

*Reprinted from ZOOLOGICA, New York Zoological Society, Vol. XXII (Part 2), July 16, 1937.*

## 7.

### The Templeton Crocker Expedition. VI. Oxystomatous and Dromiaceous Crabs from the Gulf of California and the West Coast of Lower California.<sup>1</sup>

JOCELYN CRANE.

Technical Associate, Department of Tropical Research,  
New York Zoological Society.

(Plates I & II).

[Note: This is the sixth of a series of papers dealing with the specimens collected on the Twenty-fourth or Templeton Crocker Expedition of the Department of Tropical Research of the New York Zoological Society; William Beebe, Director. For data on dredges, localities, dates, etc., concerning the capture of specimens treated in this paper, refer to the present volume of *Zoologica*, No. 2, pp. 33 to 46.]

#### CONTENTS.

	Page
INTRODUCTION .....	97
<b>SUBTRIBE OXYSTOMATA</b>	
Family Calappidae	
<i>Calappa saussurei</i> Rathbun .....	98
<i>Mursia gaudichaudii</i> (Milne Edwards) .....	99
<i>Cycloes bairdii</i> Stimpson .....	100
<i>Osachila lata</i> Faxon .....	100
<i>Hepatus kossmanni</i> Neumann .....	101
Family Leucosiidae	
<i>Ebalia cristata</i> Rathbun .....	102
<i>Lithadia cumingii</i> Bell .....	102
<i>Lithadia digueti</i> Bouvier .....	103
<i>Randallia americana</i> (Rathbun) .....	103
<i>Persephona townsendi</i> (Rathbun) .....	104
<i>Iliacantha schmitti</i> Rathbun .....	104
Family Dorippidae	
<i>Ethusa lata</i> Rathbun .....	105
<i>Ethusa mascarone americana</i> A. Milne Edwards .....	105

<sup>1</sup> Contribution No. 525, Department of Tropical Research, New York Zoological Society.

## SUBTRIBE DROMIACEA

## Family Dromiidae

<i>Dromidia larraburei</i> Rathbun .....	106
<i>Hypoconcha californiensis</i> Bouvier .....	106
<i>Hypoconcha digueti</i> Bouvier .....	106

## Family Homolidae

<i>Homola faxoni</i> Schmitt .....	107
------------------------------------	-----

## INTRODUCTION.

The present paper records the oxystomatous and dromiaceous crabs taken by the Templeton Crocker Expedition with the exception of the specimens taken at Clarion Island. The collection is largely composed of little known species, the majority of the 17 forms having been reported two or three times at most and five having been known previously only from the type specimen. Observations on color in life, food notes and egg counts are included in many instances.

The catalogue numbers all refer to specimens in the collections of the Department of Tropical Research of the New York Zoological Society.

I wish to express my thanks to Dr. Fenner A. Chace, Jr., for comparing specimens of *Osachila lata* with the holotype in the Museum of Comparative Zoology, to Dr. C. R. Shoemaker for facilitating my comparisons of certain specimens with material in the United States National Museum and to Mrs. Ruth Needham Nauss for making the photographs.

## SUBTRIBE OXYSTOMATA.

## Family Calappidae.

***Calappa saussurei* Rathbun.**

*Calappa saussurei* Rathbun, 1899, Proc. U. S. Nat. Mus., XXI, p. 609, pl. XLI, fig. 6.

*General Range:* Gulf of California, 26½ to 75 fathoms.

*Local Distribution:* A total of 514 specimens was taken from Gorda Banks (Station 150), Arena Bank (Station 136) and the Inez area (Stations 142 and 146) between 33 and 75 fathoms, the bottoms ranging from hard sand or pebbles to soft clayey or shelly mud.

*Sex and Size:* Of the 514 specimens, 19 were ovigerous females measuring from 19.5 to 32.6 mm. in length; 68 were non-ovigerous females, from 16 to 32.5 mm. in length and 18 to 37 mm. in maximum breadth; and 427 were males, from 12 to 33 mm. in length and 13.5 to 38.5 mm. in maximum breadth. It will be seen that if the 388 young males (14 to 18 mm. long) which were taken in one haul were excluded from the count, the females would be more than twice as numerous as the males. Of the females, less than one-fourth carried eggs. The length was always contained 1.1 to 1.23 times in the maximum breadth, there being no sexual or age difference in proportions.

*Color:* There was a pronounced contrast apparent between the majority of specimens taken on the sandy bottoms of Gorda Banks and Santa Inez Bay and those of the mud bottoms of Arena Bank, the mud bottom specimens being usually the brighter. Typical specimens from sandy bottoms were colored as follows: Carapace violet brown or tan anteriorly, fading posteriorly to white; all tubercles of carapace bright orange; chelipeds tan, the tubercles orange and white; ambulatories white banded at the joints with pale tan. Most of the specimens from muddy bottoms, on the other

hand, had the entire carapace and sometimes the legs suffused with bright coral red or orange, while the tubercles were usually distinctly coral pink rather than orange. In both groups, the brightest color of all was often concentrated at the bases of a few scattered tubercles. There was considerable variation even among specimens taken in the same haul, the young being in general paler than the adults. Eggs coral red to vermillion.

*Food:* 12 stomachs were examined from specimens of assorted sizes, both sexes and all three dredging areas. Of these, eight held remains of very small barnacles, usually a single barnacle in a stomach; two contained annelid worms about 10 mm. in length; and two were empty. In two of the stomachs containing barnacles there were traces of sand.

*Breeding:* Ovigerous females were taken only on Arena Bank. The eggs of six specimens numbered from 4,500 to 7,200, and measured .32 mm. in diameter.

*Habits:* Live specimens placed on mud in an aquarium and covered with several inches of water lived for four days. The crabs spent almost the entire time completely buried except for the tip of the rostrum, emerging for brief periods late at night. At these times they supported themselves on the very tips of their dactyls on the surface of the soft mud.

*Remarks:* This crab was previously known only from the type specimen, a male 20.5 mm. long, and one other young specimen, both from the southern part of the Gulf, from 26.5 and 40 fathoms respectively. The present series agrees perfectly with these known specimens except as follows: (1) In a few specimens, the widest part of the body is at the penultimate instead of the antepenultimate tooth of the lateral margin—i.e., at the fourth instead of the third branchial tooth. (2) In small specimens, the first two branchial teeth are scarcely distinguishable from the anterior marginal tubercles. (3) There is variation in the amount of granulation on the carapace.

*Material:* Station 136: D-1 (1 ♀), D-2 (3 ♀, 1 ♂), D-4 (5 ♀, 3 ♂), D-7 (1 ♀, 4 ♂), D-9 (2 ♀, 2 ♂), D-13 (1 ♂), D-14 (10 ♀, 2 ♂), D-15 (4 ♂), D-16 (16 ♀, 1 ♂), D-17 (7 ♀, 2 ♂), D-18 (5 ♀, 4 ♂), D-20 (4 ♀, 1 ♂), D-21 (5 ♀), D-22 (19 ♀, 3 ♂), D-26 (1 ♀). Station 142: D-2 (1 ♂), D-3 (5 ♀, 1 ♂). Station 146: D-1 (1 ♂). Station 150: D-2 (1 ♂), D-3 (1 ♂), D-4 (1 ♀, 1 ♂), D-8 (5 ♂), D-12 (2 ♀, 388 young ♂). Of these specimens, 36 were preserved under Cat. Nos. 36,741, 36,742, 36,818 and 36,819.

#### ***Mursia gaudichaudii* (Milne Edwards).**

*Platymera gaudichaudii* Milne Edwards, 1837, Hist. Nat. Crust., II, p. 108.

*Mursia gaudichaudii*, Schmitt, 1921, Marine Decapod Crustacea of California, p. 190, fig. 118.

*General Range:* Eastern Pacific, from the Farallon Islands, California, to Chile; 26 to 218 fathoms.

*Local Distribution:* A total of 203 specimens was taken off Cedros Island (Station 126), off Cape San Lucas (Station 151), on Gorda Banks (Station 150) and Arena Bank (Station 136) between 38 and 80 fathoms. The species was most abundant between 60 and 80 fathoms on hard sandy bottoms, although it was taken sparingly on mud and mud-and-crushed-shell bottoms.

*Sex and Size:* The specimens were almost equally divided between the sexes, about one-third of the females being ovigerous. Females of the latter group measured from 26 to 35.5 mm. in length, non-ovigerous females from 13.5 to 32 mm. and males from 14 to 56.5 mm. The length is contained in the maximum breadth (including lateral spines) about twice in the young and in all males and from 1.7 to 1.9 times in adult females. The

length is contained in the breadth measured between the anterior bases of the lateral spines 1.35 to 1.45 times in the young and in females and about 1.6 times in adult males. Therefore adult males have slightly broader bodies and longer spines than females and young.

*Color in Life:* Carapace and outer surface of chelipeds apricot buff (usual color) to pale crimson, the tubercles and spines often brighter, ranging from orange to scarlet. Inner surface of merus brilliant scarlet—at least the distal portion—in both sexes. Chelae white. Legs same general color as body, but paler; tips of dactyls horn-colored in adults. Ventral surface white to pale buff.

*Food:* 12 stomachs were examined with the following results: 4 held chaetognaths; 1, a clam-like mollusk .65 mm. in length; 1, a shrimp; 1, an anemone; 1, fragments of sea urchin test; 2, sand; 2, empty.

*Breeding:* The ovigerous females carried approximately 18,000 to 20,000 eggs measuring .32 to .38 mm. in diameter.

*Material:* Station 126: D-1 (1 ♂), D-11 (1 ♀). Station 136: D-7 (1 ♀), D-9 (1 ♀), D-20 (2 ♀, 1 ♂), D-21, (1 ♂), D-28 (2 ♂). Station 150: D-2 (20 ♀, 5 ♂), D-3 (2 ♀), D-4 (6 ♀, 1 ♂), D-6 (23 ♀, 19 ♂), D-12 (7 ♀, 3 ♂), D-13 (2 ♀, 8 ♂), D-14 (28 ♀, 28 ♂), D-15 (1 ♀, 2 ♂), D-17 (4 ♂), D-18 (6 ♂), D-22 (2 ♂), D-23 (1 ♀), D-24 (5 ♀, 12 ♂), D-25 (1 ♀), D-26 (6 ♂). Station 151: D-1 (1 ♂). Cat. Nos. 36,816, 36,817, 36,743, 36,744.

### **Cycloes bairdii** Stimpson.

*Cycloes bairdii* Stimpson, 1860, *Ann. Lyc. Nat. Hist. N. Y.*, VII, no. 2, p. 237.

*Cycloes bairdii*, Rathbun, 1933, Brachyuran Crabs of Porto Rico and the Virgin Islands, p. 101, fig. 98.

*General Range:* Pacific, from the southern part of Gulf of California to Panama; Atlantic from North Carolina to Gulf of Mexico and West Indies. To a depth of 33 fathoms.

*Local Distribution:* A total of eight specimens was taken from San Lucas Bay (Station 135) and Arena Bank (Station 136) between 3 and 33 fathoms on sandy bottoms.

*Sex and Size:* The single, non-ovigerous female measures 29 mm. in length by 29 in breadth. The seven males range from 6 mm. long by 6.5 mm. wide to 21 mm. long by 21 mm. wide.

*Food:* Of the three stomachs examined, one contained a barnacle, and two held worms and their sand tubes.

*Remarks:* Stimpson remarked that adult specimens (larger than those in the present collection) were slightly broader than long, while the young were equal in length and breadth. Our youngest specimens are of adult proportions.

*Material:* Station 135: D-1 (2 ♂), D-6 (1 ♂), D-18 (1 ♂), D-20 (1 ♂), D-26 (2 ♂). Station 136: D-5 (1 ♀). Cat. Nos. 36,745, 36,745a.

### **Osachila lata** Faxon.

(Plate I, Figures 1-4).

*Osachila lata* Faxon, 1893, *Bull. Mus. Comp. Zool.*, XXIV, p. 159.

*Osachila lata*, Faxon, 1895, *Mem. Mus. Comp. Zool.*, XVIII, p. 32, pl. V, figs. 2, 2a, 2b.

*General Range:* Gulf of California and off Las Tres Marias, west coast of Mexico. From 40 to 80 fathoms.

*Local Distribution:* A total of eight specimens was taken from Arena Bank (Station 136) and Gorda Banks (Station 150) between 40 and 75 fathoms on muddy and sandy bottoms.

*Sex and Size:* The series consists of seven males, measuring from 5.2 to 25.5 mm. in length, and a single ovigerous female, 15.5 mm. in length.

*Color in Life:* Carapace buffy pink to vinaceous purple lined or blotched with purple or terra cotta. Chelae cream colored spotted and streaked with cinnamon brown; remainder of cheliped chestnut orange to purplish. Ambulatories cream colored barred faintly or strongly with chestnut brown. Eggs black (well developed).

*Breeding:* The female carried about 1,050 eggs measuring .32 mm. in diameter.

*Remarks:* Dr. Fenner A. Chace, Jr., kindly compared the present series with the type of the species, the only specimen previously known, at the Museum of Comparative Zoology. As a result of this comparison he has written me, "There is no doubt in my mind that your specimens are referable to *O. lata*; the large male (slightly larger than the type) is so like Faxon's specimen that it could have been easily substituted for the type. Faxon's figures are far from perfect, particularly the one of the mouth parts in which the juncture of the ischium and merus of the outer maxillipeds is depicted as sharply V-shaped rather than rounded."

There is variation in the amount of granulation of the carapace and of tuberculation and erosion of the mouthparts, abdomen and sternum. In general, the rugosity increases with age except in the case of the lower, outer surfaces of the manus and fixed finger of each cheliped, which are rougher in the young.

*Material:* Station 136: D-1 (1 ♂), D-2 (1 ♂), D-23 (1 ♂), D-26 (3 ♂). Station 150: D-16 (1 ♀, 1 ♂). Cat. Nos. 36,746, 36,747.

### ***Hepatus kossmanni* Neumann.**

(Plate I, Figures 5 & 6).

*Hepatus kossmanni* Neumann, 1878, Catalog Pod. Crust. Heidelberg Mus., p. 28.

*Hepatus kossmanni*, Rathbun, 1899, Proc. U. S. Nat. Mus., XXI, p. 610.

*General Range:* "West coast of America;" Panama Bay; Gulf of California.

*Local Distribution:* Two specimens (Cat. No. 36,929) were taken off Santa Inez Point, Santa Inez Bay, in a fish trap placed at a depth of 13 fathoms on a bottom composed of finely crushed shell and mud.

*Sex and Size:* The specimens were male and female (non-ovigerous) measuring, respectively, 90 mm. long by 124 mm. wide and 70 mm. long by 96.5 mm. wide.

*Color in Life:* Dorsal surface of carapace, outer surfaces of chelipeds, and abdomen light yellow densely covered with irregular, cream-colored spots enclosed by narrow circles of scarlet red. The spots, often almost contiguous, vary greatly in size and shape, ranging from less than 1 mm. to more than 4 mm. in diameter and from perfectly round to irregularly oval in shape, the largest spots being interspersed with small ones. They are smallest and most crowded in the anterior central part of the carapace and largest on the intestinal region and on the abdomen. Sternum covered with dense olive green pubescence. Sides of carapace, inner (anterior) portions of chelipeds and ventral (unexposed) portions of ambulatories creamy white, unspotted.

*Remarks:* The present specimens were compared with those taken by the Albatross in Panama Bay, of which the largest measured only 38 mm.

in length (Neumann's type is recorded as 40 mm. long). Our specimens differ markedly in having the carapace almost perfectly smooth, traces of granulation remaining only anteriorly, and the dorsal tubercles of the young being represented by low mounds. The tubercles of the chelae and abdomen are likewise reduced, but not to such an extent as those of the carapace. The proportions of the carapace and the arrangement of the tubercle rudiments are characteristically those of *H. kossmanni* and not of *H. lineatus* Rathbun, 1899, the holotype of which was also examined.

The trap in which the present specimens were taken was baited with rotten fish and mouldy bread.

#### Family Leucosiidae.

##### ***Ebalia cristata* Rathbun.**

*Ebalia cristata* Rathbun, 1899, Proc. U. S. Nat. Mus., XXI, p. 612, pl. xliv, fig. 5.

*General Range:* Gulf of California. Between 40 and 80 fathoms.

*Local Distribution:* A total of seven specimens was taken from the Inez area (Station 147) and Gorda Banks (Station 150) between 40 and 80 fathoms on muddy and rocky bottoms.

*Sex and Size:* The collection contains three young females from 6.2 to 12.2 mm. long, one adult, non-ovigerous female 7.9 mm. long and three males, 7.8 to 10 mm. long. The females differ from the males in having the regions less sharply demarcated, the posterior pair of tubercles blunter, and the small, bead-like tubercles lower and much more homogeneous. The tooth on the sixth abdominal segment is present only in adult males.

*Color in Life:* Carapace pale buffy brown to salmon orange or pink, sometimes with a white median blotch; granules often darker than rest of carapace; chelipeds and legs spotted, banded or washed with red, orange or brown; ventral surface white with three transverse bands of red, orange or brown across middle portion of abdomen. Males usually brighter than females.

*Food:* The two stomachs examined both contained chaetognath worms.

*Remarks:* This species has been known previously only from the type specimen, a male 9.6 mm. in length from Abreojos Point, taken in 48 fathoms. The present series was compared with the type at the United States National Museum.

*Material:* Station 147: D-2 (2 ♀, 1 ♂). Station 150: D-8 (1 ♂), D-9 (1 ♀, 1 ♂), D-13 (1 ♀). Cat. Nos. 36,748, 36,820.

##### ***Lithadia cumingii* Bell.**

*Lithadia cumingii* Bell, 1855, Trans. Linn. Soc. London, XXI, p. 305, pl. XXXIII, figs. 6, 7.

*Lithadia cumingii*, Rathbun, 1899, Proc. U. S. Nat. Mus., XXI, p. 613.

*General Range:* Magdalena Bay and Gulf of California to Costa Rica.

*Local Distribution:* A young female (Cat. No. 36,930), 7.7 mm. in length, was taken on Arena Bank (Station 136: D-5) at a depth of 33 fathoms on a sandy bottom with abundant weed.

*Remarks:* The specimen when compared with the young Magdalena Bay female of approximately the same length at the United States National Museum agreed very well, except that the tubercles on the highest portions of the carapace were not quite so prominent.

***Lithadia digueti* Bouvier.**

(Plate II, Figures 7-11).

*Lithadia digueti* E. L. Bouvier, 1898, *Bull. de la Société Entomologique de France*, Séance du 23 novembre, 1898, p. 330.

*General Range:* Gulf of California.

*Local Distribution:* A total of three specimens was taken from Arena Bank (Station 136) and the Inez area (Station 142) between 30 and 35 fathoms on sandy bottoms with crushed shell and weed.

*Sex and Size:* The two non-ovigerous females both measure 19 mm. in length and 18 mm. in breadth; they are apparently fully adult. The male is 15 mm. long by 13 mm. wide.

*Color in Life* (Specimens from Santa Inez Bay): Carapace pinkish gray to deep coral pink with spots or bars of dark coral red or maroon in the following positions: On the exterior margin of the postocular depression, on proto-gastric ridge, on summits of hepatic and branchial tubercles, at anterior junction of the two branchial orifices, on posterior-lateral tubercles and in the sutures between branchial and intestinal regions; pink speckles on small branchial tubercles and inside branchial orifices; all legs usually pale pink barred or spotted with deep coral red or maroon; chelae plain pale pink; two transverse stripes of coral red or maroon across abdomen in both sexes.

*Remarks:* This strangely formed species has been known previously only from the male holotype, a specimen 14.5 mm. long by 12.2 wide taken in the Gulf of California, the depth and the exact locality not being specified. Our specimens agree excellently with the description of the type. The females differ from the male in the relative bluntness of the protuberances on the posterior half of the carapace. When laid on coarse sand or crushed shell, these crabs closely resembled pinkish nodules, formed of calcareous algae (*Melobesia*) and bryozoans, which were very common in the same nets.

*Material:* Station 136: D-30 (1 ♀). Station 142: D-1 (1 ♀), D-2 (1 ♂). Cat. Nos. 36,749, 36,821.

***Randallia americana* (Rathbun).**

*Ebalia americana* Rathbun, 1893, *Proc. U. S. Nat. Mus.*, XIV, p. 254.  
*Randallia americana*, Rathbun, 1899, *Proc. U. S. Nat. Mus.*, XXI, p. 614.

*General Range:* Gulf of California. From 9.5 to 71 fathoms.

*Local Distribution:* 49 specimens were taken from the Inez area (Stations 141, 142, 143, 146 and 147) between 18 and 60 fathoms on muddy and sandy bottoms, both types usually having an abundance of crushed shell.

*Sex and Size:* The collection is composed of 17 non-ovigerous females between 3.4 and 12 mm. in length (measured in the longitudinal mid-line, so that the posterior spines are excluded), 1 ovigerous female 9.2 mm. long and 31 males between 5.2 and 12.4 mm. in length.

*Color in Life:* Pale buff to salmon orange, the chelipeds and ambulatories often washed or banded with scarlet, orange or brown. Sometimes the larger tubercles or granules of the carapace were the same color, as well as the boundaries of some or all of the regions of the carapace.

*Food:* Six stomachs from four different stations all contained bottom detritus (including Foraminifera) and worms.

*Enemies:* Remains of young examples of this species were found in the stomachs both of *Iliacantha schmitti* and of *Dasygygius depressus* taken at these stations.

*Breeding:* The ovigerous female carried about 850 eggs .27 mm. in diameter.

*Remarks:* The males in the present series agree perfectly with the original description. Females have the posterior paired tubercles much less prominent and more widely spaced; likewise, the intestinal tubercle is less pointed. These sexual differences are notable, though to a less marked degree, even in the very young, while the male chelipeds are not elongated until the very last moults. The present specimens were compared with the type material in the United States National Museum.

*Material:* Station 141: D-4 (1 ♀, 4 ♂). Station 142: D-1 (1 ♀, 3 ♂), D-2 (3 ♀, 5 ♂), D-3 (1 ♀), D-4 (1 ♀, 2 ♂). Station 143: D-1 (4 ♂), D-2 (3 ♀, 2 ♂), D-3 (1 ♀, 1 ♂), D-5 (1 ♂). Station 146: D-1 (6 ♀, 7 ♂). Station 147: D-2 (1 ♀, 2 ♂). Cat. Nos. 36,826, 36,827, 36,828.

### ***Persephona townsendi* (Rathbun).**

*Myra townsendi* Rathbun, 1893, *Proc. U. S. Nat. Mus.*, XVI, p. 255.

*Persephona townsendi*, Rathbun, 1899, *Proc. U. S. Nat. Mus.*, XXI, p. 613.

*General Range:* Gulf of California. From 20 to 58 fathoms.

*Local Distribution:* A single male (Cat. No. 36,823), measuring 16 mm. long (excluding spines) and 14 mm. wide, was taken in the Inez area (Station 143 D-2) at a depth of 30 fathoms on a bottom composed of finely crushed shell and mud.

*Remarks:* The present specimen was compared with the group at the United States National Museum.

### ***Iliacantha schmitti* Rathbun.**

*Iliacantha schmitti* Rathbun, 1935, *Proc. Biol. Soc. Wash.*, XLVIII, p. 2.

*General Range:* Gorgona Island, Colombia (type specimen) and Gulf of California. From 35 to 150 fathoms.

*Local Distribution:* A total of 27 specimens was taken from Arena Bank (Station 136) and the Inez area (Stations 142, 146 and 147) between 35 and 60 fathoms on muddy and sandy bottoms, the majority being taken in mud.

*Sex and Size:* The specimens included 5 ovigerous females measuring from 23 to 35 mm. long (length measured to include rostrum, exclude intestinal and posterior spines), 8 non-ovigerous females 11 to 26 mm. long and 13 males, 12 to 27 mm. long.

*Color in Life:* Carapace pale apricot buff to brick red, sometimes speckled or streaked with white; a large white spot often present on hepatic region, or a larger patch on the branchial; anterior part of carapace sometimes speckled with maroon; posterior pair of spines sometimes yellow. All legs buff, the upper side of the merus washed with orange or red; chelae and dactyls of ambulatories often bright orange, sometimes brown. Ventral side pale. Eggs wine red to deep purple.

*Food:* Of eight stomachs examined, two contained remains of young *Randallia americana*, one of shrimp, and one of an indeterminable crustacean; two held bottom detritus and two were empty.

*Breeding:* A female 23 mm. in length carried about 2,900 eggs measuring .38 mm. in diameter.

*Habits:* Specimens kept alive for four days in an aquarium remained completely buried in mud in the bottom.

*Remarks:* Examples of the present series were compared with the

type specimen in the United States National Museum. This species will be fully described and illustrated by Dr. Rathbun in her monograph on the Oxystomatous Crabs, which is now in press.

*Material:* Station 136: D-2 (1 ♂), D-4 (1 ♀), D-17 (1 ♂), D-20 (3 ♀, 1 ♂), D-21 (1 ♂), D-22 (2 ♀), D-23 (1 ♀), D-24 (1 ♂), D-26 (2 ♀, 2 ♂), D-31 (2 ♂). Station 142: D-3 (1 ♀). Station 146: D-1 (2 ♀, 2 ♂). Station 147: D-2 (2 ♀, 2 ♂). Sixteen of these specimens are preserved under Cat. Nos. 36,750, 36,822, 36,824 and 36,825.

#### Family Dorippidae.

##### ***Ethusa lata* Rathbun.**

*Ethusa lata* Rathbun, 1893, *Proc. U. S. Nat. Mus.*, XVI, p. 258.

*Ethusa lata*, Rathbun, 1899, *Proc. U. S. Nat. Mus.*, XXI, p. 615.

*General Range:* From Cedros Island and the Gulf of California to Panama Bay. From 14 to 66 fathoms.

*Local Distribution:* A total of five specimens was taken from off Cedros Island (Station 126), from Arena Bank (Station 136), Gorda Banks (Station 150) and the Inez area (Station 143) between 25 and 56 fathoms on muddy, sandy and rocky bottoms.

*Sex and Size:* The series includes one ovigerous female measuring 14.5 mm. long by 16.5 mm. wide and four males, from 7 mm. long by 7.2 mm. wide to 15.5 mm. long by 17 mm. wide. The second ambulatories of the female measure 30.5 mm. in length, those of the largest male 44 mm.

*Color in Life:* General color olive buff, the palms and chelae of large males scarlet, the legs of all specimens banded with buff or white and scarlet, or entirely suffused with scarlet.

*Food:* The specimen taken off Cedros Island had eaten small worms with tubes of sand grains; one from the Inez area held organic detritus, probably a worm.

*Breeding:* The ovigerous female carried about 4,800 eggs measuring .32 mm. in diameter.

*Remarks:* The present series was compared with the type specimen at the United States National Museum.

*Material:* Station 126: D-9 (1 ♂). Station 136: D-4 (1 ♀), D-9 (1 ♂). Station 143: D-4 (1 ♂). Station 150: D-9 (1 ♂). Cat. Nos. 36,751, 36,752, 36,830, 36,831.

##### ***Ethusa mascarone americana* A. Milne Edwards.**

*Ethusa americana* A. Milne Edwards, 1880, *Bull. Mus. Comp. Zool.*, VIII, p. 30.

*Ethusa mascarona americana*, Rathbun, 1933, Brachyuran Crabs of Porto Rico and the Virgin Islands, Scient. Survey of Porto Rico and the Virgin Islands, XV, part 1, p. 105, fig. 102.

*General Range:* From North Carolina to the Gulf of Mexico and the West Indies; Gulf of California. From 13 to 35 fathoms.

*Local Distribution:* Two specimens were taken from Arena Bank (Station 136) and the Inez area (Station 142), respectively, from 30 and 35 fathoms on sandy bottoms.

*Sex and Size:* The non-ovigerous female measured 13 mm. long, the male 6.9 mm. long.

*Color in Life:* The female (from the Inez area) was deep pink, the carapace mottled and the legs banded with maroon.

*Material:* Station 136: D-30 (1 ♂). Station 142: D-1 (1 ♀). Cat. Nos. 36,753, 36,832.

#### SUBTRIBE DROMIACEA.

##### Family Dromiidae.

##### **Dromidia larraburei** Rathbun.

*Dromidia sarraburei* Rathbun, 1910, *Proc. U. S. Nat. Mus.*, XXXVIII, p. 553, pl. 48, fig. 4. (Error for *D. larraburei*).

*Dromidia larraburei*, Schmitt, 1921, *The Marine Decapod Crustacea of California, Univ. of Calif. Publ. in Zool.*, XXIII, p. 183, pl. 33, fig. 1.

*General Range:* From Monterey Bay, California, to Peru and Galápagos Islands. From shallow water to 45 fathoms.

*Local Distribution:* Eight specimens were taken on Arena Bank (Station 136) between 40 and 45 fathoms on muddy bottoms.

*Sex and Size:* The series contains three non-ovigerous females between 12 and 26 mm. long and five males between 5.5 and 12.5 mm. long.

*Color in Life:* Pubescence yellowish; chelae scarlet.

*Food:* Three stomachs all held bottom detritus; one had algae in addition.

*Remarks:* This species has not been taken previously in deep water.

*Material:* Station 136: D-1 (1 ♂), D-13 (1 ♀, 1 ♂), D-23 (2 ♀, 3 ♂). Cat. No. 36,754.

##### **Hypoconcha californiensis** Bouvier.

*Hypoconcha californiensis* Bouvier, 1898, *Bull. de Musée de Nat. Hist. de Paris*, IV, pp. 374-375.

*General Range:* Gulf of California. To a depth of 35 fathoms.

*Local Distribution:* Two non-ovigerous females (Cat. No. 36,756), each measuring 8 mm. long by 8 mm. wide, were taken on Arena Bank (Station 136 D-30) at a depth of 35 fathoms on a sandy bottom with abundant weed.

*Remarks:* This species has been known previously only from the two original females, the intact, smaller specimen having measured 12.5 mm. in length. The present specimens agree perfectly with the description except that there are two, not three, large teeth on each frontal lobe and five, not six, on the antero-lateral margin of the carapace.

##### **Hypoconcha digueti** Bouvier.

*Hypoconcha digueti* Bouvier, 1898, *Bull. du Musée de Nat. Hist. de Paris*, IV, pp. 374, 376.

*Hypoconcha digueti*, Rathbun, 1923, *Bull. Amer. Mus. Nat. Hist.* XLVIII, p. 620.

*General Range:* Gulf of California.

*Local Distribution:* Four specimens (Cat. No. 36,755) were taken from Arena Bank (Station 136 D-30) at a depth of 35 fathoms on a sandy bottom with abundant weed.

*Sex and Size:* The series consists of one ovigerous female, 17.5 mm. long by 18.5 mm. wide, and three non-ovigerous females, two 7.2 mm. long and 7.6 mm. wide and one 25 mm. long by 26 mm. wide.

*Color in Life:* Yellowish, tinged and blotched irregularly with pink, especially ventrally; chelae crimson. The type specimen was "uniformly reddish."

*Food:* Sand and Foraminifera were contained in the stomach of the largest female.

*Breeding:* The ovigerous female carried about 775 eggs measuring .59 mm. in diameter.

*Habits:* Two of the specimens carried shells of *Glycymeris maculata* Broderip with apertures exactly matching the size of their carapaces. The type specimen was found under an old *Pecten* shell.

Family Homolidae.

***Homola faxoni* Schmitt.**

*Homola faxoni* Schmitt, 1921, The Marine Decapod Crustacea of California, *Univ. of Calif. Publ. in Zool.*, XXIII, p. 184, pl. 31, fig. 7.

*General Range:* Point Loma, California, and west of San José Point, Lower California.

*Local Distribution:* A single non-ovigerous female (Cat. No. 36,833) was taken off San José Point (Station 175 D-1) at a depth of 45 fathoms on a shaley bottom.

*Size:* Length with rostrum 16 mm., rostrum 2.7 mm., greatest width (between tips of spines) 14.5 mm., width excluding spines 12 mm., length third ambulatory leg 43.5 mm., length of same to distal extremity of merus 19 mm., length of last ambulatory to distal extremity of propodus 26.5 mm.

*Color in Life:* Entirely buff, except anterior part of carapace which is suffused with scarlet.

*Remarks:* This species has been known previously only from the type specimen, a female 45 mm. in length. The present specimen agrees perfectly with the type description except that the posterior (or lower) of the two hooked spines on each supraorbital spine is rudimentary.

## EXPLANATION OF THE PLATES.

## PLATE I.

- Fig. 1. *Osachila lata* Faxon, male, length 25.5 mm., dorsal view.  
Fig. 2. Same, ventral view.  
Fig. 3. *Osachila lata* Faxon, female, length 15.5 mm. dorsal view.  
Fig. 4. Same, ventral view.  
Fig. 5. *Hepatus kossmanni* Neumann, male, length 90 mm., dorsal view.  
Fig. 6. *Hepatus kossmanni* Neumann, female, length 70 mm., ventral view.

## PLATE II.

- Fig. 7. *Lithadia digueti* Bouvier, female, length 19 mm., dorsal view.  
Fig. 8. Same, ventral view.  
Fig. 9. *Lithadia digueti* Bouvier, male, length 15 mm., dorsal view.  
Fig. 10. Same, ventral view.  
Fig. 11. Same, posterior view.



FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.

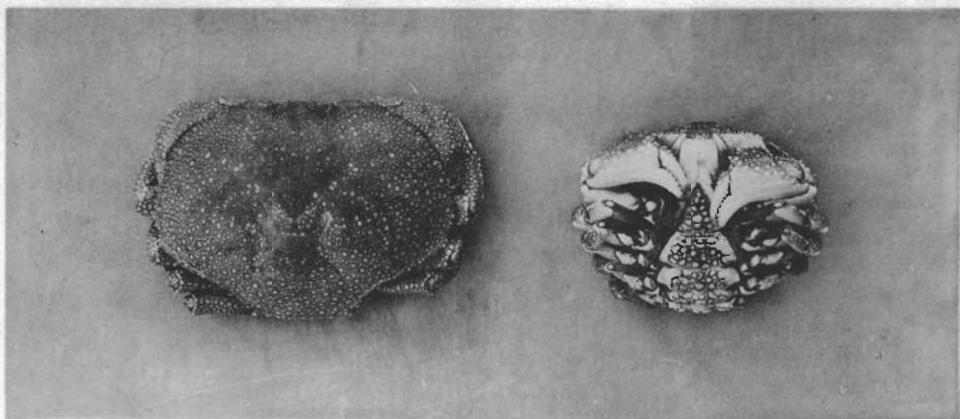


FIG. 5.



FIG. 6.

OXYSTOMATOUS AND DROMIACEOUS CRABS FROM THE GULF OF CALIFORNIA  
AND THE WEST COAST OF LOWER CALIFORNIA.

CRANE.



FIG. 7.

PLATE II.



FIG. 8.



FIG. 9.



FIG. 10.



FIG. 11.

OXYSTOMATOUS AND DROMIACEOUS CRABS FROM THE GULF OF CALIFORNIA  
AND THE WEST COAST OF LOWER CALIFORNIA.