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Remarks on the Crustacea of the West Coast of North America, with a Catalogue of the Species in the Museum of the California Academy of Sciences.

BY W. N. LOCKINGTON.

GRAPSOIDEA, OR OCYPODIDÆ.

OCYPODIDÆ.

Ocypoda Gaudichaudii? Edwds. & Luc. D'Orbigny's Voy. in Am. Merid. Crust., p. 26, pl. XI, fig. 4.

As I have not seen Edwards' description of this species, I subjoin a short description:

Carapax slightly wider across the centre than in front. Lateral angles of anterior margin very prominent, upper orbital border sinuate; front narrow, eyes large. Right cheliped much larger than the left in both sexes; arm trigonal, with its inferior surface somewhat concave, in consequence of both its margins being slightly raised and beset with spinous tubercles; the upper margin rounded, rugose with rows of small tubercles. Carpus short and stout, with a sharp spine on its anterior border at distal end, and rows of small tubercles above, becoming more prominent and somewhat spinose distally. Manus broad and thin, covered with tubercles exteriorly; a row of saw-like spines along the lower margin continued along the propodal finger, which is cristate, hooked at end, and with several teeth internally. Movable finger similar to fixed, spinose along its upper margin.

Ambulatory limbs flattened; merus with a sort of roll on its upper margin, crossed by tubercular rugæ. Carpi of second, third and fourth pairs setose at distal lower extremity; propodi of the same three pairs setose below; carpus and propodus of fifth pair without hairs; all the dactyli fringed in front with setæ. Third joint of outer maxillipeds narrower, and about half the length of the second joint.

First two segments of male abdomen very short; third and fourth longer, fifth still longer, sixth longest. Fifth segment narrowest; sixth convex on both sides; seventh a small truncate triangle. Fourth and fifth segments of

female abdomen widest; sixth a semi-ellipse, with the small seventh segment inserted in a concavity of the anterior margin.

	♂ M. M.	♀ M. M.
Greatest length of carapax	45	32
Greatest width of carapax	53	37.5
Length of right manus	48	28
Width of right manus	28	15

Several specimens from Magdalena Bay, West Coast Lower California; La Paz, Lower California; and Boca de las Piedras, Sinaloa, Gulf of California.

O. Gaudichaudii was found at Panama by Mr. Sternbergh (Stimpson, Notes on North Amer. Crust., p. 15); and also in the Gulf of Fonseca, Central America, by J. A. McNeil (S. T. Smith, Peabody Acad. Sci., 1869, p. 91).

No. 43. Male and female. Gulf of California. W. J. Fisher.

Genus Gelasimus.

Six species of this genus are included in the collection of Mr W. J. Fisher. One only of these belongs to the section having a narrow front, with the bases of the ocular peduncles close together. This is the *G. princeps* of S. T. Smith.

Another species, having the fourth, fifth and sixth abdominal segments united, is certainly the *G. gibbosus* of the same author. Another I believe to be the *G. brevifrons* of Stimpson.

None of the remaining kinds answer to Stimpson's and Smith's description of *G. panamensis*, so that unless two of them are referable to the Chilian species, *G. macrodactylus* and *G. stenodactylus*, it is fair to suppose they are new species. I have described two of them as new, and the remaining one, with some misgiving, I provisionally refer to *G. stenodactylus*.

Gelasimus princeps. S. T. Smith. Trans. Conn. Acad., 11, 120, plate 11, fig. 10; pl. 111, f. 3–3c.

This species is found in holes under rocks at low tide. The female, as noticed by S. T. Smith, differs considerably from the male, having the carapax less narrowed behind, with granules thickly scattered over the dorsal regions.

Two large specimens measure:

	♂ *Inch.*	♀ *Inch.*
Extreme width of carapax	1.65	1.37
Extreme length of carapax	1.03	.35
Length of large hand	3.00	
Width of large hand	0.95	

Localities—Magdalena and San Bartolomé Bays, West Coast Lower California. W. J. Fisher. Corinto, Nicaragua. J. A. McNeil.

No. 51. Male and female. Magdalena Bay, in spirits. Fisher and Lockington.

G. heteropthalmus. S. T. Smith, *loc. cit.*, 116, pl. 11, f. 6; pl. 111, f. 1–16. Gulf of Fonseca, West Coast Central America.

G. heteropleurus. S. I. Smith, *loc. cit.*, p. 118, pl. 11, f. 7; pl. 111, f. 2–26. Gulf of Fonseca, W. C. Cent. Amer.

G. armatus. S. T. Smith, *loc. cit.*, p. 123, pl. 11, f. 5; pl. 111, f. 4–4*d*. Gulf of Fonseca.

G. ornatus. S. T. Smith, *loc. cit.*, 125, pl. 11, f. 9–9*a*; pl. 111, f. 5–5*c*. W. C. Cent. Amer.

G. brevifrons. Stimpson. Ann. Lyc. Nat. Hist., New York, vol. vii., p. 229. S. T. Smith, *loc. cit.*, 131.

I have not seen Stimpson's description of this species, but from Smith's comparison of its carapax with that of *G. minax*, I conclude that several specimens collected by Mr. Fisher on the West Coast of Lower California, belong to this species. The meros of the larger cheliped is stout, triquetral, and marked on its exterior surface with transverse setose striæ; the carpus has a rounded tooth at its inferior distal end, and the manus is large and heavy, twice as large as the width of the carapax, the palmar portion rounded and smooth, but minutely granular on the outside, and on the inside beset with small tubercles on its more elevated portions. The depression for the carpus is short but very deep, the thin upper edge of manus curving inwards over it. The propodal finger is slightly deflected downwards, and the dactylus curved from the base, the curve increasing towards the tip. The tubercles of the inner edges of the fingers are very indistinct, except one near the centre of the propodal finger, and another close to the tip, which thus appears bifid.

In the smaller cheliped the tips of the fingers are obtuse and rounded, and the outer edges raised, so that they are imperfectly spoon-shaped. The dactylus and propodal finger are almost parallel and near each other, but touch only at the tip, where they have a few setæ.

The meral segments of the ambulatory legs are plicate, like those of the chelipeds.

Following are the dimensions of two large specimens:

	♂ M. M.	♀ M. M.
Length of carapax	17	13
Width of carapax	23	19
Length of larger hand	45	

The fourth, fifth, and sixth segments of the abdomen in the male are not united.

The carapax in this species is considerably narrowed posteriorly, is much less convex than usual in the genus, and of an olive color. The chelipeds of the female closely resemble the smaller cheliped of the male.

No. 85. Male and female. Magdalena Bay, in spirits. Fisher and Lockington.

Gelasimus stenodactylus? Edwds. & Lucas, Voy. dans L'Amer. Mer. Crust., 26 pl. 11, f. 2. M. Edwds. Ann. des Sci. Nat., 3d serie. Zoöl., tome xviii., p. 149. S. T. Smith, *loc. cit.*, 139.

I have not seen the description of this species by Edwds. and Lucas, and therefore question its identity with a single male specimen of a *Gelasimus* with very short fingers that was brought from the West Coast of Lower California by Mr. Fisher.

The fingers of the larger cheliped are very short, the dactylus does not attain the length of the inferior margin of the palm, and the propodal finger is much shorter.

The manus of the smaller cheliped resembles that of *G. gibbosus*. The carapax is highly convex, the anterior lateral angles almost in a line with the front, so that the orbital border is but slightly sinuous; the inferior orbital border dentate, and the lateral margins converging.

	M. M.
Length of carapax	7
Breadth of carapax	13
Length of larger hand	14

Gelasimus rectilatus, nov. sp.?

Among the *Gelasimi* collected by Mr. Fisher on the West Coast of Lower California are two specimens which I cannot refer to either of the broad-fronted species from this coast, described by S. I. Smith and Stimpson, viz: *G. gibbosus*, *G. panamensis* and *G. brevifrons*. As I have not seen the descriptions of *G. macrodactylus* and *G. stenodactylus*, it may possibly be one of these, though neither name seems applicable.

I append a short description:

Front narrower than usual in the broad-fronted section of this genus, not much more than half the width of the buccal frame; carapax tapering posteriorly, the sides forming an almost straight line from the antero-lateral angles to the straight posterior margin; antero-lateral angles much posterior to the line of the front, acute and with considerable lateral projection. Upper orbital border highly sinuous entire, lower orbital border toothed at its outer angle. Outer maxillipeds greatly gibbous, the buccal area separated from the jugal by a distinct depression. Larger cheliped smooth (microscopically granulated), except on inner surface of manus, where there is a line of small tubercles on the inner edge of the propodal finger, and a second on the ridge proceeding upwards from the lower edge of that finger. Fingers tubercular on their inner edges, the largest tubercles that in the centre of the length of each, and that near the tip of propodal finger. Fingers of smaller cheliped parallel, equal, imperfectly spoon-shaped.

Hands of female similar to the smaller cheliped of male. Ambulatory feet

entirely smooth, with a few hairs. Abdomen of male with all the joints distinct, gradually narrowing from the base.

	♂ M. M.	♀ M. M.
Length of carapax	9	8.5
Width of carapax	14	13
Length of larger hand	19	

The larger hand greatly resembles that of the species I have referred to *G. brevifrons*, but the fingers are proportionally shorter, a character which may, however, be due to immaturity. The great differences between this form and *G. brevifrons* are the entire want of the meral plications, and the form of the lateral margins of the carapax, which in the latter continue nearly perpendicular to the front for some distance before they commence to converge.

A single pair is all I have seen of this form. The great convexity of the carapax, and the absence of any coarse granules on the front and anterior part of the branchial regions, distinguish it from *G. panamensis*.

Gelasimus crenulatus. nov. sp.

Carapax highly convex, transverse, antero-lateral angles acute and prominent, slightly posterior to the front; superior orbital margin sinuous, inferior crenulated, the teeth equal in size and with a straight upper edge.

Dorsal surface smooth and shining; median and lateral gastric regions clearly marked off; cardiac distinct; branchial regions prominent, tumid, each divided in two by an indistinct sulcus, parallel with the lateral margins of the carapax.

A broad ridge on the inner edge of the fourth joint of outer maxillipeds, continued downwards along the greater portion of the inner edge of the third joint. Merus of greater cheliped stout, triquetral, marked with numerous short, transverse, not prominent rugæ. Carpus and manus smooth and unarmed, except a few small tubercles on the raised line anterior to the depression for the carpus on the inside of the manus. Propodal finger long and slender, pointed at tip, and with a tubercle in the centre of its length. Dactylus longer than propodal finger, curved, the tip of the curve considerably overpassing that of the latter. Merus of smaller hand slender, triquetral, smooth, carpus smooth, about equal in length to the palm of the manus; fingers equal, parallel, near together, touching at tips, which are pointed.

Hands of female like those of smaller male cheliped. Ambulatory feet smooth and shining, with a few long setæ on the propodi, and more numerous and shorter setæ on the dactyli.

The hand of this species is similar to that of *G. brevifrons*; the gibbous carapax, with its areolations, resembles closely *G. gibbosus*, but the third, fourth and fifth segments of the abdomen are free, instead of anchylosed, as in that species; and the margins of the carapax again resemble those of the species I have referred to *G. brevifrons*, but the convexity of the surface, with the tumid branchial regions, give it a very different appearance.

Unless this is the *G. macrodactylus* of M. Edwards, found on the coast of Chili, it is certainly a new species.

No. 49. Todos Santos Bay, near San Diego, dried. Hy. Hemphill.
No. 50. " " " " " in spirits. Hy. Hemphill.

Gelasimus gibbosus. S. I. Smith. Trans. Conn. Acad., March, 1870, 140; plate 11, f. 11; pl. iv., f. 8.

Numerous specimens from the West Coast of Lower California, principally from San Bartolomé Bay, agree with Smith's description and figure of this species in every particular, except in having the front more suddenly curved forwards. The sub-hepatic regions are thickly setose.

The fingers of the smaller cheliped are equal in length, and twice as long as the broad, stout, and short palmar portion of the manus; they are widely separated at their base, gape throughout their length, and are curved to meet each other at their extremities, which are of a yellowish brown tint. There are a few scattered hairs on the fingers. In the female both chelipeds are exactly like the smaller cheliped of the male.

The depression between the buccal and sub-hepatic (jugal) areas is very distinct; the teeth of the inferior margin of the orbit increase in size and slenderness on the outer portion; and the fourth, fifth and sixth abdominal segments are anchylosed. The prevailing tint of the carapax and limbs (in spirits) is blue, of varying intensity, shading in parts into greenish and into white on the fingers of the chelipeds. Many very small specimens have the fingers of the larger cheliped but little developed, not exceeding the palm in length, and closely approximated to each other.

At first I thought these to be a distinct variety, but now believe them to be the young of the same species, as they agree in every other particular, and some show evidences of a change in the relative proportions of the palm and dactyli as growth progresses.

No. 86. Male and female, in spirits. Bartolomé Bay. Fisher and Lockington.

GECARCINIDÆ.

Cardiosoma crassum.? S. I. Smith, *loc. cit.*, 144; pl. v., f. 5. Gulf of Fonseca, W. C. Cent. Amer. La Paz, Lower California.

A single fine male specimen from the latter locality agrees in most particulars with the figure and description referred to, but the carina of the lateral margin is much less distinct and high; and the larger hand differs in form.

As the specimen exceeds in size any of those measured by Mr. Smith, I think it possible that the differences referred to may be owing to the greater age of the individual; but as it may possibly prove to be a different species, I append a description of the chelipeds.

Merus and carpus as in *C. crassum*; larger hand short and broad, the depth exceeding the length of the superior margin. Propodal finger slender and straight, slightly spoon-shaped at extremity, with a large tooth near the

centre of its length, and several smaller teeth. Distal end of manus forming an angle of about 80° with the superior margin, and of about 60° with the propodal finger, which does not increase greatly in width towards its base. Dactylus slender with a large tooth nearer the base than the tip, which is inflated and spoon-shaped. Inner surface of the hand, towards the margins, armed with scattered tubercles of small size. Upper portion of manus curving inwards posteriorly, the carpus fitting, when the hand is bent, into the hollow between the upper incurved carina and lower thick portion of the manus. The smaller hand is similar to the larger. The stoutness of body of this crustacean is such that the sides of the branchial and hepatic regions are visible from above, and protrude laterally beyond the antero-lateral carina. The male appendages agree with those of *C. crassum*.

	M. M.
Greatest length of carapax, measured along its convexity	100
Greatest width of carapax	101
Length of larger hand to end of propodal finger	127
Length of larger hand from carpus to base of dactylus	40
Greatest width of larger hand	58
Width of carapax between antero-lateral carinæ in front	93

If this should prove, on examination of more specimens, to be a new species, I propose to name it *Cardiosoma latimanus*.

Gecarcinus quadratus. De Saussure. Revue et Mag. de Zoöl., v., 360; pl. xii., f. 2.

The work above referred to is not accessible to me In Mr. S. I. Smith's Notes on American Crustacea, Trans. Conn. Acad., vol. ii., *Cardiosoma quadratum*, Saussure, is referred to. Are they identical ?

The male appendages of *C. quadratum* figured in the plate iv. of the notes cited above differ from those of the *Cardiosoma* described under *C. crassum*.

Mazatlan.

BOSCIADÆ.

Potamocarcinus armatus. M. Edwards. Archiv. du Mus., vii., 174; pl. xiii. Obtained in the North Pacific Exploring Expedition in Lake Nicaragua. Stimpson. Prod. des Animal, evert, p. 46.

GRAPSIDÆ.

15. *Grapsus strigosus*. Latreille. Stimpson, Crust. & Echi., P. S. N. A., says: "Specimens in the Brit. Mus. from Lower California are referred to this species by White." White, Brit. Mus. Cat. Crust., p. 40.

Numerous specimens of a *Grapsus* from Lower California agree in every respect with the remarks upon this species in Dana's Crust. U. S. Ex. Exp., vol. 1, p. 338 ; having the merus of the right posterior legs three-toothed at its distal end, instead of entire, as in *G. pictus*.

No. 52. Mazatlan, dried. Henry Edwards.

No. 53. Locality unknown, dried. Donor unknown.

16. *Grapsus pictus.* De Saussure; Revue et Mag. de Zool., V., 362; Stimpson, Crust. & Echi., P. S. N. A., 26.

Stimpson doubts the identity of De Saussure's *G. pictus* with that of Latreille. I have as yet, among abundant specimens of crustacea from the east and west coast of Lower California, received but one species of *Grapsus*, and this does not agree, either in coloration or in the merus of the posterior legs, with the *G. pictus* described by Dana, Crust. U. S. Ex. Exp , 1, 337.

16. *Pseudograpsus,* } *Oregonensis.* Dana, U. S. Ex. Exp., Crust., 1, 334, pl.
Heterograpsus, } XX, f. 6; Milne Edwards, Melanges Carcinologiques, 157; Stimpson, Proc. Cal. Sci., 1, 38.

No. 54. Three males, dried, S. F. Bay. Lockington.
No. 55. Several specimens, S. F. Bay. *Ibid.*

17. *Pseudograpsus,* } *Nudus.* Dana, U. S. Ex. Exp., Crust., 1, 335, pl. XX,
Heterograpsus, } fig. 7; Milne Edwards, *loc. cit.*, p. 159; Stimpson, *loc. cit.*, 1, 38.

No. 56. Several specimens, S. F. Bay. Lockington.
No. 57. Several specimens, Black Point, S. F. Bay. Lockington.

18. *Goniograpsus pulcher.* nov. sp.

Carapax with numerous transverse lines, not extending to the central regions. Sulcus between gastric and cardiac regions, very distinct. One antero-lateral tooth behind the post-orbital. Sides convergent posteriorly. Perpendicular portion of front about four times as long as high. Outer antennæ exsert. Outer maxillipeds widely separated, narrow. Chelipeds subequal, merus triquetal, with the upper margin rounded, lower anterior ditto, produced into a wing-like keel, armed with about nine teeth on its edge; posterior margin toothed. Two or three teeth on the anterior edge of the ischium. Carpus with three teeth on its upper anterior angle. Manus broad and thin, smooth exteriorly, tubercular interiorly. Dactylus tubercular above. Upper surfaces of the merus crossed by transverse raised lines similar to those of the carapax. Carpus crossed, also, by rugæ, which show a tendency to split up into tubercles. Tubercles of manus arranged in longitudinal rows along its upper margin. Ambulatory legs, with the distal end of merus three-toothed, the upper tooth sharp, the two others long and rounded lobes; terminal joints with scattered hairs; dactyli spinose. Abdomen of the male with the two first joints very short, the third joint widest, and with strongly convex sides; remaining joints regularly diminishing in width, with a slight convexity. Color citrine, with a variable reticulation of dark brown, the ground becoming yellowish upon the legs. Chelipeds bright red.

Several specimens of both sexes from Magdalena Bay, west coast, Lower California.

The measurements of two average-sized specimens are as follows:

	♂	♀
Greatest length of carapax	40	30
Greatest width of ditto	43	34

The branchial regions are much elevated in old specimens.

I have preferred to employ Dana's name of *Goniograpsus* in preference to Randall's *Pachygrapsus*, as the generic characters given by the former author are the more precise and definite.

This species appears to be very near to the *Goniopsis cruentatus* of De Haan, but that species has the hand, carpus, and dactylus small spinulous above.

No. 58. Magdalena Bay, in spirits. W. J. Fisher.

19. *Pachygrapsus* (*Goiograpsus*) *crassipes*. Randall, Jour. Acad. Nat. Sci., Phil., VIII, 137; Stimpson, Crust. & Echi., P. S. N. A., 27.

No. 59. Several specimens, S. F. Bay. W. N. Lockington.

20. *Goniograpsus* (*Pachygrapsus*) *transversus*. Gibbes, Amer. Asso. Adv. Sci., 1850, p. 181; Stimpson, Ann. Lyc. Nat. Hist., N. Y., vol. VII, p. 64; S. I. Smith, Rep. Peabody Acad. Sci., 1869, p. 91.

The last named writer mentions specimens from Havana, the Gulf of Fonseca, and other points of the Pacific coast.

I have not seen either the species or a description of it, and therefore cannot be certain that the species just described may not be identical with it; but if so, the name *transversus* is very inapplicable.

21. *Glyptograpsus impressus*. S. I. Smith, Trans. Conn. Acad., vol. II, p. 154. Acajutla, west coast, Central America.

32. *Goniopsis cruentatus*. De Haven; S. I. Smith, Rep. Peabody Acad. Sci., 1869, 91.

23. *Sesarma sulcata*. S. I. Smith, Trans. Conn. Acad., *loc. cit.* p. 156. Corinto, W. coast Nicaragua.

24. *Sesarma occidentalis*. S. I. Smith, *loc. cit.* p 158. Acajutla, W. coast Central America.

25. *Sesarma augusta*. S. I. Smith, *loc. cit.* p. 159. Pearl Islands, Bay of Panama.

26. *Aratus Pisoni?* M. Edwds, Ann. Sci. Nat. 3d ser., 1853, tome XX, p. 187. Hist. Nat. des Crust. II, p. 76, pl. 19, f. 45.

"A specimen from Corinto, Nicaragua, appears to belong to this species, but it has not been carefully compared with east coast specimens." S. I. Smith, Rep. Peabody Acad. Sci., 1869, p. 92.

GONOPLACIDÆ.

27. *Prionoplax ciliatus*. S. I. Smith. Panama.

Prionoplax spinicarpus. M. Edwds., Ann. des Sci. Nat., 3d series, XVIII, 161. *Ibid.* Archives du Mus. d'Hist. Nat., VII, 167, Pl. VI, f. 3. Stimpson, Notes on N. Amer. Crust., 13.

28. *Euryplax politus.* S. I. Smith.
Panama.

29. *Glyptoplax pugnax.* S. I. Smith.
Panama.

30. *Eucrate Californiensis.* Lockington, Proc. Cal. Acad. Sci., Feb. 7, 1876.
No. 61. San Diego, (Hy. Hemphill), dried.
This species is certainly neither of the preceding, but appears to closely resemble Stimpson's *Speocarcinus Carolinensis.*

PINNOTHERIDÆ.

31. *Pinnotheres faba.* Dana, U. S. Ex. Exp., 1, 381, pl. 24, fig. 4. *Pinnixa faba.* Stimpson, Crust. and Echi., P. S. N. A., p. 30.
Found in the large Lutraria of the Oregon coast.

32. *Pinnotheres margarita.* S. I. Smith, Trans. Com. Acad., Vol. II, p. 166, Verrill, Amer. Nat., III, 245.
Two females of this species was brought by Mr. W. J. Fisher from Mulege Bay, Gulf of California.
"Everywhere covered, except the dactylus of the right ambulatory leg of of the second pair in the female, and tips of the others in both sexes with a very short and close, clay-colored pubescence, much like a uniform coating of mud."
Found in the pearl oyster, *Margaritophora fimbriata.*
A new species of *Pontonia* (*P. margarita,* Lockington,) is mentioned by Mr. Fisher as having been taken from *Margaritana margaritifera,* at Port Escondido, Gulf of California, but as Mr. Fisher's collections were almost exclusively marine, it is not unlikely that the above mentioned mollusk was the one he meant to indicate.

33. *Pinnotheres lithodomi.* S. I. Smith, Trans. Conn. Acad., *loc. cit.*
From *Lithodomus aristatus,* Pearl Islands, Panama.

34. *Pinnotheres angelica.* nov. sp.

Carapax smooth and shining, soft and slippery, without sutures, (when undried) somewhat transverse. External maxillipeds widely divaricate posteriorly; the third joint shaped like a boomerang, the external convex margin more curved than the concave internal margin; distal extremity rounded and ciliate on its internal edge, terminal joints ciliate. Chelipeds smooth, cylindrical, save that the manus is somewhat compressed distally; dactylus short, about half as long as the posterior part of the propodus, and equal in length to the propodal finger; both fingers hooked at the end, without teeth on their

internal borders. Ambulatory legs slender, cylindrical, smooth, dactylus of first pair short, that of second pair about as long as the propodus; those of third and fourth pairs equal in size, rather larger than that of first pair and about half as long as the propodi; that of fourth pair ciliate on its internal margin. Abdomen very large, wider than the carapax and covering the maxillipeds and even the eyes, when folded.

Several specimens, all females, were collected at Angeles Bay, Gulf of California, September, 1876, "in oysters."

	♂ M. M.	♀ M. M.
Length of carapax	11.5	9
Width of carapax	15	12
Breadth of abdomen	16.5	13.5

Many of the specimens are loaded with ova.

35. *Fabia subquadrata.* Dana, U. S. Ex. Exp., I, 882, pl. 24, fig 5. Stimpson, Crust. & Echi. P. S. N. A., 30.

Puget Sound. Farallone Islands.

No. 83. In spirits, from mantle of *Pachydesma crassitelloides.* San Diego, (Hy. Hemphill.)

36. *Dissodactylus nitidus.* S. I. Smith, Trans. Conn. Acad. Sci., 1869, 173.

Panama. Gulf of California. (Fisher.)

Two females from the latter locality have the peculiar bifurcate dactyli, from which Mr. S. I. Smith has named the genus *Dissodactylus,* and probably belong to *D. nitidus,* of which that author describes the male. The carapax is firm, somewhat wider at the lateral angles than posteriorly; convex in front and at the margins, without any upturned border along the antero-lateral margin, but with a short fissure extending obliquely inwards immediately anterior to the lateral angle. The posterior margin has an upturned border. There is no pubescent tuft on the inferior edge of the propodal finger. The ambulatory legs are as in the male. The abdomen resembles that of *Pinnotheres,* the terminal article reaching and partly covering the buccal frame. The prevailing color is dark purplish brown, with spots of white upon the carapax, and a ring of white at each joint of the limbs. The dactyli are white.

37. *Pinnixa ? nitida.* nov. sp.

Male. Carapax exceedingly transverse, smooth, shining, color in spirits, bright orange; all the limbs smooth and shining, without pubescence, of a straw yellow color. Maxillipeds very small and triangular, closely fitted to the buccal area, smooth and shining, as is also the sternum. Abdomen narrow at base, second segment rapidly widening, third widest, fourth, fifth and sixth tapering rapidly, seventh almost as long as wide, triangular, with the apex rounded. The abdomen does not cover more than one-half the sternal area. Chelipeds shorter than either second or third pair, the manus broad, with two setose ridges on its anterior surface, fingers short, hooked, toothless, movable finger oblique. Three last joints of ambulatory limbs flattened, carpus broad at distal extremity, scarcely longer than wide; propodus nearly twice as long as wide; dactylus slender, cylindrical, white, ending in a sharp yellow claw. Margins of last three joints setose, second pair (first ambulatory pair)

longer than the third, which are themselves longer than the chelipeds, fourth pair shorter, fifth very short.

	M. M.
Width of carapax	11
Length of carapax	5

Female. Carapax broadly transverse, smooth, shining, margins curved, angles rounded. Outer maxillipeds much larger than in the male just described, parallel, tomentose. Chelipeds shorter than fourth pair, hand short and rounded, wider than thick, tomentose, propodal finger short, hooked, dactylus oblique, hooked, toothless. Merus, carpus and propodus of all the ambulatory limbs greatly compressed; propodus as long as wide; carpus nearly twice as long as wide; dactylus short, cylindrical, ending in a sharp claw. Abdomen broad, covering the whole sternum, and fringed with long hairs round its margin. The pubescence of the chelipeds is continued along the fingers nearly to their tips, and is found also on the external portions of the carpus and flattened joints of the ambulatory limbs, as well as on the hepatic region. The color, where free from pubescence, is a brownish yellow (in spirits).

	M. M.
Length of carapax	7.5
Width of carapax	14

A single specimen of each the two crustaceans just described was collected on the same day at the same locality, namely, Angeles Bay, Gulf of California, and the two were placed by the collector (Mr. W. J. Fisher) in the same phial. Had it not been for this, I should certainly have never linked together two specimens so distinct in the relative proportions of the limbs themselves, as well as of the joints of those limbs; one covered in many places with an abundant pubescence, the other smooth and shining above and below. The proportions of the ambulatory limbs in the female agree with the genus *Pinnixa*, but in the male the increase of size is transferred to the second pair. Should these crustacea prove to be distinct the female should be *Pinnixa tomentosa*, while the male must be placed in some other genus.

I have no means of ascertaining upon what species of invertebrate animal these crustacea resided as commensals.

38. *Pinnixa longipes.* (*Tubicola longipes.* Lockington, Proc. Cal. Acad. Sci., April 17, 1876.)

This species should properly be placed in the genus *Pinnixa*. It possesses the characters of transverse carapax, and elongated fourth pair, in an extraordinary degree.

No. 60. Tomales Bay. (Lockington.) in spirits.

When I wrote the description of this species, I was not aware that any species of Pinnothere had previously been found quartered upon a worm, but I have since found that Stimpson (Notes on N. Amer. Crust., 21, 23) mentions two species, both belonging to this genus, that live in similar localities.

These species are, *P. cylindrica*, which inhabits the tube of the *Chætopterus*, of South Carolina, and *P. lævigata*, which lives with the lobworm, *Arenicula cristata*, in its hole, not lined by any tube, in the sand.

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