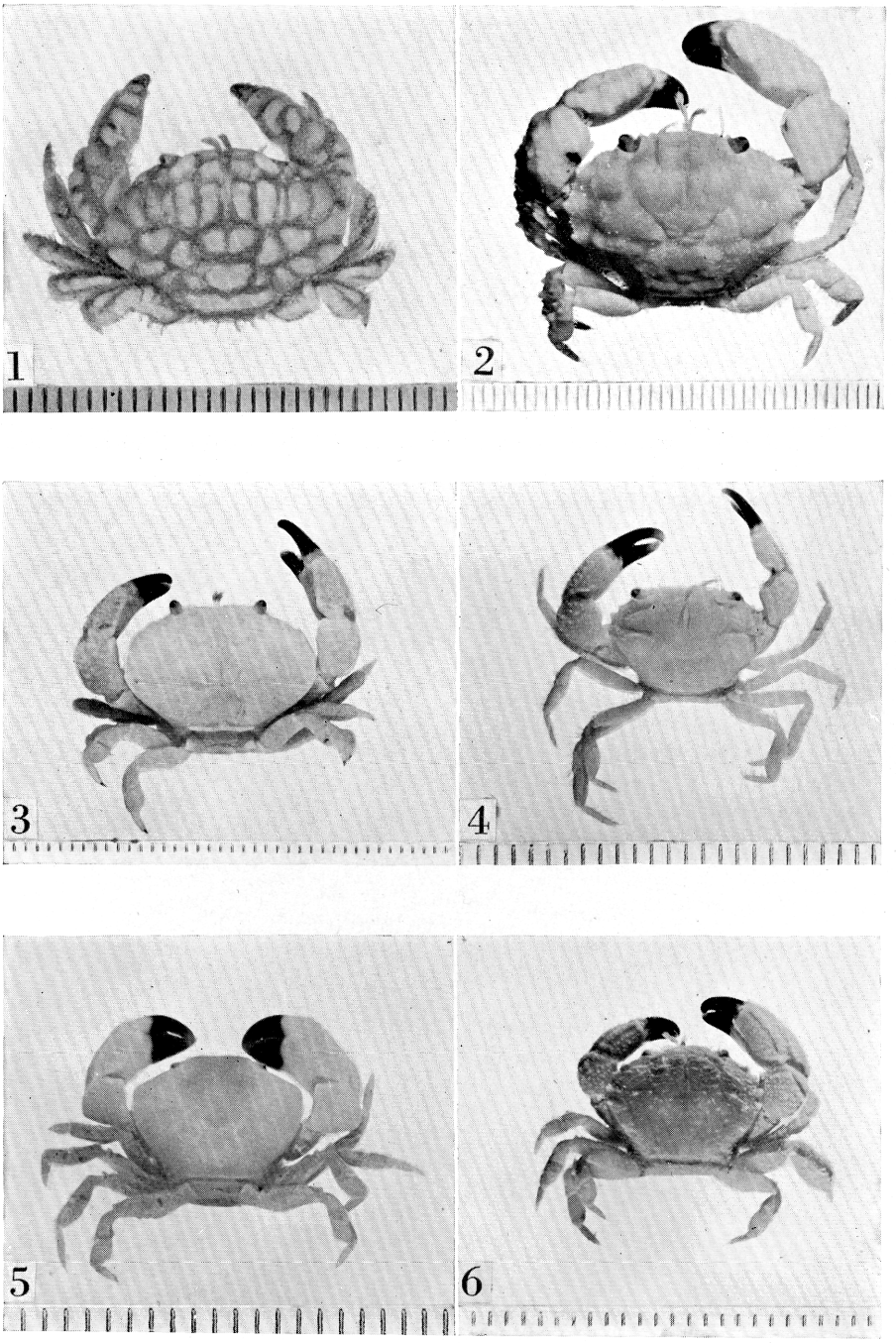

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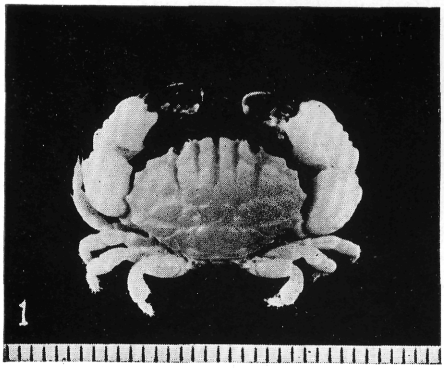
PLATE 78

Fig. 1 *Paraxanthias insculptus* (Stimpson), male, dorsal view (p. 467)
Fig. 2 *Paraxanthias insculptus* (Stimpson), male, ventral view
Fig. 3 *Lophopanopeus maculatus* Rathbun, male, dorsal view (p. 453)
Fig. 4 *Lophopanopeus maculatus* Rathbun, male, ventral view
Fig. 5 *Hexapanopeus cartagoensis* Garth, male holotype, dorsal view (p. 454)
Fig. 6 *Hexapanopeus cartagoensis* Garth, male holotype, ventral view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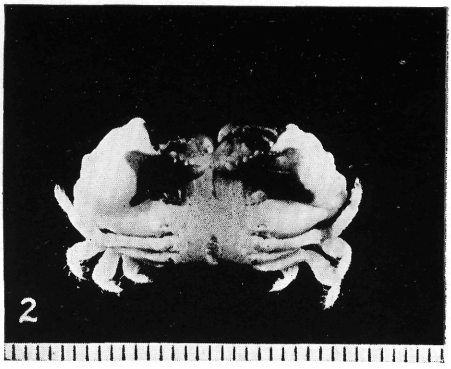
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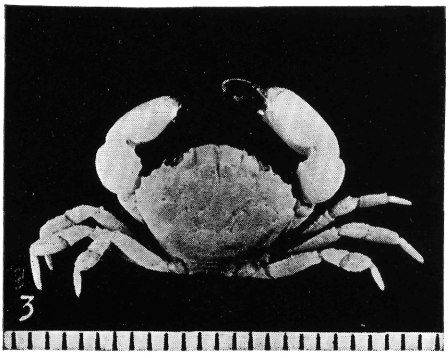
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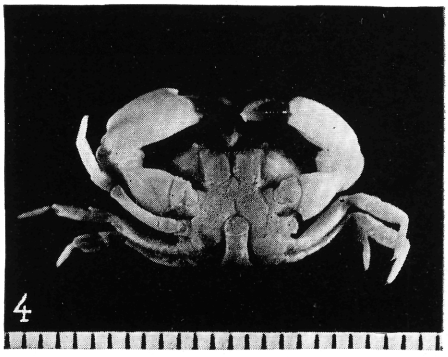
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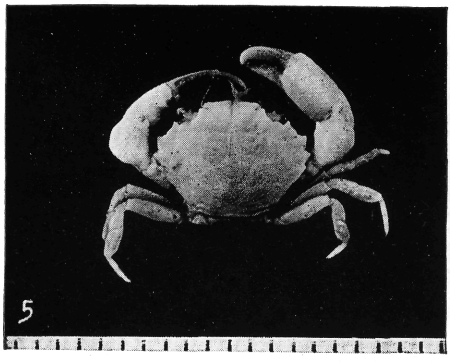
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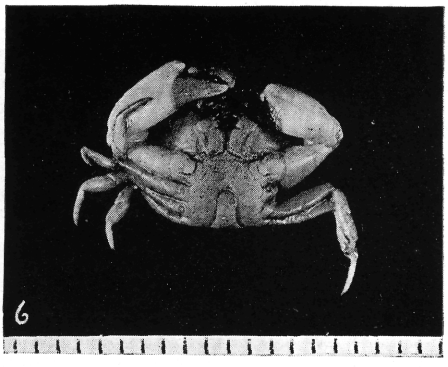
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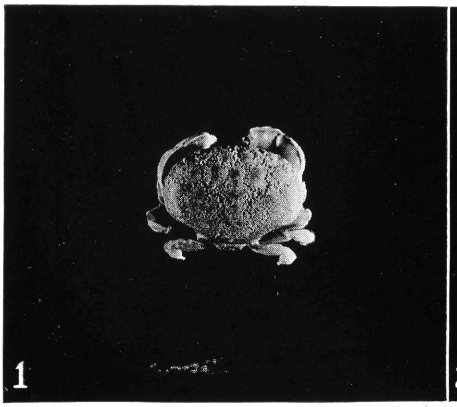
PLATE 79

Fig. 1 *Platypodia gemmata* Rathbun (p. 428)
Fig. 2 *Actaea dovii* Stimpson, young (p. 431)
Fig. 3 *Leptodius cooksoni* Miers (p. 448)
Fig. 4 *Pilumnus xantusii* Stimpson (p. 471)
Fig. 5 *Cycloxanthops vittatus* (Stimpson) (p. 445)
Fig. 6 *Actaea dovii* Stimpson, adult (p. 431)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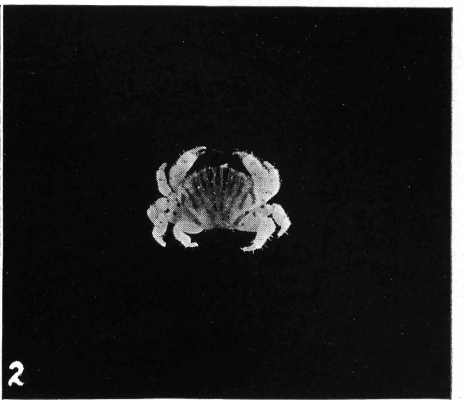
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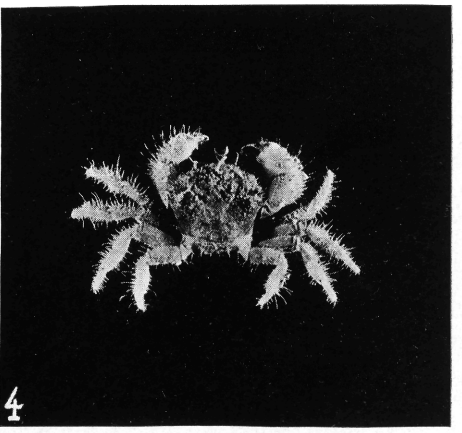
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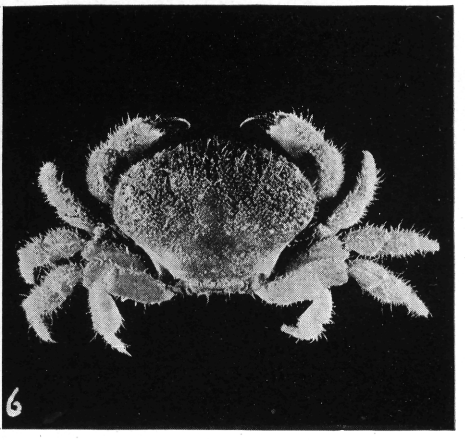
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PLATE 80

Fig. 1 *Tetraxanthus rathbunae* Chace, young female, dorsal view (p. 465)

Fig. 2 *Eriphia granulosa* A. Milne Edwards, male, dorsal view (p. 483)

Fig. 3 *Acidops fimbriatus* Stimpson, male, dorsal view (p. 474)

Fig. 4 *Pilumnus pygmaeus* Boone, male, dorsal view (p. 472)

Fig. 5 *Maldivia galapagensis* Garth, male holotype, dorsal view (p. 495)

Fig. 6 *Quadrella nitida* Smith, young, dorsal view (p. 494)

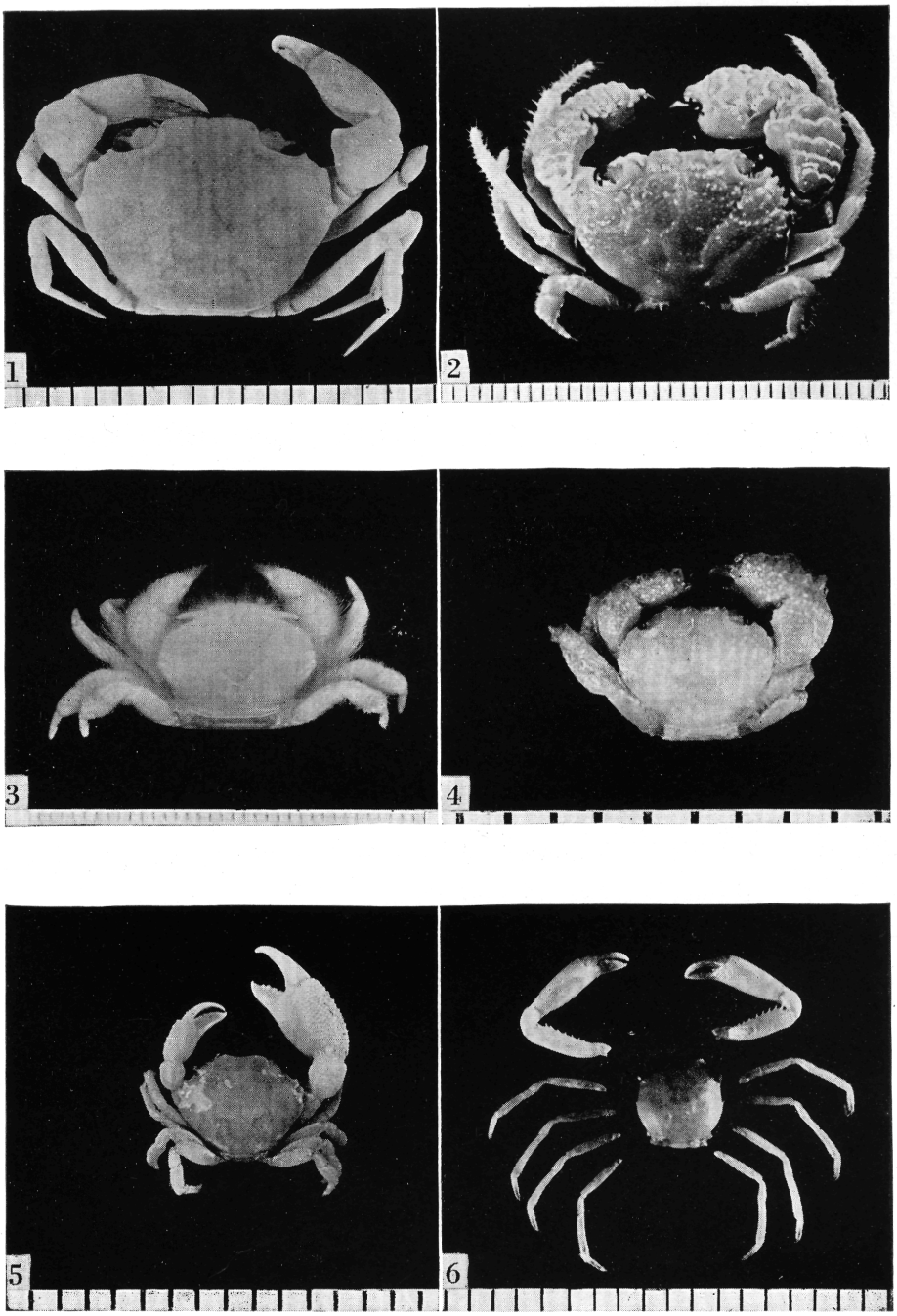
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PLATE 81

Fig. 1 *Ozius tenuidactylus* (Lockington), male, dorsal view (p. 479)

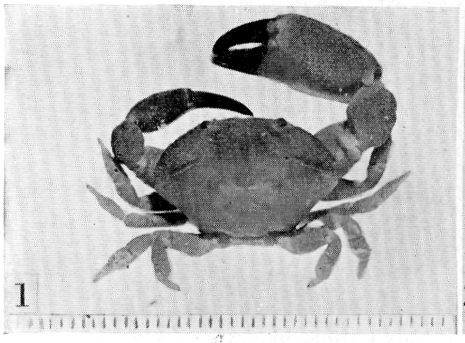
Fig. 2 *Ozius perlatus* Stimpson, male, dorsal view (p. 477)

Fig. 3 *Ozius verreauxii* Saussure, young, dorsal view (p. 476)

Fig. 4 *Trapezia cymodoce ferruginea* Latreille, male, dorsal view (p. 491)

Fig. 5 *Domecia hispida* Eydoux and Souleyet, male, dorsal view (p. 489)

Fig. 6 *Trapezia digitalis* Latreille, female, dorsal view (p. 493)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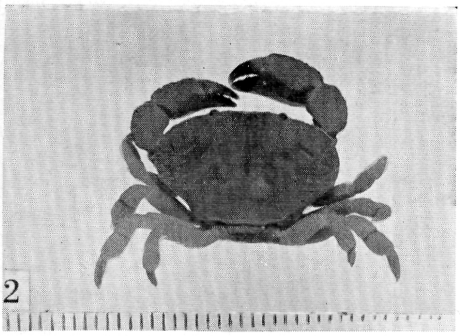
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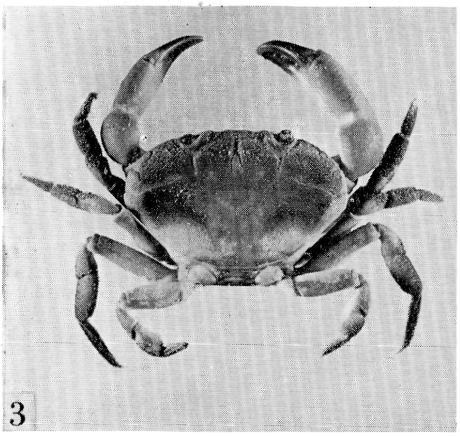
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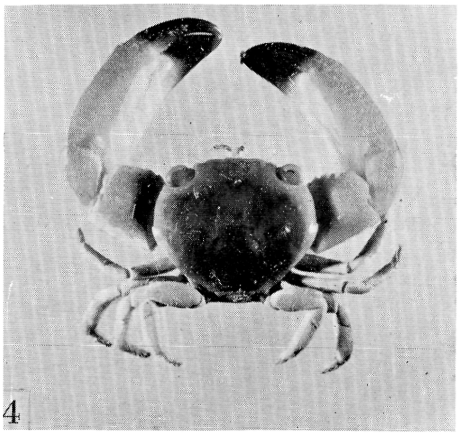
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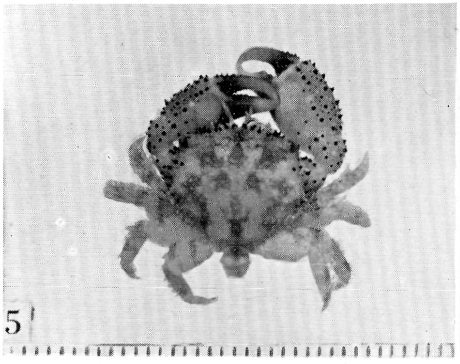
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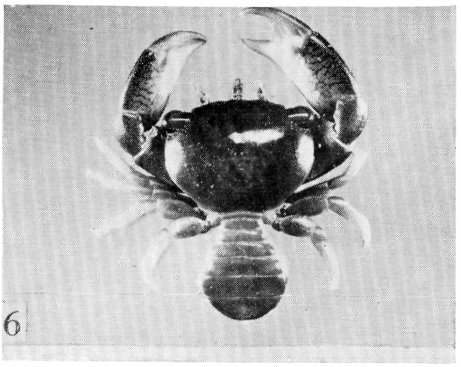
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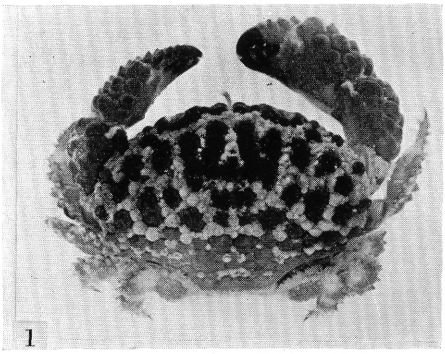
PLATE 82

Fig. 1 *Daira americana* Stimpson, female, dorsal view (p. 438)
Fig. 2 *Daira americana* Stimpson, female, ventral view
Fig. 3 *Menippe obtusa* Stimpson, male, dorsal view (p. 470)
Fig. 4 *Menippe obtusa* Stimpson, male, ventral view
Fig. 5 *Ozius verreauxii* Saussure, male, dorsal view (p. 476)
Fig. 6 *Ozius verreauxii* Saussure, male, ventral view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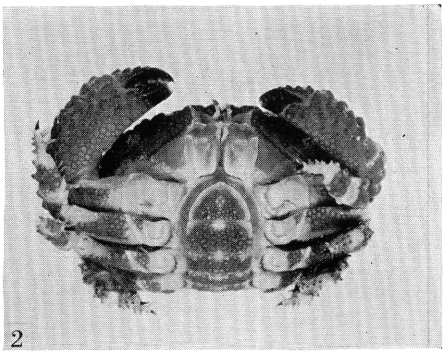
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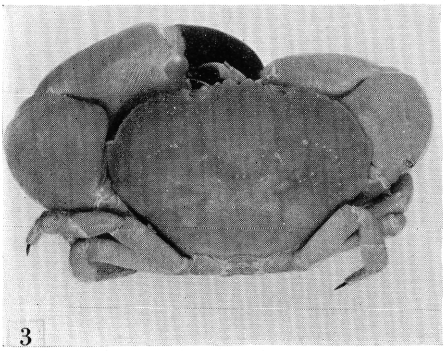
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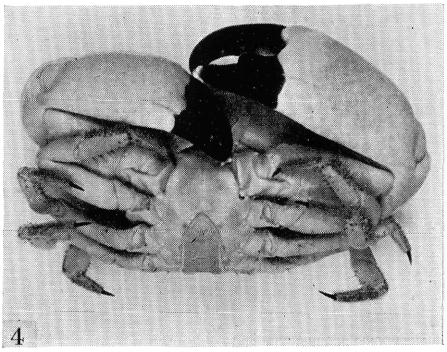
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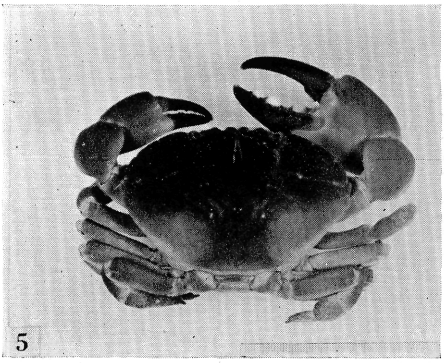
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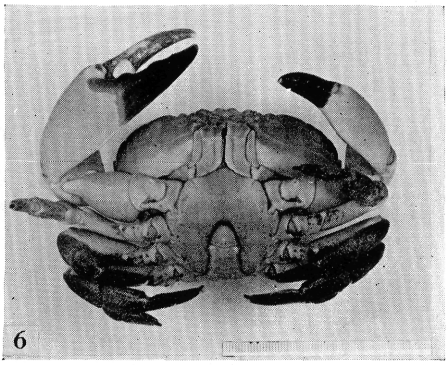
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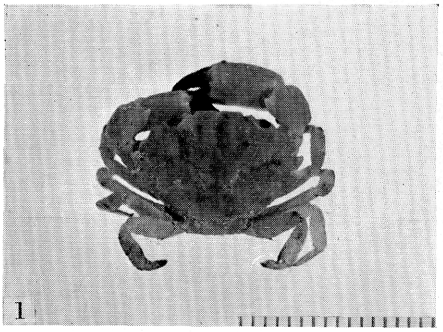
PLATE 83

Fig. 1 *Leptodius snodgrassi* Rathbun, male, dorsal view (p. 447)
Fig. 2 *Eurytium affine* (Streets and Kingsley), female, dorsal view (p. 456)
Fig. 3 *Eriphides hispida* (Stimpson), female, dorsal view (p. 487)
Fig. 4 *Eriphides hispida* (Stimpson), female, ventral view
Fig. 5 *Eriphia squamata* Stimpson, male, dorsal view (p. 482)
Fig. 6 *Eriphia squamata* Stimpson, male, ventral view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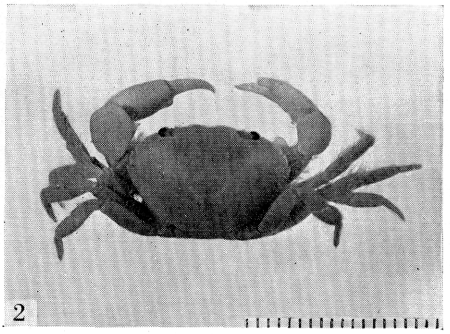
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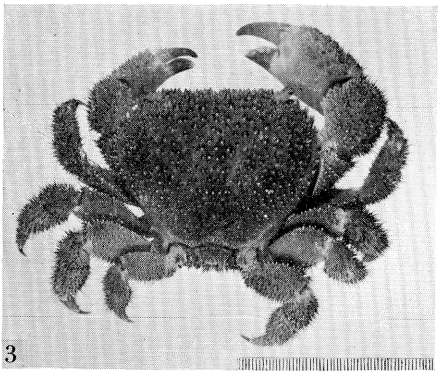
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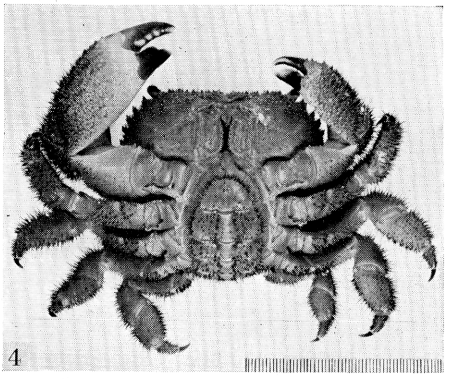
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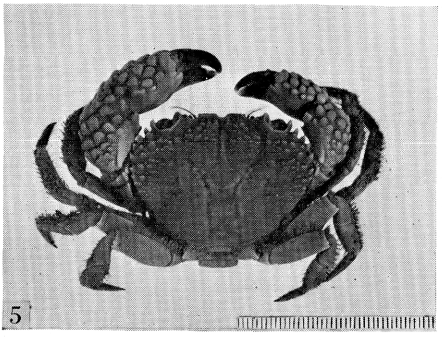
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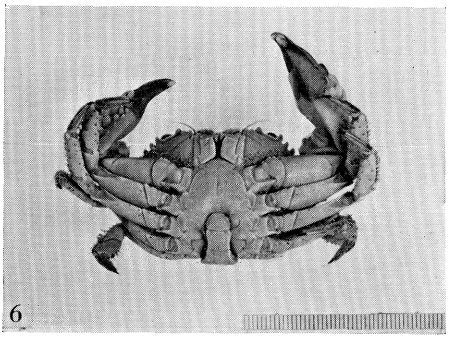
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PLATE 84

Fig. 1 *Parapinnixa glasselli* Garth, female paratype, dorsal view (p. 497)

Fig. 2 *Parapinnixa glasselli* Garth, female paratype, ventral view

Fig. 3 *Pinnaxodes chilensis* (Milne Edwards), female, dorsal view (p. 498)

Fig. 4 *Stronglylocentrotus gibbosus* (Valenciennes) host of *Pinnaxodes chilensis* (p. 498)

Fig. 5 *Pinnaxodes chilensis* (Milne Edwards), female, ventral view (p. 498)

Fig. 6 *Pinnixa transversalis* (Milne Edwards and Lucas), female, dorsal view (p. 497)

Fig. 7 Tube of *Chaetopterus variopedatus* (Renier), host of *Pinnixa transversalis* (p. 497)

Fig. 8 *Pinnixa transversalis* (Milne Edwards and Lucas), female, ventral view (p. 497)

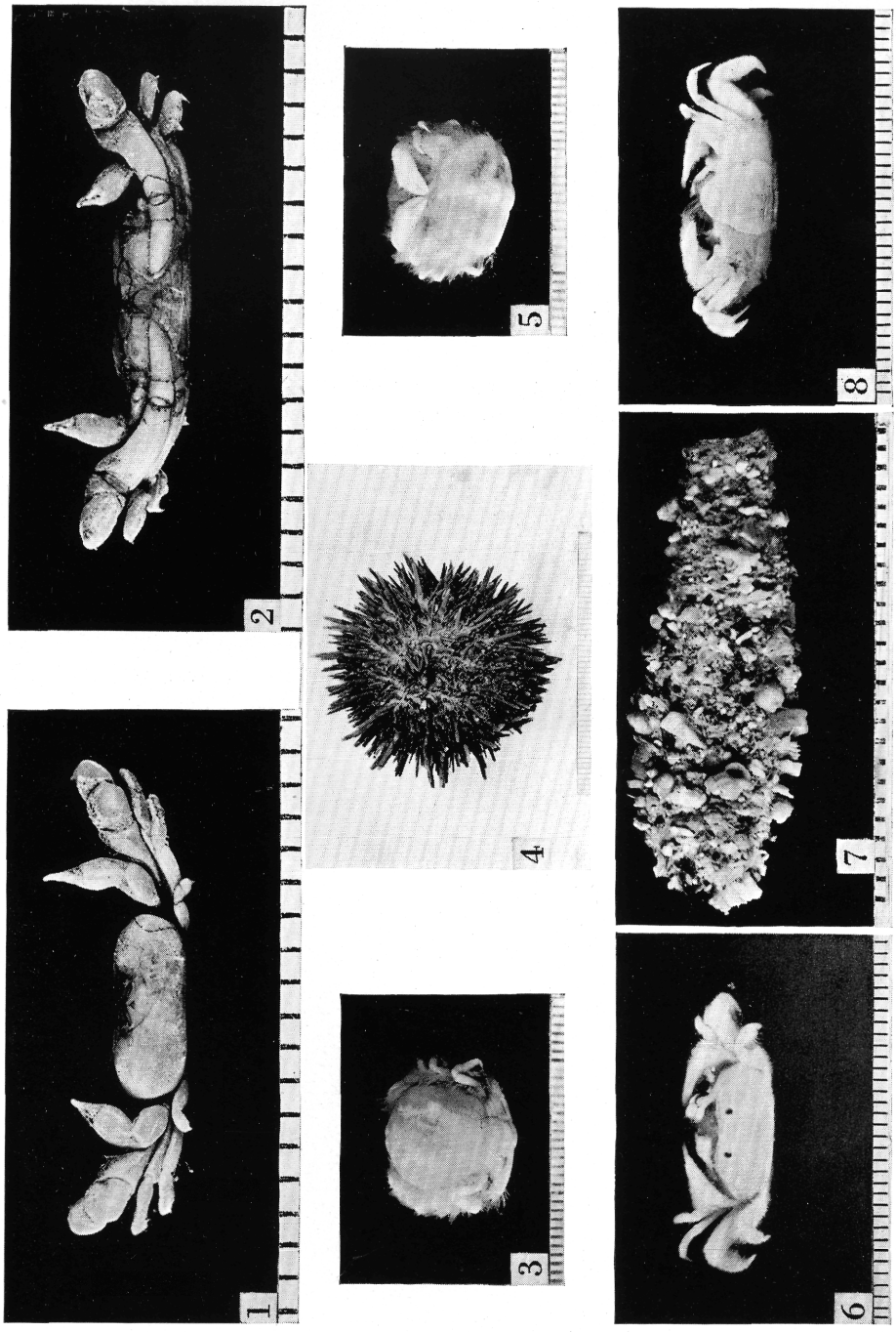
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PLATE 85

Fig. 1 *Cymopolia velerae* Garth, female holotype, dorsal view (p. 503)

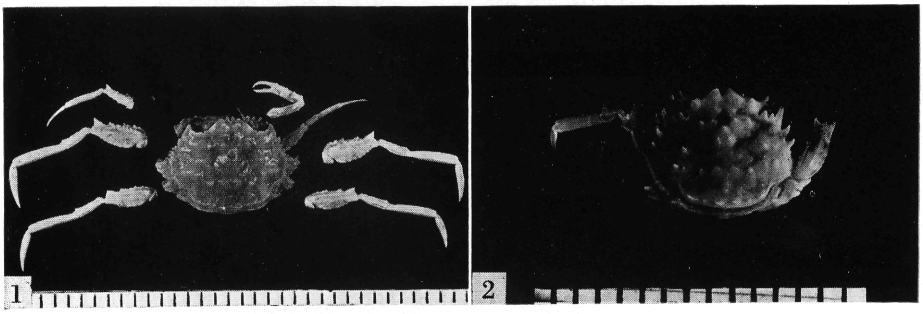
Fig. 2 *Cymopolia cortezi* Crane, young, dorsal view (p. 499)

Fig. 3 *Cymopolia fragilis* Rathbun, dorsal view, male above, female below (p. 501)

Fig. 4 *Cymopolia fragilis* Rathbun, ventral view, male above, female below

Fig. 5 *Euchirograpsus americanus* A. Milne Edwards, male, dorsal view (p. 511)

Fig. 6 *Euchirograpsus americanus* A. Milne Edwards, male, ventral view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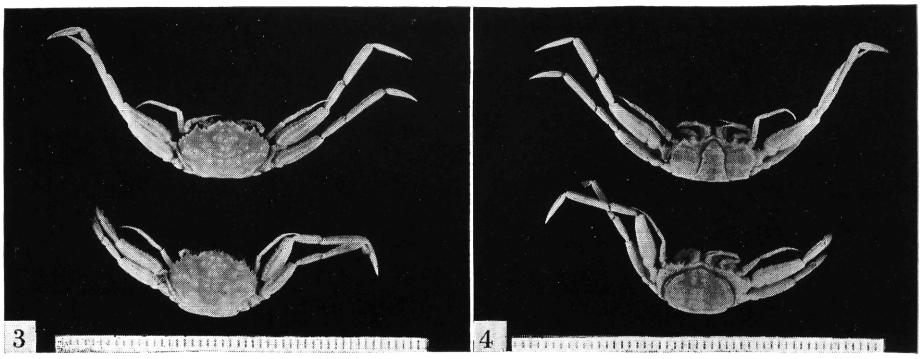
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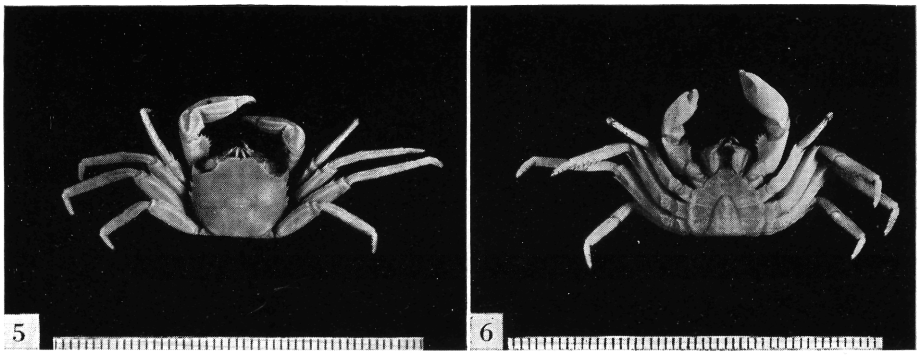
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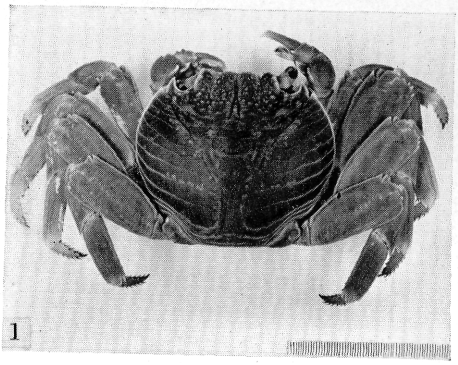
PLATE 86

Fig. 1 *Grapsus grapsus* (Linnaeus), male, dorsal view (p. 504)
Fig. 2 *Grapsus grapsus* (Linnaeus), male, ventral view
Fig. 3 *Geograpsus lividus* (Milne Edwards), female, dorsal view (p. 506)
Fig. 4 *Geograpsus lividus* (Milne Edwards), female, ventral view
Fig. 5 *Percnon gibbesi* (Milne Edwards), female, dorsal view (p. 512)
Fig. 6 *Percnon gibbesi* (Milne Edwards), female, ventral view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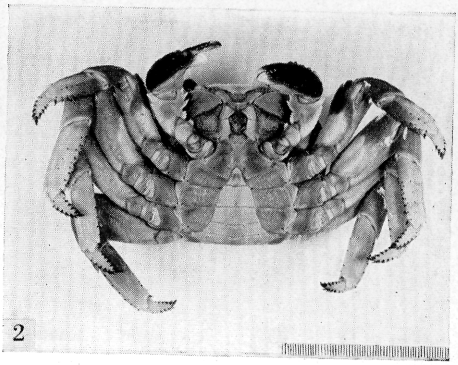
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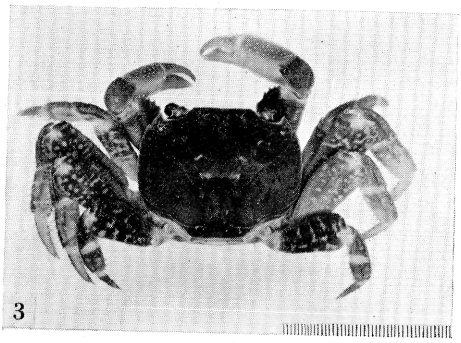
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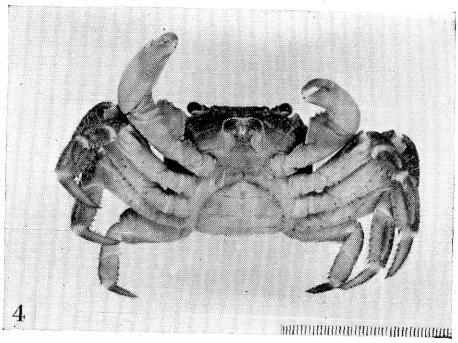
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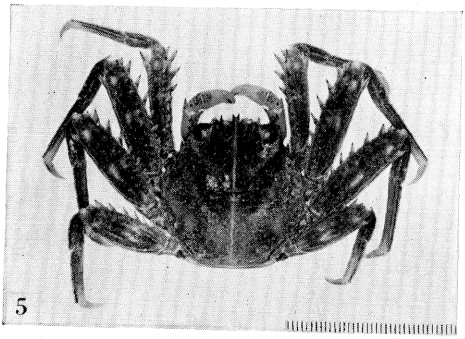
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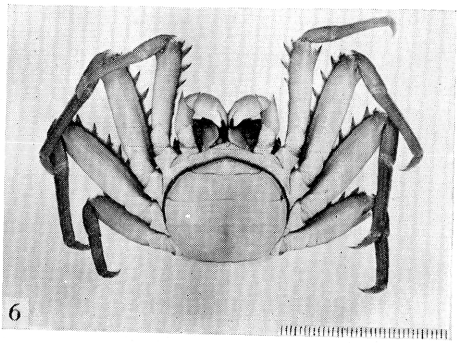
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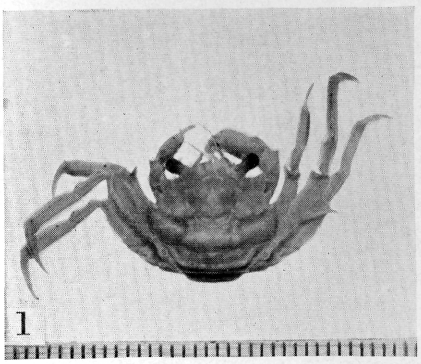
PLATE 87

Fig. 1 *Cymopolia lucasii* (Rathbun), male, dorsal view (p. 500)
Fig. 2 *Pachygrapsus transversus* (Gibbes), male, dorsal view (p. 507)
Fig. 3 *Uca galapagensis* Rathbun, male, dorsal view (p. 515)
Fig. 4 *Uca galapagensis* Rathbun, female, dorsal view
Fig. 5 *Uca helleri* Rathbun, male, dorsal view (p. 517)
Fig. 6 *Uca helleri* Rathbun, female, dorsal view
Fig. 7 *Ocypode gaudichaudii,* Milne Edwards and Lucas, male, dorsal view, natural size (p. 514)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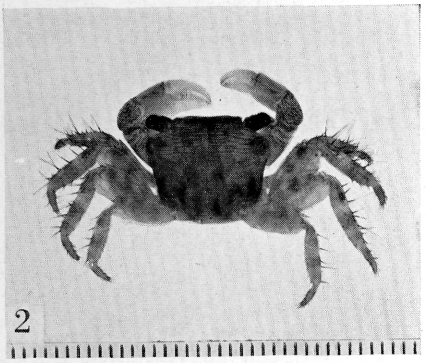
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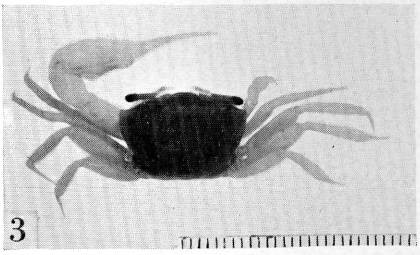
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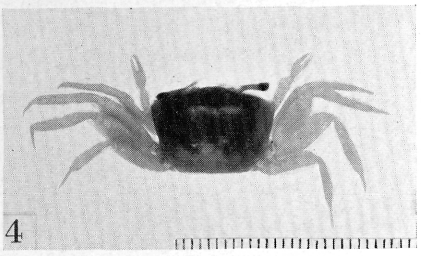
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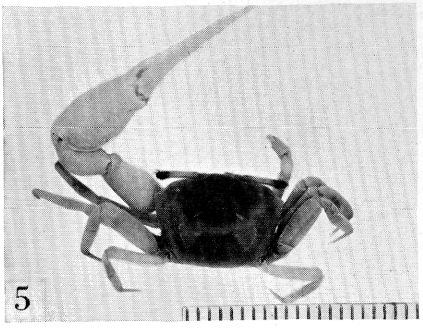
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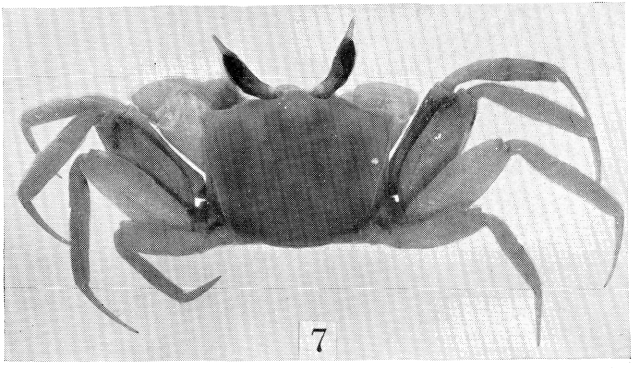
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