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Crabs Taken at Laguna Beach in the Summer of 1916

H. H. NININGER

Drawings by John Coffman. Determinations by the U. S. Nat Museum.

While enjoying the pleasant surroundings at Laguna Beach in the summer of 1916, it was my pleasure to make a brief and partial survey of the crabs of that region. In this paper it is intended to give a description of those species taken which may be of use to students who, in the future, may choose to carry on this line of work. The drawings are intended to represent accurately only the outline of form as viewed from the dorsal side. No attempt is made to indicate pubescence (except in a few cases) or irregularities of surface which would require shading.

Heterocrypta occidentalis Dana

This species which was reported by Prof. Hilton from Hermosa Beach in the summer of 1915, was found in abundance directly off Laguna bathing beach in 12-20 fathoms of water. Fig. 1 represents an adult male.

Portunis xantusii (Stimpson)

These very interesting crabs were taken quite frequently in water of 10-15 fathoms. Fig. 2 is of an adult male.

Cancer gracilis Dana

Only the young of this species were taken; 5-10 fathoms of water. Fig. 3.

Cancer gibbosulus (De Horn)

Fig. 4 shows the only specimen taken, a young one.

Cancer productus Randall

The only specimen taken was a young one. Fig. 5 outlines the carapace. About 15 fathoms.

Cancer jordani Rathbun

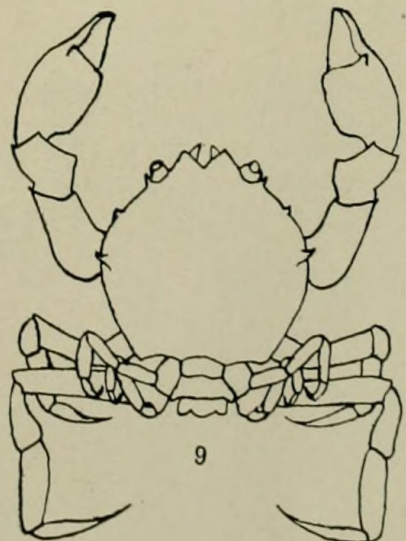
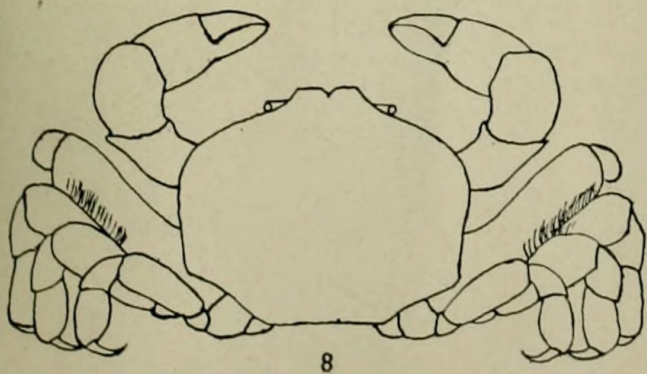
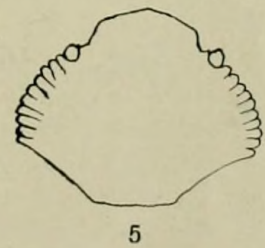
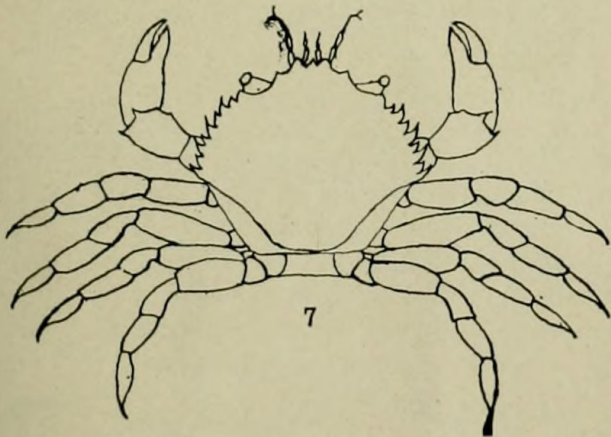
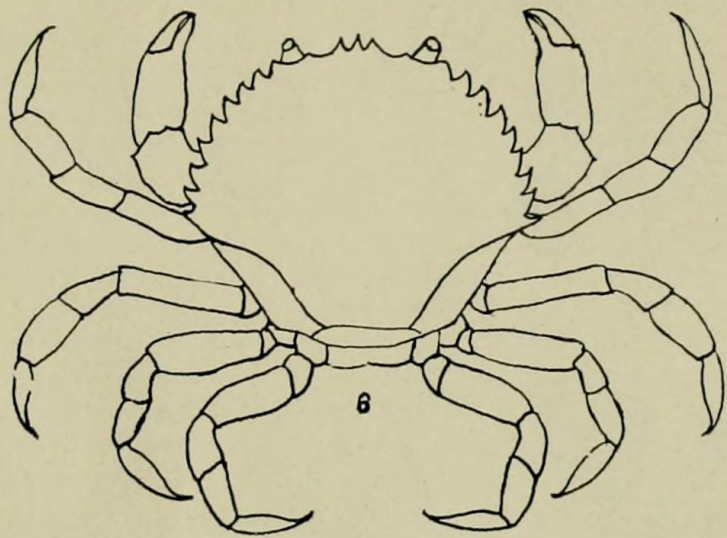
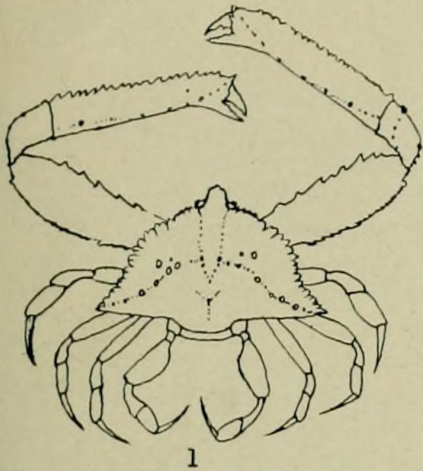
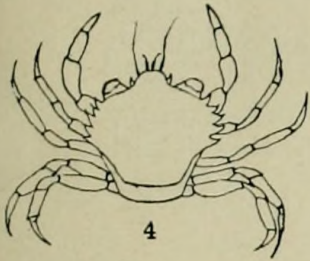
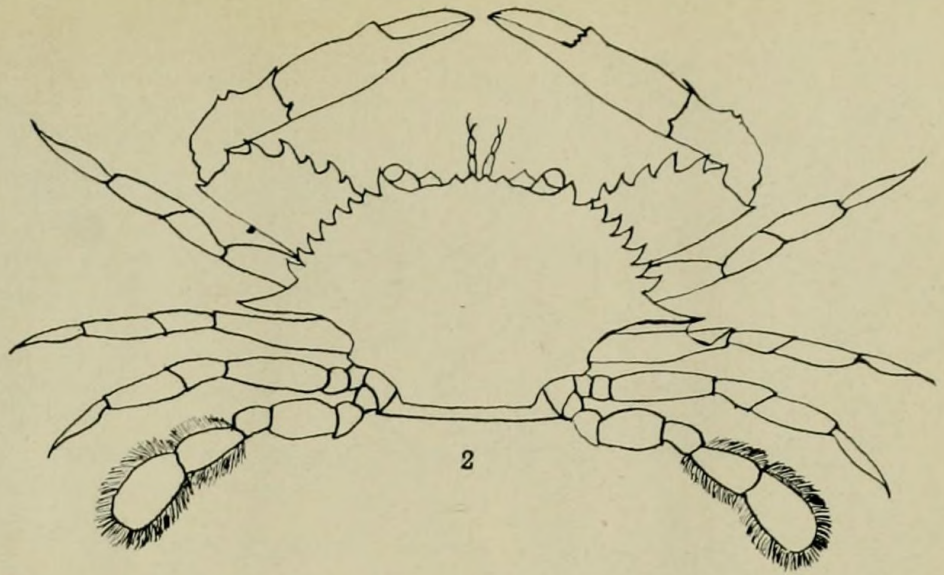
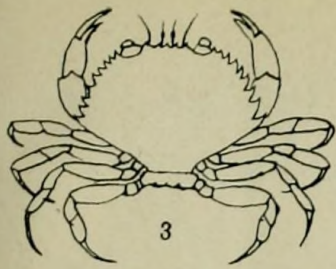
Scores of these were taken by dredging. Fig. 6 shows an adult female. The sexes are much alike. They are covered by a rather dense coat of somewhat flexible hairs. The carapaces of the young vary greatly in color. Adults are generally mottled with reddish brown on carapace and legs. Fig. 7 is of a young specimen.

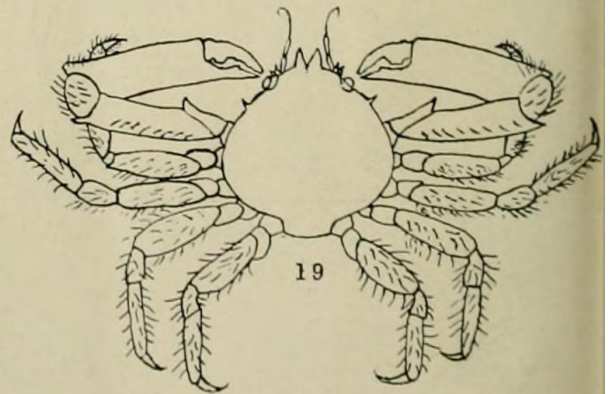
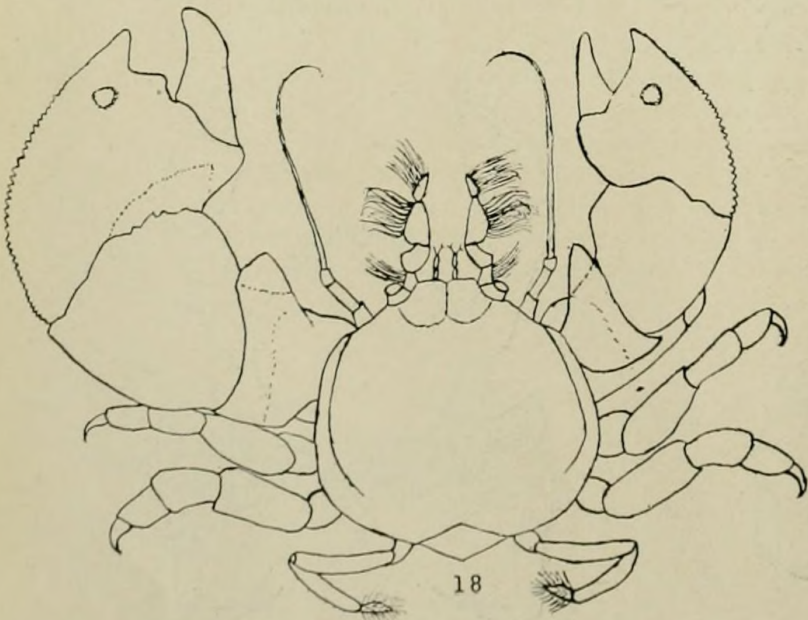
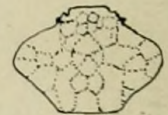
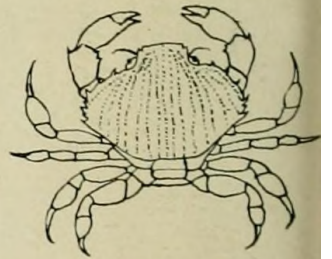
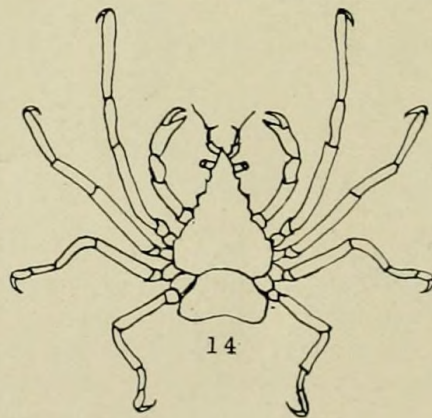
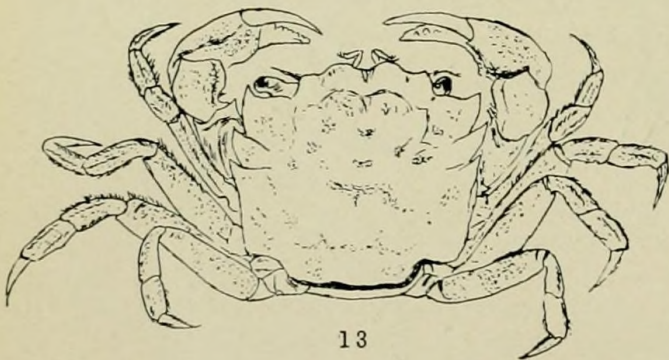
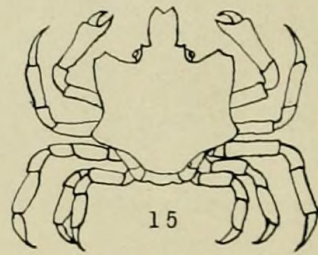
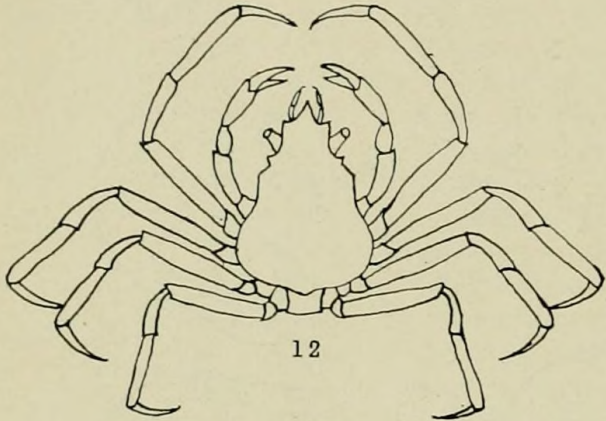
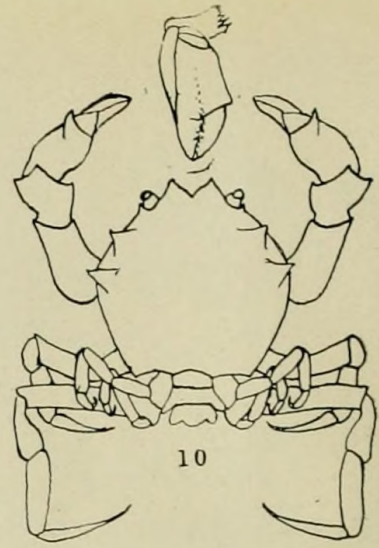
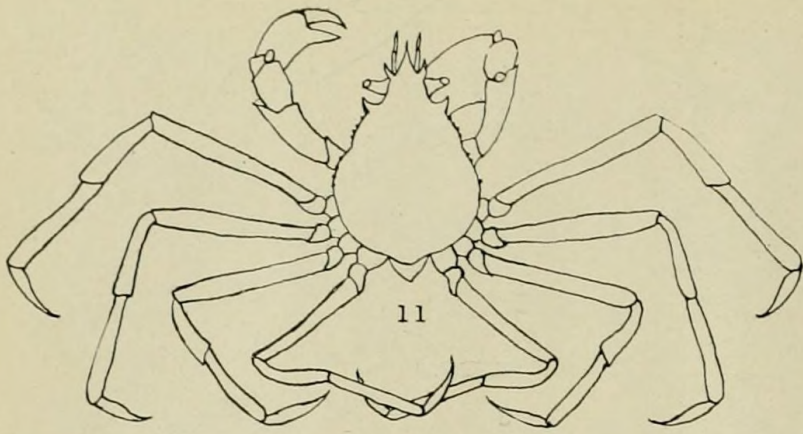
Opisthopus transversus Rathbun

Though small, this is certainly one of our most beautiful species. The carapace richly spotted with vermilion to deep red, is polished almost to pearly smoothness. Only a few of these were obtained. Fig. 8 illustrates an adult. 10-20 fathoms.

Clythrocerus plana Rathbun

Though they could lay no claim to such beauty as the last named species, these crabs surely received their full share of attention in the aquarium. They persist in carrying about upon their backs pieces of shell, pebbles, sticks, fragments of seaweed, or entire shells with their living contents and seem much embarrassed without some such covering. When placed in a glass dish where nothing else was available, one seized a snail shell more than twice its own size and seemed perfectly content when it had this firmly gripped upon its back. They are found in 15-20 fathoms of water on gravel and shell beds. The two rear pairs of legs are peculiarly modified into





upturned hooks for gripping objects carried on their backs. And the dorsal surface of the carapace is reduced to a plane. Figs. 9 and 10.

Inachoides magdalenensis Rathbun

But few of these were taken. They are not so much given to decoration as some others of the Spider Crabs. We found them in 12-15 fathoms of water. The carapace and legs are set with numerous clumps of stiff hooked hairs. Figs. 11 and 12 represent male and female respectively.

Hemigrapsus oregonensis (Dana)

This species was found in abundance on the mud flats at Balboa. One specimen was dredged at from 12-15 fathoms, probably carried out by the current from the bay. Fig. 13.

Podochela hemphilli (Lockington)

This species was fairly common among the masses of red seaweed dredged from a depth of 10-20 fathoms. They are marked with reddish brown, but are always so covered over with decorative fragments of seaweed that even their form is almost indistinguishable. In the aquarium these creatures were very interesting. Their principal occupation was that of the decorating of themselves. Seizing a fragment near one end, that end was thrust into the mouth and chewed for some time, then transferred to some part of the carapace or legs, and by means of a peculiar and oft repeated twisting movement of the hand it was so firmly fastened that it would under almost all circumstances remain in the position in which it had been placed. The chewing led us to suspect a cementing element in the saliva, but on examination of the carapace it was found that each piece of seaweed was impaled on several of the stiff recurved hairs which occur in clumps over the carapace and legs. Fig. 14 represents an adult female carrying eggs.

Epialtus bituberculatus Milne Edw.

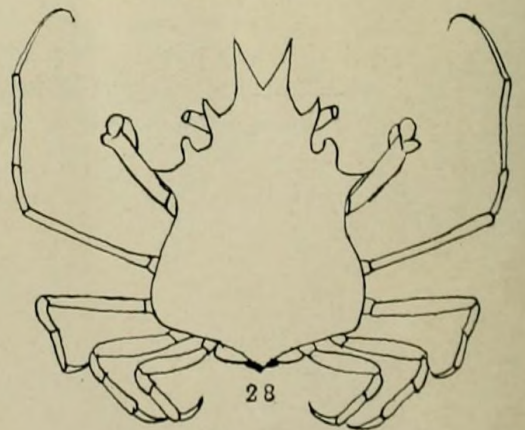
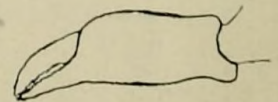
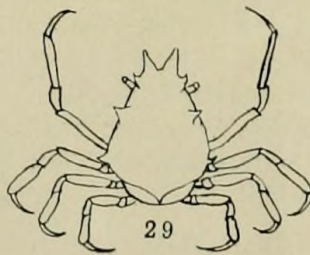
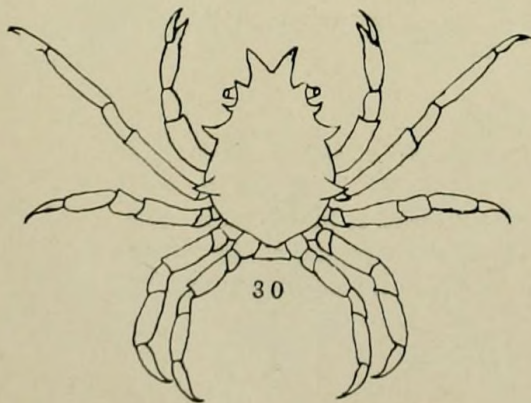
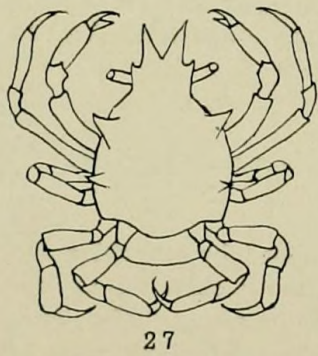
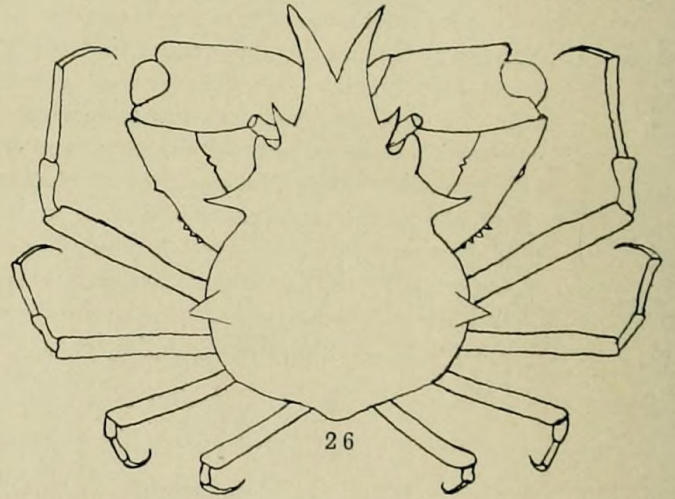
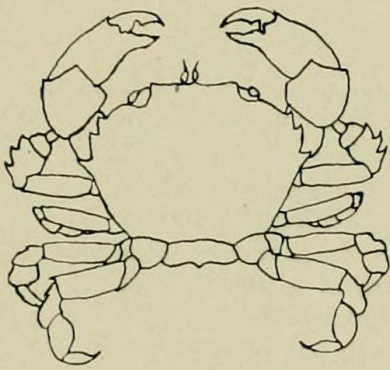
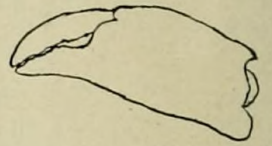
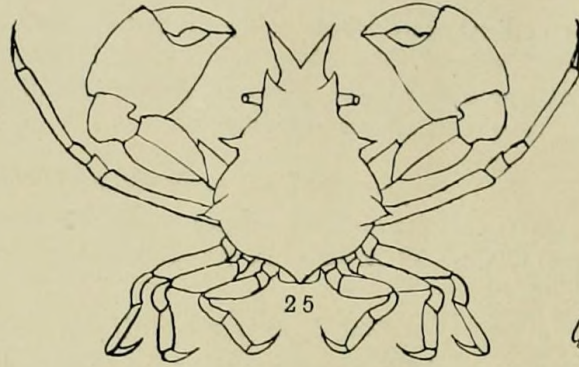
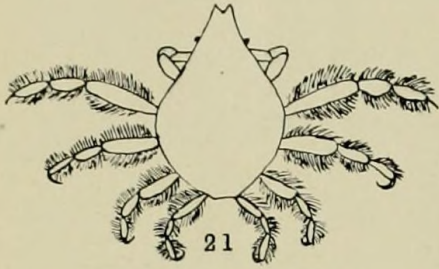
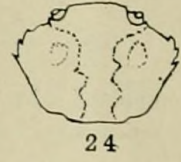
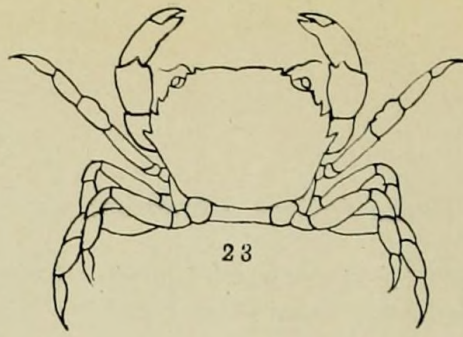
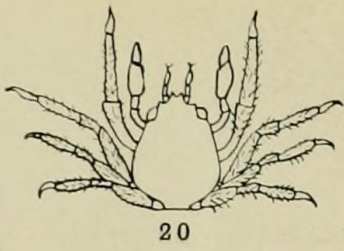
Only two were taken during the summer. Fig. 15 is from a male specimen.

Cycloxanthops novemdentatus Lock

A better idea of the adult of this species can be obtained by consulting Dr. Hilton's paper in this journal for June, 1916. In Fig 16, a and b, show some of the many very striking and deceptive variations which occur in the young. The dotted lines show the distribution of red pigment in the almost clear white carapaces of these two specimens. It gives them a very unusual appearance for the usual color is a uniform dull brown (sometimes purplish) with black claws. These crabs may be found at medium low tide by tearing apart the rocks which have been cemented together by marine worms, mollusks, etc. The carapace of an adult male measured more than eight cm. in width.

Pachycheles holosericus Schmitt

Whatever respect Nature has for proportion and symmetry must have been laid aside while this species was being formed. It is indeed hard to imagine a more awkward looking pair of chelipeds than it possesses. Yet it seems to handle them with some degree of success. They serve as an efficient means of protection of the nature of a lid for the cavities in sponges, stones, etc., in which these crabs are usually



found. The chelipeds are very rough and the organic growth which covers them renders them difficult to detect from the surroundings. Fig. 18 gives a good idea of their form.

P. rudis Stimp.

This has the right claw large.

Herbstia parvifrons Rand

Only three, two adults and one young, of these were taken during the summer, but on a visit to the same beach in November I found them very numerous under stones at medium low tide. All were young, however. Figs. 19 and 20 show the adult male, and young.

Pelia clausa Rath.

Fig. 21 shows an adult with legs extended, a position in which it is seldom found. These sluggish creatures live under stones at low tide and if found at all usually have their legs closely folded to them. The entire animal is covered by a dense coat of organic growth.

Lophopanopeus leucomanus Lock.

This species mentioned in Prof. Hilton's paper is figured herewith. Fig. 22 is an adult female. Fig. 23 is young. This species, though generally of a uniform dull brownish color, shows in the young many variations. The carapace is often marked with blackish or white patches of various patterns. Fig. 24 is illustrative of this. Within the dotted lines was very dark pigment, while the lateral patches were almost white.

Pugettia dalli Rath.

Common in 5-20 fathoms. This species exhibits great variation as is shown by the accompanying figures. Figs. 25 and 26 are adult males. Figs. 27 and 28 are adult females. They vary greatly in color and are generally decorated more or less. Fig. 29 illustrates a specimen which was determined, by the U. S. Museum, as a variety of this species. The carapace of *P. dalli* is always set with stiff recurved hairs, of which there are two rows on the rostral spines and other scattered singly or in groups over the carapace and legs.

Pugettia richii Dana

Fig. 30 represents an adult female. But few of these were taken.

Pinnixa longipes Lock.

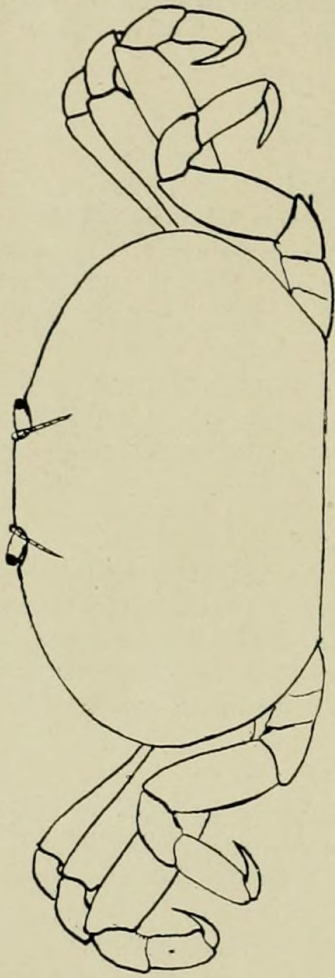
This very odd looking little crab inhabits the sand tubes of *Clymenella*, which are very abundant on the sand bars exposed at low tide near the outlet of Balboa Bay. One or two of the crabs were found in almost every tube examined which contained a worm. The very peculiar form into which this species has developed, as shown in Fig. 31, fits admirably for this commensal life.

Pinnixa littoralis Holmes

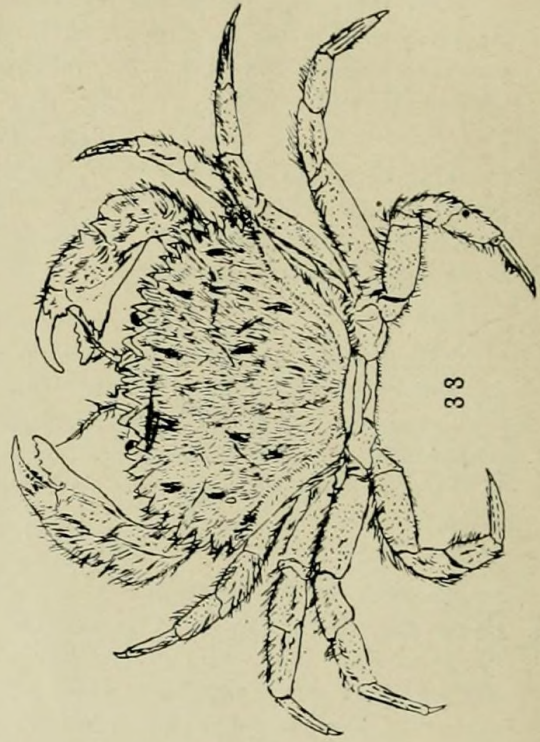
The only specimen was an imperfect one shown in Fig. 32. It was found clinging to the outside of the slime tube of *Cerianthus* in Balboa Bay.

Cancer antennarius Stimp.

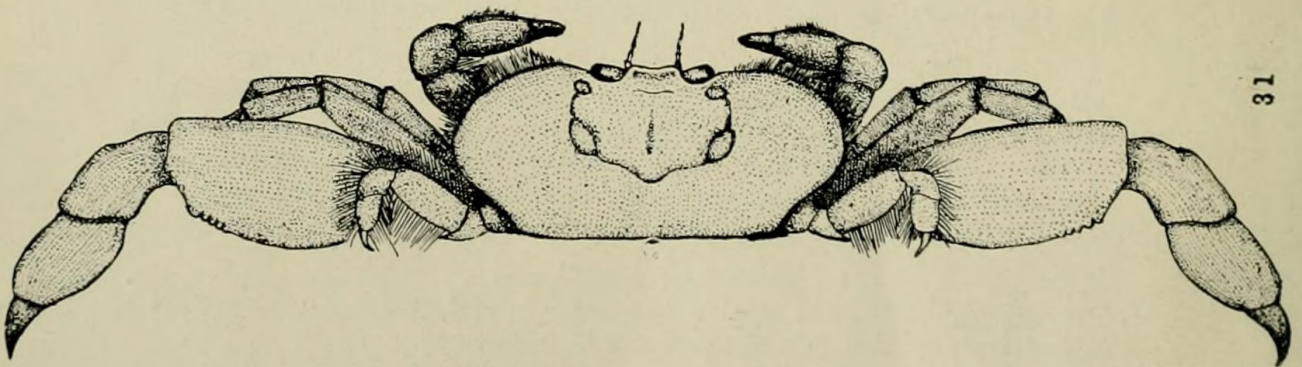
Fig. 33 represents a young specimen, 4 cm. in width. The hairiness of the carapace is in marked contrast to the smooth condition of adults. Drawn by Esther Funk.



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