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# CONTENTS

OF THE

## SEVENTH VOLUME.

BY THOMAS BLAND.

	PAGE
REMARKS on certain species of North American Helicidæ. . . . .	26, 115, 420
ON the Geographical Distribution of the Genera and Species of Land Shells of the West India Islands, and a Catalogue of the Species of each Island . . . . .	335

BY THOMAS BLAND AND J. G. COOPER.

NOTICE of Land and Fresh-water Shells, collected by Dr. J. G. Cooper in the Rocky Mountains, etc., in 1860 . . . . .	362
--	-----

BY ARTHUR EDWARDS.

NOTE on the Reproduction of Individuals of the Genus Actinia . . . . .	19
ON the Microscopic Forms of the Harbor of Charleston, South Carolina . . . . .	103

BY D. G. ELLIOT.

DESCRIPTION of a new species of Eupsychortyx . . . . .	106
ON the Occurrence, within the limits of the United States, of Barrow's Golden-Eye, BUCEPHALA ISLANDICA . . . . .	449

BY THEODORE GILL.

PRODRONUS descriptionis subfamilie Gobinarum squamis cycloideis piscium cl. W. Stimpsoni in Mare Pacifico acquisitorum . . . . .	12
PRODRONUS descriptionis familie Gobioidarum duorum generum novorum . . . . .	16
DESCRIPTION of a new species of Pimelodinae from Canada . . . . .	39
DESCRIPTIONS of two new species of Terrestrial Grapsoid Crustaceans from the West Indies . . . . .	42
DESCRIPTION of a New Generic Form of Gobinae from the Amazon River . . . . .	45
ANALYTICAL Synopsis of the Order SQUALI; and Revision of the Nomenclature of the Genera . . . . .	367*

BY JOHN W. GREENE, M.D.

DESCRIPTIONS of several New Hymenopterous Insects from the Northwest Coast of America . . . . .	11
REVIEW of the American Bombidæ, together with a description of several Species heretofore undescribed, being a Synopsis of the Species of this family of Hymenopterous Insects thus far known to inhabit North America . . . . .	168

	PAGE
BY GEORGE N. LAWRENCE.	
DESCRIPTIONS of three new species of Humming Birds of the Genera HELIOMASTER, AMAZILIA, and MELLISUGA . . . . .	107
DESCRIPTION of a new species of Bird of the Genus PHAETON, also of a New Species of Humming Bird of the Genus Heliopædica . . . . .	142
NOTES on some Cuban Birds, with Descriptions of New Species . . . . .	247
DESCRIPTIONS of new species of Birds of the Genera Myiarchus and Phlogopsis . . . . .	284
CATALOGUE of a Collection of Birds made in New Grenada by James McLeannan, Esq., of New York; with Notes and Descriptions of New Species . . . . .	288, 315, 461
DESCRIPTIONS of three new species of Birds . . . . .	308
DESCRIPTIONS of six new species of Birds of the Families CHARADRIÆ, TROCHILIDÆ, and CAPRIMULGIDÆ . . . . .	455
BY PROF. O. W. MORRIS.	
A COMPARISON of the Climate, etc., of New York and Kansas . . . . .	22
BY W. NEWCOMB, M.D.	
DESCRIPTIONS of new species of the Genera ACHATINELLA and PUPA . . . . .	145
DESCRIPTION of a new species of HELIX from Bougainville Island . . . . .	283
BY TEMPLE PRIME.	
LIST of the known species of PISIDIUM, with their Synonymy . . . . .	94
DESCRIPTION of two new species of the Genus BATISSA, with Notes on that Genus . . . . .	112
NOTES on the CYRENA SALMACIDA and CYRENELLA AMERICANA of Morelet . . . . .	314
DESCRIPTIONS of two new species of Mollusca of the Genus Corbicula . . . . .	480
DESCRIPTION of new species of Mollusca of the Genus Venus . . . . .	482
BY REV. J. ROWELL.	
DESCRIPTION of a new species of PUPA from California . . . . .	287
BY SANDERSON SMITH.	
ON the Mollusca of Peconic and Gardiner's Bays, Long Island . . . . .	147
BY R. P. STEVENS.	
REMARKS on the Taconic System . . . . .	276
ON the Extension of the Carboniferous System of the United States, so as to include all true Coals . . . . .	414
BY W. STIMPSON.	
NOTES on North American Crustacea . . . . .	49, 176
BY GEORGE SUCKLEY, M.D.	
DESCRIPTIONS of several new species of SALMONIDÆ from the North-West Coast of America . . . . .	1
NOTICES of certain new species of North American SALMONIDÆ, chiefly in the collection of the North-West Boundary Commission; collected by Dr. C. B. R. Kennerly, Naturalist to the Commission. . . . .	306

XI.—Notes on North American CRUSTACEA, No. 1.

By WILLIAM STIMPSON, Corresponding Member.

Read February 28th, 1859.

[The materials used in the preparation of the following paper have been chiefly supplied from the Museum of the Smithsonian Institution. A large number of interesting species were contributed by Mr. Theo. Gill, who collected them in the West Indies, under the auspices of Mr. D. J. Steward.]

MAIOIDEA.

**Loxorynchus grandis.**

*Loxorynchus grandis*, Stimpson; Crust. and Echin. Pacific Coast of N. Am., p. 12; pl. xix. f. 1, and xxii. f. 1.

This is one of the largest crabs known, as it appears from a specimen collected by Dr. Kennerly at San Diego, California, where it is called "Sheep-Crab," from the woolly pubescence with which it is covered. The carapax in this specimen measures 7.34 inches in length and 5.85 in breadth.

**Othonia aculeata.**

*Hyas aculeata*, Gibbes; Proc. Am. Assoc., 1850, p. 171.

This species is not uncommon on the Florida Coast.

**Epialtus affinis**, nov. sp.

*Epialtus bituberculatus*, Gibbes; loc. cit. 173. (non M.-Edw.)

This species differs from *E. bituberculatus* in its greater

breadth; the proportion of the breadth to the length in the carapax being 1:1.24. It approaches more closely to *E. brasiliensis*, Dana; but differs in its longer rostrum, and in having two small teeth on the lower edge of the penult joint in the fifth pair of feet. The length of the carapax in our specimen is 0.52; breadth, 0.42 in.

Found at Indian River, Florida, by G. Wurdemann, Esq.

## CANCROIDEA.

### **Cancer borealis.**

*Cancer irroratus*, Gould; Inv. Mass. p. 322.

Stimpson; Mar. Inv. Gr. Manan, p. 59.

*Platycarcinus irroratus*, Gibbes; loc. cit. 176.

This species is regarded by Say as the female of his *C. irroratus*; and subsequent carcinological authors have thought proper to retain his name for this rather than for the more common species, *C. sayi* of Gould, which Say regarded as the male. But the rules of nomenclature seem to require that the species to which his figure, and mainly his description correspond, should receive the name which he applied by mistake to both. The reason given by Dr. Gould for following the opposite course, viz. that Bell has figured this species as *C. irroratus*, will not hold good, since Bell's figure represents a Chilian species, *C. plebeius* of Poeppig.

*C. borealis* inhabits the rocks near low water mark, in the clear waters of ocean shores. It never occurs in muddy or sandy bays and harbors where *C. irroratus* abounds. It is a northern species, not found south of Cape Cod, although extending to the northward at least as far as Nova Scotia.

**Actaea setiger.**

*Xantho setiger*, Milne-Edwards; Hist. Nat. des Crust., i. 390.

Specimens from the Florida Keys are in the Museum of the Smithsonian Institution.

**Actaea crosa**, nov. sp.

Carapax convex anteriorly, flattened behind. The whole surface of the body and feet above and below has a deeply eroded or vermiculated appearance, being filled with small cavities, irregular in shape but nearly uniform in size. The margins of the cavities are fringed with short pubescence. The carapax is areolated, but the divisions, with the exception of the larger ones, are rendered indistinct by the character of the surface. The anterior side of the carapax is gibbous over the front, and somewhat contracted over the eyes. The two median lobes of the front are conspicuously prominent, forming rounded teeth projecting downward. Lobes of the antero-lateral margin indistinct. The surface of the ischium-joint of the external maxillipeds is marked with one principal eroded channel parallel to its inner margin, and extending the whole length of the joint. There is a notch on the anterior margin of the meros-joint of the same maxillipeds. Hands short and broad, with their outer surface divided by furrows into longitudinal tuberculated ridges; the tubercles themselves are eroded and granulated; fingers short, grooved, and 4—5-toothed within. Ambulatory feet with hairy edges; dactyli pubescent. On the first three or four joints of the abdomen the eroded cavities are transverse, and extend throughout the width of the joint. The dimensions of the carapax in a male are: length, 0.73; breadth, 1.01 inch.

This species must be closely allied to *Xantho vermiculatus*, M.-Edw.

It inhabits the coral-reefs of Florida.

**Xanthodius**, nov. gen.

Carapax perlatus, postice planatus, antice vix declivis; margine antero-laterali leviter quadrilobato. Palatum colliculo instructum ad marginem anticum non productum. Antennæ articulus basalis fronti v. processui frontis junctus; pars mobilis hiatum orbitæ occupans. Maxillipedum externorum merus latus, brevis, angulo externo subdilatus, margine antico rectus. Chelipedum digiti apicibus excavati. Abdominis maris segmenta tertium, quartum, quintumque coalita.

This genus differs from *Chlorodius* in the ridge on palate or endostome. It is allied to *Xantho* and *Ozius* in the shape of the carapax.

**Xanthodius sternberghii**, nov. sp.

Carapax depressed, dark-reddish, distinctly though not prominently areolated; surface rugulose or as if eroded anteriorly. Antero-lateral margin somewhat acute, four-parted, teeth little prominent. At the anterior tooth the margin is blunt and rugulose. Front a little projecting, somewhat sinuous, emarginated at the middle; its lateral lobes are deflected to meet the basal joint of the antennæ. Orbits small, rounded. Chelipeds not very stout; upper margins of carpus and hand rugulose; fingers black, toothed within, and with a spoon-shaped cavity at their apices not circumscribed within. Ambulatory feet nearly smooth; dactyli tomentose. Abdomen of male narrow. Dimensions of the carapax in a male: length, 0.62; breadth, 1.05 inch.

Found at Panama by J. H. Sternbergh, Esq.

**Chlorodius longimanus**.

*Chlorodius longimanus*, M.-Edw.; Hist. Nat. des Crust. i. 401.

Florida Keys.

**Menippe nodifrons**, nov. sp.

Carapax narrower than is usual in the genus; upper surface areolate and somewhat nodose anteriorly. There are six knobs on the gastric region;—four in a transverse row across the middle, and two in front. There are also two knobs just above the median frontal lobes, and a large one on the hepatic region. There is a short blunt ridge on the anterior part of the branchial region, curving outward and backward to the lateral tooth. The surface between the knobs is minutely punctate. Front considerably projecting, and deeply emarginated at the middle, forming two prominent but thick and rounded teeth, between which and the angle of the orbit there are on either side two other teeth, small and tuberculiform. There is a prominent blunt tooth at either extremity of the inferior margin of the orbit; the outer one having another smaller one above it, belonging to the superior margin. Antero-lateral margin armed with four teeth besides the angle of the orbit; the teeth prominent but blunt at the tips, and not sharp-edged as in *M. mercenaria* (*Cancer mercenaria*, SAY). Chelipeds robust, microscopically granulated above. Ambulatory feet not compressed; the last three joints sparsely hairy on the sides, but densely so on the upper and lower surfaces. Abdomen like that of *M. mercenaria*. Dimensions of carap. in the male; length, 1.32; breadth, 1.90 inch.

This fine species has much the aspect of a *Xantho*. It was found at Indian River, on the coast of Florida, by G. Wurde-mann, Esq. Mus. Smithsonian.

**Menippe obtusa**, nov. sp.

Carapax smooth and even, flattened posteriorly. Antero-lateral margins armed with four teeth resembling those of *M. mercenaria* in their proportions, but much less prominent. Front with a single tubercle only on either side of the two median lobes. Frontal region somewhat channelled along the margin above the teeth. There are two or three submarginal tubercles along the inferior side of the orbit, and a few scattered granules on the subhepatic regions. The meros-joint of the outer maxillipeds is as long as broad, pentagonal, with the antero-

exterior side longest. Chelipeds very unequal in size; larger one robust; apex of carpus obtuse or truncate, not tooth-like as in allied species. The larger hand is armed with a tooth or lobe within at the base of the superior edge, and on the inner surface, near the insertion of the dactylus, there is an oval, obliquely-striated area, on which the striæ are sharp and parallel, exactly resembling those of a file. In the smaller hand, the corresponding area is covered with utriculiform granules. Ambulatory feet smooth and glossy; the last two joints only being hairy. Abdomen as in the allied species. Color of preserved specimen, reddish, mottled or banded. Dimensions of carap. in ♀: length, 1·2; greatest breadth, at the penult antero-lateral tooth, 1·7 inch.

This species has much resemblance to *M. mercenaria* in general appearance, but is easily distinguished by the smaller number of frontal teeth, and the striated area on the greater hand.

It was found at Panama by J. H. Sternbergh, Esq.

### **Panopeus.**

The genus *Panopeus* seems to be in some degree intermediate between *Xantho* and *Pilumnus*. In our common species, *P. Herbstii*, there is a well-marked groove on the palate, indicating the efferent passage, although this is not defined by a sharply elevated ridge. The genus is peculiar to America. Certain East Indian forms which have been referred to it, prove upon examination to be generically distinct, and form a separate group, for which I have proposed the name *Heteropanope*.

The genus now contains ten species;—*P. crenatus*, M.-Edw. et Lucas, *P. lævis*, Dana, *P. chilensis*, M.-E. et L., from the western coasts of South America; and *P. herbstii*, M.-Edw., *P. texanus*, Stm., *P. wurdemannii*, Gibbes, *P. harrisii*, Stm., *P. occidentalis*, De Saussure, *P. serratus*, Des., and *P. americanus*, Des., from the eastern coasts of the United States, and the Antilles.

**Panopeus texanus**, nov. sp.

Closely allied to *P. herbstii*, for which it would be taken upon a hasty examination. It exhibits, however, the following distinctive characters, which are found to be constant in twenty or more specimens. The carapax is longer in proportion, and more convex; and the surface is smooth or less granulous, but generally pubescent. Hiatus of the external angle of the orbit small, being a deep notch or fissure rather than an opening. First and second antero-lateral teeth of very slight prominence. Hands large and smooth in the male, with the dactylus destitute of the strong basal tooth, which is always present in *P. herbstii* of every age. There is, also, no tooth on the hand between the bases of the fingers. The right hand is always the larger. The fingers of the smaller hand are long and considerably curved. The color of the fingers is always white or very pale brown in the male, the movable one being generally darker than the other;—they are sometimes blackish in the female. Ambulatory feet long. The abdomen of the male is rather broad and convex, with the terminal joint transverse and broader than the penult;—thus showing a marked difference from that of *P. herbstii*. The dimensions of carap. of ♂ are,—length, 0.76; breadth, 0.97 inch. Dimensions of carapax of *P. herbstii* ♂;—length, 0.90; breadth, 1.25 in.

Found at St. Joseph's Island, Texas, by Gustavus Wurde-  
mann, Esq.

**Panopeus harrisii**.

*Pilumnus Harrisii*, Gould; Inv. Mass. 326.

This species is smaller than *P. herbstii*. The carapax is more quadrilateral, and the upper surface transversely ridged or lineated. An important character is found in the canalculated edge of the front, which thus seems bimarginate. The

hands are longitudinally ridged above, and on the outer surface. The external hiatus of the orbit is very small, but nevertheless distinct.

This species is remote from *Pilumnus* in the want of a ridge on the palate, as well as in the presence of the external hiatus of the orbit. Gibbes' description of his *P. wurdemanni* agrees pretty nearly with it.

It has as yet been found only in the brackish waters of Charles River, Mass., near its mouth.

### **Eurytium**, nov. gen.

This genus is proposed for the reception of the *Panopeus limosus* of Say; which is sufficiently distinct from the typical *Panopei* in its broad carapax, strong palatal ridge, and in the fact that the male verges pass under the margin of the sternum to reach the abdominal appendages, thus showing a relation to the *Ocypodoidea*.

### **Eurytium limosum.**

*Cancer limosus*, Say; Jour. A. N. S., Philad., i. 446.

*Panopeus limosus*, M.-Edw.; Hist. Nat. des Crust., i. 404.

Common on the coast of South Carolina, in mud at low water mark. Specimens brought from Key Biscayne, Fla., by Mr. Wurdemann are larger, broader, and more highly colored than the Carolinian specimens.

### **Eriphia squamata**, nov. sp.

Closely allied to *E. gonagra* of the Gulf of Mexico, from which it can scarcely be distinguished by any characters de-

rived from the carapax; but the tubercles of the hands are larger, and more crowded, projecting like scales, and ciliated beneath.

Found at Mazatlan by Capt. C. P. Stone.

### **Lupa bellicosa** (Sloat, MSS.).

Agrees with *L. hastata* in almost every character, except that the last two joints of the abdomen in the male are broader and more flattened.

Taken at Guaymas, in the Gulf of California, by Capt. C. P. Stone. It is the first of the *Portunidae* discovered on our Western coast.

### **Lupa Gibbesii**, nov. sp.

This species is intermediate between *L. sayi* and *L. spinimana*. In the characters of the antero-lateral margin, it resembles *L. sayi*, the lateral spine being at least as long as the space occupied by the four teeth in front of it. Frontal margin with four teeth nearly as prominent as in *L. spinimana*;—the sub-median tooth is, however, more prominent than in that species, though much less so than in *L. sayi*. Surface of the carapax granulated and pubescent. There are three or four naked transverse ridges or raised lines, two of which arise at the lateral spines. Chelipeds and abdomen of the male as in *L. spinimana*. Dimensions of carapax in the female;—length, 1; breadth, spines included, 2.18 inch.

Found on the coast of South Carolina, by Capt. Kurtz, and at St. Augustine, Florida, by Mr. Dorman.

### **Lupa spinimana**.

*Lupa spinimana*, Leach; M-Edw.; Hist. Nat. des Crust., i., 452.  
Dana; U. S. Expl. Exped., i. 273.

Found at Folly Island, on the coast of South Carolina, by Capt. Kurtz and myself.

**Amphitrite depressifrons**, nov. sp.

Carapax convex posteriorly and about the middle, but depressed toward the frontal and antero-lateral margins. Proportion of length to breadth, 1 : 1.49. Surface in part minutely scabrous and pubescent. Antero-lateral margin ciliated and 9-toothed, including the angle of the orbit; teeth nearly equal, the posterior one no larger than that in front of it. Median lobe of front 4-toothed, teeth about equal. Superior margin of orbit with two conspicuous fissures. The joints of the chelipeds are sharply triangular or prismatic, pubescent; meros 5-spined and ciliated in front, and armed with a single small tooth at the outer apex; carpus slender, with one long, very slender and sharp spine at the summit, and sometimes a smaller spine on the outer side; hand with a prominent superior crest, and armed with two small spines, one near the base, and one near the finger; surface of the hand minutely scabrous; dactylus ciliated above. Ambulatory feet slender; those of the first pair ciliated below; those of the second and third pairs smooth; last pair considerably shorter than the third. Abdomen of the male subtriangular, with the lateral margins somewhat sinuous. The color in our specimens is entirely obliterated. The species is described from male individuals, probably young, the dimensions of the carapax in the largest being,—length, 0.79; breadth, 1.18 inch.

It was found on the coast of South Carolina, by Capt. Kurtz, and there are specimens from the Florida Keys in the Smithsonian Museum.

## OCYPODOIDEA.

**Specocarcinus**, nov. gen.

Carapax longitudinaliter utrinque declivis, transversim fere planus, retrorsum vix angustatus. Regio faciei dimidiam carapacis latitudinis paulo superans. Margo antero-lateralis brevis, dentatus. Oculi sat breves, corneis parvis. Orbitæ antennæque eis *Panopei* fere similes. Palatum colliculis carens. Maxillipedes externi valde hiantes, endogna-

thi mero sat brevi, palpo endarthroidco. Chelipedes breves, crassi. Pedes ambulatorii graciles, læves, dactylis depressis, ciliatis. Vergulæ sternalis. Abdomen maris ei *Panopei* simile sed ad basin sterno multo angustius, et segmentis tertio ad quinto coalitis.

This genus seems to be nearest allied to *Eucrate*, as described by Dana, from which it is distinguished by the greater breadth of the sternum posteriorly, and by the gaping of the maxillipeds.

### **Speocarcinus carolinensis.**

PLATE I; figs. 1, 2, and 3.

Body depressed, subcylindrical. Carapax above nearly smooth; surface punctate, obsolete granulated toward the margins; gastric region well defined; genital region depressed. Antero-lateral margin five-toothed, including angle of orbit; second tooth not distinctly separated from the first; last three teeth sharp and moderately prominent. Front about one-fourth as wide as the carapax, sufficiently prominent, straight, and emarginate at the middle. Eye-peduncles depressed and pubescent above. Chelipeds robust, nearly smooth; a strong sharp tooth or spine near summit of meros; inner margin of carpus granulated, with a blunt tooth at inner angle; outer surface of hand glabrous, microscopically granulated. Tarsi sharp; those of last pair curved upward. Length of carapax in the male, 0.88; breadth 1.09 inch.

This crab lives in the subterranean galleries excavated in the mud at low water mark by the *Squilla*, *Callinassa*, and other Crustacea, or by large worms. It is found in the harbor of Charleston, S. C.

### **Prionoplax spinicarpus.**

*Prionoplax spinicarpus*, M.-Edw.; Ann. des Sc. Nat., 3me. Serie, Zool., xviii. 161; Archives du Mus. d'Hist. Nat., vii. 167, pl. xi., f. 3.

Milne-Edwards gives, with a doubt, China as the habitat of

this interesting Crustacean. Our specimens, however, were found at Panama, by Mr. Sternbergh, so that its geographical range must be on the tropical parts of the western shores of America.

An examination of the alcoholic specimens, in the Smithsonian Museum, enables us to determine that in this genus the male verges arise from the coxæ of the posterior pair of feet, and are lodged and concealed in the chinks separating the sternal pieces of the sixth and seventh thoracic segments. There is no ridge upon the palate or endostome.

### **Euryplax**, nov. gen.

Carapax transverse, broad; antero-lateral margin very short, dentated; facial region of less width than the carapax; front nearly half as broad as the carapax; ocular peduncles of moderate length; external antennæ excluded from the orbit by the internal suborbital lobe, which joins the front. External maxillipeds with the palpus of the endognath articulated to the short meros at its truncated inner angle, as in the Cancroids. Palate with a distinct ridge on each side, defining the efferent channel. Chelipeds large and thick; a circular pit on the front side of the meros-joint near its extremity. Ambulatory feet compressed; dactyli of posterior pair short and compressed. Verges of the male arising from the coxæ of the posterior feet, and passing to the abdominal appendages through canals in the sternum. Basal joints of the abdomen almost entirely covering the seventh joint of the sternum, a portion of which, however, is exposed to view on each side at the lateral sinuses of the abdomen, which occur between its second and third joints. None of the abdominal segments are soldered together.

This genus differs from *Prionoplax*, *Pseudorhombila*, etc., in the characters of the orbits.

### **Euryplax nitidus**, nov. sp.

Carapax smooth and shining, convex in a longitudinal sense. Pro-

portion of length to breadth, 1 : 1.65. Antero-lateral margin less than half as long as the postero-lateral, and armed with three strong teeth, including the angle of the orbit. Postero-lateral margin somewhat concave. Front deeply notched on each side at the insertions of the antennæ; the inter-antennal margin straight and smooth, with no median emargination. Chelipeds robust, smooth and glossy above; meros excavated at summit, with a small sharp tooth just behind the excavation; carpus flattened above, and unidentate within; superior margin of hand almost acute; fingers somewhat deflexed. Inner side of carpus, and surface of meros around the circular pit, densely pilose. Ambulatory feet slender, those of the third pair longest. Dimensions of the carapax in a male: length, 0.65; breadth, 1.07 inch.

Found on the Florida Keys. Museum of the Smithsonian Institution.

The most remarkable peculiarity of the crab above described, consists in the existence of a circular depression at the anterior apex of the meros, concealed in the angle of the arm when retracted. This I at first considered to be accidental, or the work of some parasite; but finding it in both chelipeds, with exactly the same appearance and position, I am led to believe it to be a prominent and important character, perhaps structural, although it is difficult to say what office it fills in the economy of the animal. The aperture of the pit in our species is one-twentieth of an inch in diameter, but the cavity expands beneath the margin, which is ciliated; the depth is about half the diameter. The bottom of the pit is hard and crustaceous like the rest of the surface.

### **Ocypode Gaudichaudii.**

*Ocypode Gaudichaudii*, M.-Edw. et Lucas; in D'Orbigny's *Voy. en Am. Merid., Crust.*, p. 26; pl. xi.

Found at Panama by Mr. Sternbergh.

**Gelasimus palustris.**

*Cancer palustris*, Sloane; Hist. Jamaica.

*Gelasimus vocans*, var. A, De Kay; N. Y. Fauna, Crust., pl. vi., f. 10.

“ “ Dana; U. S. Expl. Exped., Crust. i., p. 318.

“ *palustris*, M.-Edw.; Mel. Carcin., 112; pl. iv., f. 13.

“ *minax*, Le Conte; Proc. Acad. Nat. Sci., Philad., vii. 408.

The following characters will serve to distinguish the present species from *G. pugilator* of all ages. The carapax is more narrowed posteriorly, and the branchial regions are less inflated. The raised lines of the anterior three-fourths of the lateral margins are more distinctly prominent. The inner side of the greater hand is armed near its postero-inferior angle with an oblique tuberculated ridge; while the portion corresponding to this ridge in *G. pugilator* is bluntly rounded. The outer surface of the great cheliped is variable in character, the tubercles being very minute or obsolete in some specimens from the Mexican and Central American shores.

This species lives in marshes, often at considerable distances from the sea, and is never found on muddy or sandy beaches, where *G. pugilator* abounds. It has a wide geographical range, having been found at Rio Janeiro by Prof. Dana, at Aspinwall by the Rev. J. Rowell, at Hayti by Dr. Weinland, on the coast of Texas by Capt. Pope and Dr. Kennerly, in South Carolina by Dr. Girard, at Old Point Comfort by myself, at the mouth of the Potomac by Mr. Stag, and in New Jersey by Maj. Le Conte and Prof. Baird.

**Gelasimus pugilator.**

*Gelasimus pugilator*, Bosc.; Hist. des Crust., i. 198.

M.-Edw.; Mel. Carcin. 113.

Le Conte; Proc. Phil. Acad. vii. 408.

“ *vocans*, Gould. (non Rumph).

Found on sand or mud beaches in creeks and harbors, always

near the sea. There are specimens in the Smithsonian Museum from Mexico, Texas, Florida, South Carolina and Virginia, and its range extends northward to the south side of Cape Cod.

**Gelasimus subcylindricus**, nov. sp.

A species of *Gelasimus* found at Matamoras, on the Rio Grande, several specimens of which were collected by M. Berlandier, and deposited in the Smithsonian Institution by Lieut. Couch, shows a close affinity with *G. pugilator* in most of its characters, but differs so much in its proportions that it will probably prove distinct. The carapax is much broader, shorter, and more convex than in the *pugilator*, and the branchial regions are more inflated.

**Gelasimus panamensis**, nov. sp.

Of this species there are three specimens only in our possession, all of which are apparently immature. In the largest, a male, the carapax measures 0.35 inch in length, and 0.52 in breadth. The front is prominent but broad, and rounded below as in *G. pugilator*. The carapax is broad and full behind; and the margins are sufficiently distinct nearly to the posterior extremities, but are marked by raised lines only on the anterior half. The slight oblique or curved ridge at the posterior extremity of the lateral margin is prominent, but short. The exterior angle of the orbit is acutely prominent, so that the upper margin of the orbit is sinuous. Immediately behind this angle the lateral margin is straight, or slightly concave. The adult character of the great cheliped cannot be determined from so small a specimen, but the large hand in the young is smooth or slightly granulous above, and convex and unarmed within.

Found at Panama by Mr. Sternbergh.

**Plagusia sayi.**

*Plagusia depressa*, Say; Jour. Acad. Nat. Sci. Philad., i. 100.

“ *sayi*, De Kay; N. Y. Fauna, Crust., p. 16.

“ M.-Edw.; Mel. Carcin., 145.

“ *squamosa*, Gibbes; loc. cit. 182.

This species is distinguished from *P. squamosa* in having a series of six prominent tubercles arranged in the form of an arc across the gastric region. The corresponding tubercles may be traced in *P. squamosa*, but they are neither as prominent, nor so regularly arranged in an arcuated form. Another distinguishing characteristic may be found in the greater breadth of the superior lobe at the bases of the second and third ambulatory feet, which is regularly quadridentate.

The differences pointed out by Milne-Edwards will not serve as characters, since our species is no less tuberculose than *P. squamosa*.

Our specimens are from Key Biscayne, Florida.

**Pachygrapsus transversus.**

*Grapsus transversus*, Gibbes; loc. cit. 181.

*Leptograpsus rugulosus*, M.-Edw.; Mel. Carcin., 138. (?)

Scarcely to be distinguished from *P. innotatus* (*Goniograpsus innotatus*, Dana), but the carapax is somewhat more convex. The protogastric lobules are sufficiently distinct in full-grown individuals. The “corrugated area on the crest” of the hand, described by Gibbes, is sometimes obsolete.

Found among the Florida Keys by Wurdemann and Whitehurst, and on the coast of Texas by Wurdemann.

**Cyclograpsus integer.**

*Cyclograpsus integer* M.-Edw.; Hist. Nat. des Crust. ii. 79.  
Mel. Carcin. 164.

In our specimen of this species the infra- or post-orbital crest is 2- or 3-lobate externally, and erenulated internally. There is an obsolete emargination on the lateral margin of the carapax at its anterior third. The surface toward the front and antero-lateral margins is minutely rugate or granulated. The male abdomen narrows toward its extremity as in *C. punctatus*. Whether these characters accord with those of the true *C. integer*, the meagre descriptions as yet published do not enable me to determine.

Found on the coast of Florida.

**Sesarma cinerea.**

*Grapsus cinereus*, Bosc; Latreille.

*Sesarma cinerea*, Say; Jour. A. N. S. Phil. i. 422.

“ “ M.-Edw.; Hist. Nat. des Crust. ii. 75. Melanges  
Carcinologiques, 148.

“ “ Gibbes; l. c. 180.

This species is broader than long, in the proportion of 1:1.09; the breadth being measured between the orbital angles. It lives on muddy flats and the shores of creeks and sheltered harbors. Found at Galveston, Texas, by Dr. Kennerly; at Cedar Key, Fla., by A. Steele, Esq., and at the mouth of the Potomac, by Mr. Stag. It is extremely abundant near Charleston, South Carolina.

**Sesarma angustipes.**

*Sesarma angustipes*, Dana; loc. cit. i. 353. pl. xxii. f. 7.

“ *Ricordi*, M.-Edw.; Mel. Carcin. 149.?

Carapax more convex and narrower than in *S. cinerea*, the width (measured between the orbital angles) being less than the length. It is, however, broader posteriorly. The front is narrower, more projecting, and often sparsely tuberculated; and the ambulatory feet are longer and narrower than in *S. cinerea*, to which this species has, in other respects, much resemblance. The dimensions of a male carapax are;—length, 0·67: width, anteriorly, 0·65; of female, length, 0·75; breadth, 0·75 inch.

I cannot certainly identify this species with *S. Ricordi*, as the description of Milne-Edwards is very short, and he does not mention the narrowness of the carapax, an important character.

In the Smithsonian Museum, there are specimens from Florida, and others collected at Aspinwall by Mr. Rowell.

**Sesarma reticulata.**

*Sesarma reticulata*, Say; J. A. N. S. Philad. i. 73, pl. iv. f. 5.

Gibbes, l. c. 180.

This species is so very different from *S. cinerea* in its thick, swollen form, and short, thick, acuminate and channelled dactyli of the ambulatory feet, that it is surprising how it could have been confounded with it by European authors. In its form, and the prominence of the epistome, it is strikingly like *Helice*, and it may probably be considered the type of a new genus.

**Pinnotheres ostreum.**

*Pinnotheres ostreum*, Say; J. A. N. S., Philad. i. 67, pl. iv.; f. 5.

The female presents the following characters:—

The meros-joint of the outer maxillipeds is naked and glossy, broadly rounded and somewhat dilated at the inner angle; and the palpus is very short, with broad joints, with the exception of the dactylus, which is extremely small and slender. The ambulatory feet of the first pair are somewhat thickened, the penult joint swollen at its extremity, and the dactylus very short, almost conical; those of the second pair are longer than the others, with a dactylus two-thirds as long as the penult joint, compressed and curved, almost ensiform; the dactyli of the posterior two pairs are compressed, but shorter and thicker than in the second pair. In the chelipeds, the inside of the fingers and part of the palm are pubescent.

The male of this species is much smaller than the female, and rarely found. I have seen but one, which was scarcely one-eighth of an inch in length. The carapax is narrower, and flatter above; the front is more protruded, larger than in the female, and separated from the rest of the carapax by a transverse sulcus.

The species is common in oysters from the coasts of the Virginian province.

**Pinnotheres maculatus.**

*Pinnotheres maculatum*, Say; Jour. A. N. S., Philad., i. 450.

Carapax in the female narrowing anteriorly, the sides being obliquely subtruncated; median regions defined by deep sutures; surface covered with a dense but very short pubescence. Front prominent, deflexed, and concave at its extremity. Meros-joint of the external maxillipeds rather smaller, but thicker and stronger than is usual in the genus; extremity of the penult joint of the palpus pointed. Dactyli of first three pairs of am-

bulatory feet curved, of nearly equal and moderate length; those of the last pair long.

Inhabits the coast of South Carolina.

### **Pinnixa cylindrica.**

*Pinnotheres cylindricum*, Say; Jour. A. N. S., Philad. i. 452.

*Pinnixa cylindrica*, White; An. & Mag. Nat. Hist., xviii. 177.

M.-Edwards; Mel. Carcin., 186.

The male of this species differs considerably from the female, in its broader carapax, which is depressed or concave at the middle;—the hand is also broader, with nearly transverse fingers, and the dactylus curved, without a median tooth. These characters accord nearly with Say's description of his *P. monodactylum*. The superior edge of the meros-joint of the feet is smooth, except near the outer extremity, in all the female specimens of this species which have come under my notice, although it is stated by Say to be granulated. The palpus of the outer maxillipeds in this and the following species, is large, with the dactylus attached to the penult joint near the base of the latter, as in *Pinnotheres*, and not near its extremity as in *Pinnixa transversalis*, Lucas.

Say remarks that *P. cylindrica* is probably not parasitic. It is so however, although, as might be judged from the hardness of its carapax, it never revels like the *Pinnotheres* among the soft folds of the bivalve mollusca. It lives in the tube of a rougher host,—the *Chaetopterus*, a large worm found on the coast of South Carolina, whose parchment-like sheath, expanded at the middle, is bent in the form of a semicircle, so that both extremities project to the surface of the mud.

### **Pinnixa lævigata**, nov. sp.

Body glabrous above and below, particularly in the female. Carapax

above punctate, with a slight but sharp transverse ridge, most prominent in the male; surface behind the ridge oblique, nearly perpendicular. There is much pubescence about the bases of the feet. In the chelipeds, the fingers are longitudinal in both male and female, and gaping; the dactylus is armed with a tooth inside near the middle, and the immovable finger with a tooth near the extremity. The ambulatory feet of the third pair are very large and thick, but those of the second pair are not much larger than the first. Color yellowish grey. Dimensions of the carapax:—in a male, length, 0·22; breadth, 0·48;—in a female, length, 0·32; breadth, 0·64 inch.

This species lives with the lobworm (*Arenicola cristata*) in its hole in the sand, which is not lined by any tube. The young occur in the early spring on slimy shores at low-water mark. They were found by Lieut. Kurtz and myself near Fort Johnson, harbor of Charleston, S. C.

## OXYSTOMATA.

### **Leucosilia Jurinii.**

*Guaia Jurinii*, De Saussure; Rev. et Mag. Nat. Hist. 2me Ser. v.  
pl. xiii. f. 4.

*Leucosilia Jurinii*, Bell.

Found at Panama by the Rev. J. Rowell.

### **Randallia ornata.**

*Randallia ornata* (Randall); Stimpson; Crust. and Echin. Pacific  
Coast of N. Am., p. 31, pl. xix. f. 3.

This genus is more closely allied to *Leucosilia* than any other, and is similar in the characters of the front. The external maxillipeds are not marked by a longitudinal ciliated ridge in the female; the exognath is widened at the base, and its obtuse apex is overreached by the extremity of the endognath. The pterygostomial canal over the exognath is tridentate at its anterior margin as in *Myra*.

**Persephona punctata.**

*Cancer punctatus*, Browne.

*Persephona Latreillii*, Leach.

“ *Lamarckii*, “

*Guaia punctata*, M.-Edwards; Hist. Nat. des Crust. ii. 127.

“ “ Gibbes; loc. cit. 185.

*Persephona guaia*, Bell.

Common on the shores of Florida and South Carolina.

**Persephona Edwardsii.**

*Persephona Edwardsii*, Bell; Lin. Trans., xxi. 294; pl. xxxi. f. 8.

Found at Panama by the Rev. J. Rowell. Bell's specimens were from the Galapagos Is. In our examples from Panama the latero-inferior surfaces of the body, and the lower edges of the feet, are pubescent. Color in recent alcoholic specimens, above red, bluish white below.

**Hepatus angustatus.**

*Hepatus angustatus*, (Fabr.) White; Cat. Brit. Mus. 1847, p. 46.

“ “ Dana, loc. cit. i. 394.

*Hepatus faciatus*, Latr.: M.-Edwards.

Brought from Aspinwall by the Rev. J. Rowell.

**Hepatus decorus.**

*Cancer decorus*, Herbst.

*Hepatus decorus*, Gibbes; loc. cit. p. 183.

Taken at St. Joseph's Island, Texas, by G. Wurdemann, Esq. *Hepatus tuberculatus* of De Saussure should be compared with the young of this species.

**Calappa marmorata.**

*Calappa marmorata*, Fabr.; Suppl. 346.

We have specimens from Pensacola and from the Tortugas, Florida.

**Calappa galloides**, nov. sp.

Very closely allied to *C. gallus* of the Pacific, but is less convex, and less strongly tuberculated. The front or rostrum is distinctly quadridentate.

Inhabits the Florida Keys. Museum of the Smithsonian Institution.

## DROMIDEA.

**Dromidia\* Antillensis**, nov. sp.

Body everywhere short-pubescent, with longer hairs on the sides and on the feet. Carapax somewhat longer than broad, strongly convex, smooth. Frontal region longitudinally grooved along the middle. Front strongly deflexed and five-toothed (supra-ocular teeth included); teeth small and slender, almost spiniform, horizontally projecting; the median three sub-equal, and about as long as the distance between them at their bases; teeth over the eyes shorter but acute. External angle of the orbit prominent but obtuse. Lateral margin of the carapax four-toothed, and deflected anteriorly toward the corners of the buccal area, where there is a tubercle. First three teeth of lateral margin sub-spiniform; posterior one, situated at the lateral sulcus, as large as the others but less acute. External maxillipeds elongated; meros large, longer than the ischium, with its antero-exterior corner prominent, forming a sharp right angle. Chelipeds rather short and stout, nearly smooth; inferior edges of ischium and meros-joints granulated; carpus dentated at anterior angles with small teeth; hand short, smooth externally; palm shorter than dactylus, and armed with two or three small spiniform tubercles on the basal half of its superior margin. Ambula-

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\* The diagnoses of this and the succeeding new genera of Anomoura will be found in the Proceedings of the Philad. Acad. Nat. Sciences, Dec. 1858.

tory feet rather slender, smooth. Last pair of feet much longer than penult pair. Penult joint of abdomen in the male elongated and slender; terminal joint longer than broad; none of the joints soldered. Length of carapax, 1.30; breadth, 1.28 inch.

It carries a covering which is usually larger than itself, and may be either a compound ascidian, or a zoanthoid polype.

Found at St. Thomas, by M. Riise; at Key Biscayne, Florida, by G. Wurdemaun; and at the Tortugas, by Dr. Whitehurst.

It appears to be a common species, and I have seen it in most cabinets labelled *D. lator*, M.-Edw. That species, however, belongs to Milne-Edwards' first division, in which the carapax is broader than long.

### **Hypoconcha arcuata**, nov. sp.

Front margin of carapax regularly arched, nearly semicircular in outline; much more broadly rounded than in *H. sabulosa*, Guerin. There are slight notches on this margin at the insertion of the antennæ, but no notch at the middle, where there is, however, a deep fissure. The front margin is also minutely spinulose and densely ciliated, but not sparsely toothed as in Guerin's species. The lower surface of the facial region, maxillipeds, and chelipeds are everywhere uniformly granulated; but the granules of the chelipeds are rather finer than those of the facial region. The fingers are toothed, but the teeth are much shorter than in *H. sabulosa*. The last two joints of the female abdomen are minutely granulated, but not tuberculated. Length of carapax in the female, 0.235; breadth, 0.257. In one specimen the dimensions were nearly twice as great.

Found on the sandy shores of South Carolina, by Lieut. Kurtz; and at St. Thomas, by A. H. Riise.

The genus is a remarkable one, and was first instituted by Guerin, in 1854, for the *Cancer sabulosus* of Herbst, known to travellers, more than a century ago, as the "Faux Bernhard

l'Eremite." Its dorsal integument is not indurated, but membranaceous, and the animal consequently carries a valve of some *Venus* or other bivalve, which serves it both for a protecting covering and a hiding-place. Guerin says that the shell is held on by the posterior four feet, but the abdomen seems to serve this purpose more fully, by being abruptly bent and projecting near the middle, fitting firmly into the dorsal or hinge-sinus of the shell.

## PORCELLANIDEA.

### **Petrolisthes sexspinosus.**

*Porcellana galathina*, Say ; Jour. Acad. Nat. Sci. i. 458 (vix Bosc.).  
Gray ; Zool. Misc. 14.

*Porcellana sexspinosus*, Gibbes ; loc. cit. 190.

Found in considerable numbers on the Florida Keys, by Wurdemann and Whitehurst.

### **Petrolisthes occidentalis**, nov. sp.

Scarcely to be distinguished from *P. sexspinosus*, but the carapax is slightly broader, the spines less prominent and less acute, and the abdomen and feet more pubescent. To establish these differences with certainty, however, the examination of a large number of specimens is necessary.

Found at Panama, by Messrs. Sternbergh and Rowell.

### **Petrolisthes armatus.**

*Porcellana armata*, Gibbes ; loc. cit. 190.

The outer edge of the hand in this species is generally smooth, as the marginal spines mentioned by Gibbes, rarely occur.

Found at Aspinwall, by Mr. Rowell, and in great abundance at St. Thomas, by Riise.

Specimens were taken at Panama by Messrs. Sternbergh and Rowell, of a species which is either identical with *P. armatus*, or so closely allied that I have as yet been unable to find the distinctive characters. .

### **Petrolisthes politus.**

*Porcellana polita*, Gray; Zool. misc. 14. Griffith's Cuv. Crust. 312.  
pl. xxv. f. i.

“ *magnifica*, Gibbes; loc. cit. 191. .

Barbadoes; (Gill;) St. Thomas; (Riise.)

### **Petrolisthes marginatus**, nov. sp.

This species is allied to *P. armatus*, but the median lobe of the front is smaller and more prominent, and the carpus shorter; also there are four teeth, equal in size and very sharp, on the anterior margin of the carpus of the left cheliped. The surface of the carapax is smooth and pubescent. The hands are granulated, and covered above with a very short but dense pubescence;—from the inner base of the finger to the anterior angle of the carpus there extends a ridge of moderate prominence. The anterior or front margin of the hand is regularly small-tuberculated or crenulated, and the margin is conspicuous from the fact that the tubercles are of lighter color than the rest of the hand;—beneath there are two rows of marginal granules. The meros-joint of the ambulatory feet is spinulose above, and 1-spined below, near extremity. Color a deep purplish-crimson. Dimensions about the same as those of *P. armatus*; length of carapax about half an inch.

Found at Barbadoes, by Mr. Gill.

### **Petrolisthes gracilis**, nov. sp.

Carapax smooth, unarmed, and shaped as in *P. rupicolus*, but more flattened, and with a less depressed front. Chelipeds long and slender;

carpus narrow, about three times as long as broad, with its anterior and posterior margins parallel, straight and smooth, the posterior margin projecting and forming a sharp tooth at its outer extremity. Hands smooth, microscopically granulated; fingers within or below hairy. Ambulatory feet with the meros twice as long as broad, not dilated towards its extremity, and smooth, without spines above. Color reddish. Length of the carapax, 0.44; breadth 0.41 inch.

Taken at Guaymas, in the Gulf of California, by Capt. C. M. P. Stone.

### **Petrolisthes tridentatus.**

Plate I. fig. 4.

In this small species the carapax is smooth and unarmed. Front much deflexed and tridentate; with the median tooth or lobe triangular; margins smooth. The teeth of the front are most distinctly seen in a front view. Feet nearly naked. Chelipeds obsoletely granulososquamose; carpus about twice as long as broad, with the anterior margin nearly straight, not toothed, and very slightly projecting at the inner angle; the posterior margin subsquamated, but not spinulated. The carapax is generally minutely spotted with red, and streaked down the middle with whitish. Chelipeds dark reddish. Ambulatory feet annulated. Length of carapax, 0.20; breadth, 0.19 inch.

Found at Barbadoes, by Gill, and at St. Thomas by Riise.

Gray's short description of his *P. affinis*, (for which no locality is given,) applies in most respects to this species, and may be the same.

### **Pisosoma Riisei**, nov. sp.

Carapax rounded, smooth, and glabrous, faintly punctate and obsoletely striated transversely. Front bi-marginate; the upper margin or crest straight; the lower margin projecting into a small triangular tooth placed nearly in a vertical plane. The last three joints of the ambulatory feet are hairy; the meros-joint not dilated, and with smooth

margins. The chelipeds are unfortunately missing, but they are probably short and thick, as in *P. pisum*. Length of carapax, 0.17 inch; breadth a little greater. In this pretty little species the carapax is of a bright crimson color, with a large white spot on either side of the front; the ambulatory feet crimson, broadly 2- or 3-annulated with white.

Taken at St. Thomas, by A. H. Riise.

### ***Pachycheles rudis*, nov. sp.**

Plate I. fig. 5.

Carapax, antennæ, etc., nearly as in *P. grossimanus*. Sinus of posterior margin deep, almost acute at the middle. Surface glabrous, obsolete granulated, punctate or striated in different parts. Chelipeds very unequal, with a rugose, uneven surface above, irregularly tuberculated and granulated; carpus very short, angular, and projecting in front, but not dentated, convex at the posterior margin; surface of the carpus strongly granulated, with two longitudinal rows of more prominent granules near the middle; hand subtriangular, with very uneven surface, and a strong protuberance near the middle; lower surface of the hand glossy and slightly granulated in the middle, but more strongly granulated toward the margins; no pubescence between the fingers; surface of the fingers like that of the palm. Length of the carapax (along median line) in the male, 0.43; breadth 0.46; length of greater hand, 0.58; breadth 0.36 inch.

A littoral species like others of the genus. Inhabits the coast of California. Found at Monterey by A. S. Taylor, Esq., at San Luis Obispo by Dr. Newberry, and near San Francisco by Dr. Trask.

### ***Megalobrachium granuliferum*, nov. sp.**

Sides of the body densely hairy both above and below the bases of the feet. The feet are also hairy. When the chelipeds are folded, the tips of the fingers do not touch each other. The color is whitish where

not concealed by sordes; with scarlet patches on the margins of the median region of the carapax, and on the upper sides of the hands.

Carapax convex, smooth at the middle, but uneven and rugate towards the sides. Front of gastric region protuberant. Frontal region much depressed. Front tridentate, teeth however but little prominent; margins tomentose. Chelipeds large, resembling in shape those of *Polyonyx macrocheles*, but rugose, strongly granulated above and longitudinally bi-sulcated, dividing the surface into three equal obtuse ridges; meros very large, not dilated at anterior angle; carpus longer than broad, with entire margins, front margin not dilated, posterior margin arcuated; hand short, triangular, much narrowed behind, summit at juncture of finger very prominent; surface of hand more deeply sulcated than that of carpus, and outer margin hairy; fingers gaping, hairy above, crossing each other at tips; dactylus rather longer than the palm. Length of carapax, 0.29; breadth, 0.29; length of meros joint of greater cheliped, measured on lower side, 0.15; length of carpus, 0.22; of hand, 0.44, inch.

Found in considerable numbers at Barbadoes by Mr. Gill, and at St. Thomas by A. H. Riise.

### **Porcellana ocellata.**

*Porcellana ocellata*, Gibbes; loc. cit. 190.

Specimens of this species are often rather reticulated than ocellated. The hand is very broad, and strongly arcuated in the outer margin. In one of our specimens the carapax measures 0.70 inch in length, and the same in breadth.

Florida Keys; (Wurdemann.) St. Thomas; (Riise.)

## HIPPIDEA.

**Albunæa Gibbesii**, nov. sp.

Plate I, fig. 6.

*Albunæa symnista*, Gibbes ; (non Fabr.) loc. cit. p. 187.

Carapax broader than long, and considerably broader than in *A. symnista*. Ocular peduncles elongated, sharply triangular as in *A. Paretii*; their inner edges straight; their outer edges scarcely at all convex. Anterior margins on each side denticulated with six or eight teeth, variable in size, sub-distant and rather short. The tooth or spine, at the antero-lateral angle, reaches forward but little beyond the level of the anterior margin of the carapax, and is far shorter than in *A. Lucasii*. Dactylus of fourth pair of feet with no projecting lobe at the superior base; extremity acute, not rounded as in *A. symnista*. The terminal joint of the abdomen, in the male, is narrow, and acuminate, its extremity forming a long narrow projection, equalling one-fourth the entire length of the joint. This projection and the lateral margins of the joint are soft and flexible. On the surface of the joint there is a thick longitudinal tuft of longish setæ on either side of the median line, also a very thick tuft or pencil on each side at the base. Length of carapax in the male, 0.95; breadth, 1.10 inch.

This large species resembles *A. Paretii* in its front and eyes, but differs much in the characters of the last joint of the male abdomen.

Found at St. Augustine, Fla., by J. C. H. Smith, Esq. It also occurs among the Keys, near the southern extremity of Florida.

**Lepidopa scutellata.**

*Albunæa scutellata*, Desm.; Crust. p. 173.

“ “ M.-Edw.; Hist. Nat. des Crust. ii. 204.

“ “ Gibbes; loc. cit. 187.

Inhabits the shores of the Island of St. Thomas;—A. H. Riise.

**Lepidopa venusta**, nov. sp.

Carapax glabrous, of a silvery hue with bluish reflections in specimens preserved in spirits. The markings of the dorsal surface of the carapax are less profound and less numerous than in *L. scutellata*, and the principal transverse sulcus is nearly straight, and not undulated as in that species. Front tridentate; lateral teeth situated at about half-way between the median one and the lateral angles, and consequently nearer the median one than in *L. scutellata*. Ocular peduncles large, oval, diverging, and a little thickened below along the middle;—the minute eye being situated on the inferior surface near the extremity. Antennulæ slender, with flagella more than five times as long as the carapax. Feet nearly as in *L. scutellata*, but the dactylus of the second pair is more sharply excised, and the dactyli of the following pairs are more slender.

Length of the carapax, 0·43; greatest breadth, 0·54.

Found at St. Thomas by A. H. Riise.

## LITHODIDEA.

**Echidnocerus foraminatus.**

Body depressed. Upper surface of carapax and feet sharp-tuberculated, and minutely setose as in *E. cibarius*. Carapax subpentagonal, with the sides more sinuated in the hepatic and branchial regions.

Rostrum short; superior part with six short spines; inferior spine slender and acute, curved upward, a little overreaching the eyes. The antennæ are very short, and the acicle has five or six spines on each side. Feet short, and almost exactly like those of *E. cibarius*, except that in the chelipeds, the carpus has below a deep smooth sinus, and the carpus-joint of the second feet a corresponding sinus, somewhat shallower, however;—when the feet are folded these sinuses, coming together, form on each side of the body a round hole half an inch in diameter. Something of the same kind, but very much smaller and not at all conspicuous, is seen in *E. cibarius*. It probably serves for the passage of water to the gill-openings, which would otherwise be somewhat obstructed by the close folding of the chelipeds against the facial region.

The above description is drawn up from a specimen sent me by Dr. Trask of San Francisco. The dimensions of this are—length of carapax, 5·20; breadth, 6·10 inch.

Two examples of this species are in the possession of its discoverer, Dr. Trask, both of which were taken off the coast of California, near San Francisco.

### **Phyllolithodes papillosus.**

*Phyllolithodes papillosus*, Brandt; Bulletin phys.-mathem. de l'Académie de St. Pétersb. 1849, vii. 175.

*Petalocerus Bellianus*, White; Proc. Zool. Soc., 1856. p. 134. pl. xlii.

Mr. White's figure of this species having been published, there is no longer any doubt that his species is identical with that of Brandt. His description of the abdomen of the crab is rather "curious" than satisfactory.

Found in the stomachs of percoid fishes ("Cabesones") taken off Monterey, Cal., by Mr. Taylor.

**Hapalogaster cavicauda**, nov. sp.

Plate I., fig. 7.

Body, feet, and abdomen thickly short-setose above. Carapax subcordate, much depressed, nearly smooth, somewhat roughened or granulated at the insertions of the setæ. Sutures as in *H. dentatus*. Anterior margin five-toothed; median and lateral teeth equally prominent and sharp; teeth just within lateral teeth, small but sharp. No teeth or spines on the lateral margins, with the exception of the two on each side near the middle, at the origins of the sutures. Antennæ as long as the carapax; flagella very slender. Chelipeds thick and strong, but depressed, of the same size and shape as in *H. dentatus*, but smooth, and without tubercles, like the carapax; front margin of meros strongly bidentate; carpus with a tooth at the inner extremity of its anterior margin; margins of hand smooth. Ambulatory feet broad, much depressed, smooth; their anterior margins densely ciliated and deeply incised, forming four or five closely approximated teeth on each joint. Abdomen short, very broad, depressed, folded abruptly upon itself at the third segment and soldered, so that the three joints above next the base are convex, and setose in short fascicles; but the terminal joints below are concave, coriaceous, not setose, and have the segments distinct. The calcareous plates upon the first segment above are small, elongated, widely separated, and have no median plate between them. The plates of the abdomen are thus somewhat like those of *Dermaturus*, but the outer maxillipeds are exactly as described by Brandt for his genus *Hapalogaster*. The chelipeds are without spines, as in *H. Mertensii*.

Brandt, in his diagnosis of the genus, says that the carapax is somewhat leathery, and but little indurated with calcareous matter, but in the present species, as in the *Lomis dentata* of De Haan, which we have referred to the same genus, the carapax is as hard as is usual in crustacea.

The length of the carapax in our species is 0.72; breadth, 0.83 inch.

It was found at Monterey, Cal., by Mr. A. S. Taylor.

## PAGURIDEA.

**Cenobita rugosa.**

*Cenobita rugosa*, M.-Edw.; Hist. Nat. des Crust. ii. 241.

Dana; loc. cit. i. 471. pl. xxx. f. 1.

*Cenobita clypeata*, Owen (non Latr.); Beechey's Voy. Zool. 85.

Found at Panama by Messrs. Sternbergh and Rowell.

**Cenobita diogenes.**

*Cenobita diogenes*, Latr.

“ “ M.-Edw.; Hist. Nat. des Crust. ii. 240.

Found at Barbadoes, by Mr. Gill; St. Thomas, Riise; Hayti, Dr. Weinland; Florida, Bartlett.

**Pagurus venosus.**

*Pagurus venosus*, M.-Edw.; Ann. des. Sc. Nat., Ser. 3me., x. 61.

This species may be distinguished from others of the same group by the character of the third foot of the right side, which is exteriorly somewhat flattened, and transversely striated like that of the left side, though in a less degree. It is about four inches in length, and of a scarlet color, partly reticulated with deeper crimson threads or veins.

Found at St. Thomas by A. H. Riise.

**Pagurus sinistripes**, nov. sp.

Lateral margins of anterior part of carapax spinulose, especially at the anterior corners. Upper surface sparsely provided with fascicles of setæ toward the sides. The teeth or points of the front between the bases of the eyes and antennæ are large and triangular. The interocular plate or bracteole is colorless, and hence not conspicuous. Eyes large and thick, shorter than peduncle of antennæ; cornea considerably swollen, and bear-

ing a tuft of hairs in its superior notch. Ophthalmic scale obtusely-triangular, four-spined and somewhat setose at apex. Acicle of antennæ very slender, setose, not spinulose, and shorter than the eyes. In the left cheliped the carpus is spinulose, with four larger spines on the superior edge, that next the hand smallest; hand very thick, surface granulato-squamose, the squamæ often spinulose and setose; no hair on the hand excepting a little on the inner side; fingers armed within each with four or five strong but depressed molar tubercles; tips of fingers corneous, excavation small; exterior surface of dactylus sharply tuberculated. Smaller hand hairy, spinulose above, and depresso-tuberculated on the outer side. Second and third pairs of feet hairy and spinulose above; dactyli with tufts of hairs arranged in longitudinal series. The last two joints of the left foot of the third pair are flattened, or somewhat excavated on the outer side; this surface is divided along the middle by an obtuse carina, and transversely striated, the striæ setose; superior margin armed with black-spinules; inferior margin with subspiniiform tubercles. The scabrous disc of the hand in the 4th pair of feet is elongated, elliptical, almost acute at either extremity. The false feet of the male abdomen are slender. Length three inches. Length of carapax along median line, one inch; breadth of front, 0.42 inch.

Found at Panama by the Rev. J. Rowell.

### **Aniculus elegans**, nov. sp.

Median areolet of the gastric region rhomboidal, broader than in *A. typicus*, and with its two anterior sides longest and straight. Frontal sulci occupied by a dense pubescence. Rostral tooth or point regularly triangular. Ophthalmic scales triangular, with an acute apex, and entire margins. The under side of the meros and carpus joints in the chelipeds is setose, but not tuberculated as in *A. typicus*, and the margins of these joints are pectinated with black spinules. Length five inches.

Found at Panama by the Rev. J. Rowell.

### **Calcinus obscurus**, nov. sp.

This species has smooth chelipeds, and is closely allied to *C.*

*tibicen*,—differing only in color and in its somewhat more elongated hand. The greater cheliped is everywhere reddish-brown, with the exception of lighter margins to the fingers. The ambulatory feet are dark-olive, almost black, and their terminal joints are annulated near the tip, and sometimes also near the base, with a reddish ring.

This species might be referred to *C. chilensis*, with which it agrees in the length of the eyes, etc., but that species is in Gay's *Hist. de Chile, Zool. iii. p. 191*, said to have "varios tuberculitos sobre las pinzas y la parte vecina de la mano."

Collected in considerable numbers at Panama by Dr. Suckley.

### ***Clibanarius vittatus.***

*Pagurus vittatus*, Bosc.; *Hist. des Crust. ii. 8. pl. xii.*

Gibbes; *loc. cit. 189.*

Hands equal. Ambulatory feet 8-striped longitudinally; with dactyli longer than the penult joint.

Found at the mouth of the Rio Grande by Dr. Berlandier; at St. Augustine, Fla., by Mr. Dorman; and is common at Charleston, S. C.

### ***Clibanarius panamensis*, nov. sp.**

Of the same size with *C. vittatus*, to which it is very closely allied and perhaps identical; differing but little except in the arrangement of the colors in the longitudinal vittæ of the ambulatory feet. The white vittæ are more regularly arranged, equidistant, and more distinct on the inner sides of the feet. There are also more numerous stripes on the meros joint. Lastly, the tubercles of the hands are somewhat more sharply prominent.

Panama. Mr. J. H. Sternbergh.

**Clibanarius scolopetarius.**

*Cancer scolopetarius*, Herbst; Naturg. der Krabben und Krebse, ii. 23.  
pl. xxiii. f. 3.

*Pagurus cubensis*, De Sauss., loc. cit. p. 39.

Another species very near to *C. vittatus*. The dactyli of the ambulatory feet are somewhat shorter, and the stripes of color are equal, less distinct, not marginate, and rather yellowish than reddish.

Found at Aspinwall by Mr. Rowell; at Trinidad by Mr. Gill; and at the Tortugas by G. Wurdemann.

**Clibanarius Antillensis**, nov. sp.

Length about one inch. Eyes slender, very long, longer than either the peduncle of the antennæ, or the width of the front. Ophthalmic scale large, broad and truncated, spinulose on the front margin. Chelipeds nearly equal (the right usually the largest), armed with short spines or sharp tubercles, and somewhat hairy; hands olive, tubercles white. Ambulatory feet stout, very hairy above; dactyli much shorter than the penult joint. In the third foot of the left side the penult and terminal joints are flattened. The ambulatory feet are olive, with one white stripe on each side;—meros-joint with two stripes.

Differs from *C. bicolor* in its coloration. From *C. brasiliensis* in its larger ophthalmic scales, its right third foot not flattened, and in its more spinous hands. From *C. æquabilis* in its hairy and vittate feet.

Barbadoes; Theo. Gill, Esq.

**Isocheles wurdemanni**, nov. sp.

Body everywhere densely hirsute with long fine hairs. Post-frontal transverse sulcus deep, W-shaped, and placed more posteriorly than in *I. æquimanus*. Median point of front very obtuse, very little prominent, less so than the lateral points, which are acuminate. Eyes long, some-

what compressed, with a reddish vitta above; cornea very small. The eyes reach beyond the middle of the terminal joint of the peduncle of the external antennæ. The acicle is hairy, rough with spiniform points, and does not reach to the tips of the eyes. Chelipeds tuberculated above, and sparsely hairy; tubercles rather sharp, the larger ones arranged in longitudinal rows; carpus with a broad longitudinal channel between two rows of tubercles above, tubercles of the marginal row spiniform; fingers with strongly and densely tuberculated surface, somewhat gaping within, and dentated with equal tuberculiform teeth; tips corneous, sharply prominent. Feet of the second and third pairs subcylindrical, roughly granulated; dactyli not compressed, with six or seven slightly prominent, longitudinal, crenulated, and hairy costæ. Hand of the fourth pair of feet oblong; dactylus slender, not compressed, and scarcely over-reaching the tip of the rounded thumb-like process of the hand. Abdomen thickly covered with long hair; terminal joint scarcely emarginated. The cha-fing areolæ or callosities of the inferior surfaces of the feet near their bases, are numerous and well-marked. Length about  $2\frac{3}{4}$  inches. Length of carapax, 0.72; breadth posteriorly, 0.65; breadth of front, 0.28; length of chelipeds, 1.10; of ambulatory feet, 1.75 inch.

It is allied to *I. æquimanus*, but the hands are more strongly tuberculated, and the tarsi are not compressed as in that species.

Found in the Gulf of Mexico, at the mouth of the Rio Grande, by G. Wurdemann, Esq., whose extensive and long-continued researches in the zoölogy of our southern coast have furnished us with many interesting novelties.

### **Paguristes turgidus.**

*Clibanarius turgidus*, Stimpson; Crust. et Echin. Pacific Coast of N. Am., p. 44; pl. xxi. f. 1.

The anterior or gastric portion of the carapax is fasciculated with hairs towards the sides, and bears a single tuft in the median line. The anterior cardiac lobe is elongate-triangular, slightly convex near the base, but not dilated toward the pointed extremity. Rostriform tooth very short, and not more prominent than the lateral points, which are

acuminated. Eyes slender, but much shorter than the width of the front. Ophthalmic scales with an elongated apex, denticulated on both margins. Acicle falling short of the extremity of the eye by one-sixth of the length of the eye;—it is hairy and spinose on both sides. Chelipeds equal. Terminal joint of abdomen unsymmetrical, with the left terminal lobe much more produced than the right. The callosities of the inferior surface of the thoracic members are numerous, large, black, and well defined.

Inhabits the western coast from Puget Sound to Monterey, Cal.

### **Paguristes depressus**, nov. sp.

Carapax flattened, naked; posterior portion much expanded; sides of anterior portion short, the transverse suture reaching far forward laterally; surface rugulose; lateral sinuses spinulose. Anterior cardiac lobe narrow-halberd-shaped, somewhat widening toward its blunt posterior extremity. Rostrum elongated, reaching nearly to the middle of the ophthalmic scales, with its lip imbedded in the rounded tubercle of the ophthalmic ring, which is exposed in this species. Eyes very large, much over-reaching the tip of the peduncle of the very slender antennulæ. Ophthalmic scales with bidentate tip,—margins of apex entire. Antennæ short; terminal joint of peduncle and flagellum very slender, almost naked; acicle slender, spinous and hairy. Chelipeds equal, broad, and depressed, almost naked; meros scabrous above; carpus minutely spinulose, and armed with four spines on the inner edge; hand uniformly minutely granulated, with five tubercles on the inner edge of palm; fingers with sharp, cutting inner edges; tips not spiniform; immovable finger concave below; dactylus near three times as long as the inner edge of the palm. Ambulatory feet above scabrous, spinulose and setose; dactyli with a dense series of longer setæ along the superior and inferior edges. The inner side of the penult and terminal joints in the left second foot is concave. The following are the measurements of a female specimen:—general length, 3 inches; length of carapax, 0·77; breadth of front, 0·40; length of eye, 0·41; length of chelipeds, 1·05 inch.

In this species, adapted to live in such shells as those of the genera *Conus* and *Strombus*, with long narrow apertures, the body is much flattened, and the sternum greatly developed, being broadly exposed between the chelipeds, and showing the ventral piece to which the outer maxillipeds are attached. This would, perhaps, be considered by many as a character of generic importance, but it appears to us to be only a peculiar specific modification to adapt the animal to live under peculiar circumstances. A modification which may occur in any genus of *Paguridæ*, and does occur in one other genus—instance *Pagurus platythorax*. The species we have described shows fully all the generic peculiarities of *Paguristes*, as does the *platythorax* all those of *Pagurus*.

*P. depressus* was found in a *Strombus pugilis* dredged in two fathoms, sandy bottom, at the island of St. Thomas, by Theo. Gill, Esq.

### **Spiropagurus dispar**, nov. sp.

Carapax smooth and glossy, naked. Eyes rather longer than in *S. spiriger*, but not over-reaching the tip of the acicle. Ophthalmic scales narrow. Chelipeds slender, smooth, glabrous, sparsely ciliated, unequal in size, the left one being much more slender, though but little shorter than the right; left hand with slender fingers as long as the palm. Right hand a little longer than the left, and twice as broad and thick; fingers short, not more than half the length of the palm, and coarsely toothed within. Ambulatory feet much longer than the chelipeds and over-reaching their extremities, smooth and hairy; dactyli very slender, not dilated. Feet of the fourth pair almost simple; penult joint with no scabrous surface, but a few corneous marginal denticles. Length about one inch. Colors mostly faded in our specimens; the hands are, however, pale orange, loosely reticulated with thread-like crimson lines, on the white fingers as well as on the palm.

This small species was found in the white shell of a *Natica*,

around the aperture of which was an incrustation formed by some hydroid polype. It was dredged from a sandy bottom in two fathoms, at the island of Barbadoes, by Theo. Gill, Esq.

It is interesting as being the second species of a genus which has heretofore contained but one known representative, *S. spiriger* of Japan.

### **Eupagurus bernhardus.**

*Pagurus bernhardus* (Linn.), Fabr.; Gould; Inv. Mass.

*Eupagurus bernhardus*, Brandt.

Found on the north-east coast as far south as Long Island. Specimens have been sent from Puget Sound, by Dr. Kennerly.

### **Eupagurus kroyeri**, nov. sp.

Carapax and feet naked, or only slightly pubescent. Chelipeds inconspicuously spinulose, spinules numerous, but very small and short. Right carpus elongated, and expanding at the base of the hand. Right hand twice as long as broad; fingers slender, depressed, with corneous tips. Left hand with its carina single, very sharply prominent, denticulated, and running to the right of the median line; surface beneath the carina to the right, smooth; extero-inferior edge of the hand sharp and slightly dilated. Ambulatory feet reaching beyond tips of chelipeds. Posterior margin of the last caudal segment deeply emarginated and spinulose. Length two inches.

Found at Grand Manan, and in Massachusetts Bay, by myself, and also occurs in Puget Sound.

There are two species on our north-east coast, which have been confounded under the name of *Pagurus pubescens*. In the *first*, a large species, the feet are thickly pilose, the tarsi much curved, the right cheliped spinulose, and over-reaching the ambulatory feet of the same side, and the left hand armed only with a low, obtuse, and often double carina. In the

*second*, smaller, the feet are scarcely at all pubescent, the spines shorter, the tarsi straighter, and the carina of the left hand thin and sharply prominent. Kroyer's figures and descriptions seem to comprehend both these species, and we would propose to restrict his specific name to the *first*, to which the name *pubescens* most properly belongs. The *second* we have described above, under the name *Kroyeri*. Both are arctic species, occurring on both sides of the continent.

### **Eupagurus samuelis.**

Plate I. fig. 8.

*Eupagurus samuelis*, Stimpson; Crust. and Echin. Pacific Coast of N. Am., p. 42.

This species was originally described from a single dried specimen in a bad condition. A large number of specimens have since been sent from Monterey, by Mr. Taylor; and comparisons of numerous individuals, of both species, show that it is closely allied to *E. hirsutiusculus*. It may, however, always be distinguished by its broader right hand, with a sharply compressed and arcuated outer margin, and by having a sharply prominent tubercle on the inferior surface of the meros-joint in both chelipeds.

### **Eupagurus granosimanus**, nov. sp.

Rostrum or median lobe of front broad, obtuse, not prominent. No sharp teeth between the bases of the eyes and antennæ. Eyes rather long, but shorter than the peduncle of the outer antennæ. Acicle of these antennæ small and slender, not reaching to the tips of the eyes, flattened above, with the inner edge setose; flagellum very long, compressed, naked. Feet naked in the adult. Right cheliped very long, in the adult over-reaching the tips of the ambulatory feet; meros below granulated and bi-tuberculated, and above pectinated at the anterior

margin with seven or eight short, irregular teeth; carpus and hand evenly oblong, granulated above and below, granules depressed, largest and most crowded on the fingers; carpus nearly twice as long as broad; hand a sixth part longer than the carpus; dactylus four-fifths as long as the palm; outer edge of immovable finger rather sharp; tips of fingers calcareous. Left cheliped short, in full-grown specimens not reaching to the posterior margin of the right hand; surface granulated as in the right cheliped; meros smooth below; superior edge of carpus sharp and armed with four or five short spines; hand convex, prominently granulated, and showing at the middle of the base above, indications of a groove and carina, which are not, however, continued further. Ambulatory feet short, spinulose along the superior edges; dactyli longer than penult joint, not twisted, their edges not sharp, tips long, corneous. Color reddish; feet regularly maculated with light-blue or yellowish spots, very small, oblong, sub-equal; tubercles of under side of meros white. General length, 2.4; length of carapax, 0.47; width of front, measured between outer bases of antennæ, 0.22 inch.

This species resembles *E. middendorffi* in its proportions, but is readily distinguished by the more strongly granulated surface of its chelipeds, and the spinules on the superior edges of the other feet.

Found at Monterey, Cal., by Mr. Taylor, and in Puget Sound by Dr. Kennerly.

### **Eupagurus brevidactylus**, nov. sp.

Carapax smooth, nearly naked. Rostral point very obtuse. Eyes very long and slender, somewhat tapering, slightly curved, and reaching to the extremity of the peduncle of the outer antennæ; cornea scarcely at all dilated. Ophthalmic scales short and broad. Feet sparsely hairy. Chelipeds spinulose above, beneath smooth and naked. In the right cheliped the palm of the hand is large, longer than the carpus, and one-half longer than the fingers;—the fingers are each armed with a tooth within at the middle. Left cheliped reaching to the middle of the

dactylus of the right one ; fingers gaping. Ambulatory feet smooth ; a small spine at extremity of the carpal joint ; dactyli very short, shorter than the penult joint and not twisted. Color pale reddish ; feet with interrupted longitudinal stripes of darker red. Length about one inch.

Found at Barbadoes, by Mr. Gill.

### **Eupagurus pollicaris.**

*Pagurus pollicaris*, Say ; Jour. A. N. S., Philad., i., 162.

“ “ Gould ; Inv. Mass., 329.

“ “ Gibbes ; loc. cit., 189.

Common on the eastern coast of the United States. Found at St. Augustine, Fla., by Dorman ; and at Brazos Santiago, Texas, by Wurdemann.

### **Eupagurus operculatus**, nov. sp.

Plate I., figs. 9 and 10.

This species may be easily recognised by the great expansion of its right cheliped, the hand of which is one half broader than the carapax, and serves as an operculum, closing the aperture when the animal retires within the shell which it inhabits. This hand is broader than long, very thin, with the margins expanded and lamelliform ; surface even, granulated minutely above but more prominently below ; superior surface of dactylus with a median ridge ; carpus subtriangular, margined on either side by a ridge, that on the left side denticulated. Left cheliped subcylindrical, very slender and weak ; carpus with a row of minute spines above. Ambulatory feet slender, glabrous, nearly naked, with a spine at the apex of the carpal joint ; dactylus shorter than the penult joint, and armed below with corneous spinules. Dactylus of fourth pair of feet broadly expanded. The carapax is smooth and glossy, naked ; eyes exceeding the much curved acicle in length, and scarcely shorter than the peduncle of the outer antennæ ; apex of ophthalmic scales long and slender. In the great cheliped the carpus is

crimson, maculated with bluish-white; head white. Length of the animal about one inch.

It is somewhat allied to *E. tenuimanus*, Dana.

Found at the Tortugas, Florida, by Dr. Whitehurst.



LIST OF FIGURES ON PLATE I.

Fig. 1. *Speocarcinus carolinensis*, ♂ nat. size.

“ 2. Posterior portion of sternum in the same, showing base of abdomen, nat. size.

“ 3. Dactylus of ambulatory foot of the same, magnified.

“ 4. *Petrolisthes tridentatus*, ♂ magnified two diameters.

“ 5. *Pachycheles rudis*, ♀ nat. size.

“ 6. Terminal joint of the abdomen in *Albunaea Gibbesii*, ♂ twice nat. size.

“ 7. *Hapalogaster cavicauda*, ♂ nat. size.

“ 8. Right hand of *Eupagurus samuelis*, twice nat. size.

“ 9. Right hand of *Eupagurus operculatus*, nat. size.

“ 10. The same, side view.

