

Appendix to the Account of the Crustacea of the United States. By Thomas Say. Read December 1.

The following species were discovered since the publication of their respective genera, in the preceding part of this work.

Genus LUPA.

For generic characters see p. 65.

*L. maculata**. Clypeus four-toothed; thorax reticulated, covered with minute granules; anterior feet three-spined on the third joint before; carpus two-spined; abdomen, second segment mucronate each side.

Inhabits coast of Georgia and Florida.

Cabinet of the Academy.

Thorax crowded with minute granules, distributed equally, and with the anterior and posterior feet above, chocolate brown with crowded, suborbicular, unequal, white spots, giving to the whole surface a reticulated appearance, lateral teeth ciliated; *clypeus* with four small teeth, of which the intermediate ones are rather larger and more distant, septum of the intermediate antennæ prominent, dentiform; anterior canthus of the eye obtusely dentiform above, and more prominently so beneath; *anterior feet*, third joint three-spined before, spines unequal, anterior ones largest, an obtuse spine or angle separated from the hind tip by an impressed line, which curves above to the middle of the tip, and thence towards the anterior edge; *carpus* with three elevated, or equal lines, of which two are abbreviated and the outer one terminated in a spine, inner edge with a spine, and two

obsolete ones on the outer tip; *hands* with a strong spine at base and five elevated, granulated lines, one of which terminates in a short spine at the base of the thumb; *fingers* with impressed lines and incurved at tip; *pectus* white; *cheeks* pubescent; *abdomen*, second segment mucronate each side, third, fourth, fifth and sixth segments in the female, reddish yellow at base.

Length two and a half, breadth four inches, nearly, exclusive of the elongated spines.

Resembles *L. hastata*, but is at once distinguished from it by colour, by having four small teeth to the clypeus, a spine each side of the second abdominal segment, armed carpus and many other differences; from *L. pelagica*, to which it also approaches, it differs in colour, in having only three spines on the third joint and the anterior feet, &c. But it seems to be more closely allied to *L. reticulatus*, it however differs much from the figure given of that species.

The above description was taken from the dead subject. I have not seen a living specimen.

Genus CANCER.

For generic characters see p. 57.

SPECIES.

1. *C. limosa*.* Thorax equal, convex, with about three serrate teeth each side; clypeus with a fissure; fingers white.

Cabinet of the Academy.

Inhabits shores of the northern states.

Thorax transversely somewhat semicylindrical, granulated each side, three lateral serrate teeth granulated

on their edges, and an anterior one hardly distinct from the posterior elevated supercanthus of the eye, *superior eye lid* with two obsolete fissures, anterior supercanthus destitute of a prominent angle; *clypeus* divided in the middle by a fissure, lateral segments regularly and obtusely arcuated at the edge; *labrum* prominent, undulated; *cheeks* and *sides of the thorax* densely granulated, a conic tooth beneath the anterior tooth of the edge of the thorax; *anterior feet* equal, olivaceous-green, immaculate, beneath fulvous or yellowish; *carpus* with a prominent obtuse spine within, beneath which there is no angle; *hands* rounded above and beneath, fingers deflected, white or yellowish, obtusely and somewhat regularly dentated within, thumb often purplish above at base; *abdomen*, second segment of the male abruptly much narrower than the first and third, third much wider than the fourth, penultimate one with equal transverse diameters and not wider at tip than the terminal segment, which is widest near the middle in consequence of being much arcuated at base.

Length about one inch and one fifth, breadth one inch and a third.

Not uncommon in muddy places of our southern coast. It resembles *C. Panope*, but is sufficiently distinct by the more convex thorax, colour of the fingers, and form of the segments of the clypeus, which in *Panope* are slightly undulated; in *Panope* also the carpus has a projecting angle beneath the spine, which is wanting in this species; a striking difference is observable in the second abdominal segment, which is deeply emarginate at the posterior angles, and not narrower at base than the first segment.

2. *C. mercenaria**. *Thorax* subequal, about four lateral very obtuse teeth; *clypeus* with a fissure, lateral segments three-lobed; *fingers* black at tip.

Inhabits the southern states.

Cabinet of the Academy.

Body maculated when recent; *thorax* each side divided by four sinusses into four very obtuse teeth, which are rectilinear at tip and hardly prominent beyond the thoracic curve, cheeks and sides not distinctly granulated, and destitute of the conic tooth beneath the anterior thoracic one; *orbits* suborbicular, no distinct sinus at the posterior canthus, inferior lid entire and simply concave in the middle of the edge, a profound fissure in the anterior canthus; *clypeus* unequal, an indented fissure in the middle, the lateral segments somewhat three-lobed, anterior one most prominent; *labrum* not prominent in the middle; *pectus* of the male with a hispid fascicle on the second and third segments each side; *carpus* within dilated into a very obtuse, obliquely compressed tooth, beneath which there is no angle; *hands* unequal, rounded above and beneath; *fingers* black, at base colour of the hand, teeth obtuse; *tibia* of the remaining feet fasciculate above and beneath with rigid hairs and punctured each side; *tarsi* densely hirsute above and beneath, a longitudinal fascicle each side at base, tips glabrous; *abdomen* of the male, second segment hardly narrower than the preceding, third segment hardly wider than the next, convex each side, lateral edge regularly rounded, penultimate segment slightly wider at tip than the base of the terminal segment, ultimate insisure nearly rectilinear or but slightly curved.

Length three inches and one fourth, breadth four inches and a half.

Esteemed as food and sold in the Charleston market, tied up in small parcels of from four to eight together. It attains to a much larger size than either of the preceding species, from which it may be distinguished by the form of the clypeus, lateral teeth, abdominal segments, &c.

3. *C.* aculeatus*, Hirsute; thorax each side, arms and feet above with numerous erect spines; *clypeus* emarginate in the middle and each side.

C. spinifrons, Herbst.? Lat. Hist. Nat. Sonin. vol. v. p. 347.

Inhabits coast of the southern states.

Cabinet of the Academy.

Body above with numerous filiform hairs; *thorax* varied with very pale ferruginous, and whitish, armed with about six blackish, acute spines each side, of which four are in a marginal series, the anterior one smallest and placed at the posterior canthus of the eye; *clypeus* deeply emarginate in the middle, and more obtusely so each side, minutely dentate, with three indented lines, and four or six-spined at tip; *orbits* without distinct fissure, above three-spined, beneath spinous; *antennæ*, exteriores more than half the length of the thorax; *feet* with four or five small teeth above on the third joint, that of the anterior pair with two prominent acute spines at tip separated by the impressed band, second joint of the anterior feet dentated on the anterior edge; *carpus* with fifteen or twenty erect, acute, blackish spines; *hands* large, unequal, spinous, spines erect, blackish, more obtuse towards the

inferior edge; *fingers* striate, black, armed with obtuse teeth; *tibia* of all the feet spinous above; *tarsi* hairy beneath.

Length about nine tenths, breadth one inch and one tenth.

Found on the coasts of Georgia and E. Florida, and generally occurs concealed in a large species of gelatinous *alcyonium* which is frequently cast up by the waves. A species of *Balanus* is often attached to their thorax. This does not agree with the description of *C. spinifrons* as quoted in Rees' Cyclopædia from Fabricius, but it may possibly approach in character to that of Herbst as quoted by Latreille. In order that the truth may be ascertained I have given a detailed description of this animal, that those who may have an opportunity may judge of its identity by comparison.

I should have referred this species to the genus *Eriphies*, Latr. but the antennæ are not remarkably elongated, nor distant from the ocular peduncles. It cannot be referred to the genus *Atelecyclus*, Leach, as the hands are not crested.

Genus PINNOTHERES.

For characters see p. 67.

SPECIES.

1. *P. maculatum**. Body with very short desiduous, dense hair; clypeus obtusely angulated, indented above the tip.

Inhabits the muricated Pinna of our coast.

Cabinet of the Academy.

Male. *Body* indurated, above black, beneath yellowish white; *thorax* with very short, desiduous, dense hair, a dorsal whitish vitta, which is contracted in the middle and near the base, cruciate before and abbreviated near the clypeus, a large triangular whitish spot each side before the middle, and an obsolete whitish abbreviated line each side behind; *clypeus* and *anterior part of the thorax* margined with whitish; *pectus* and *abdomen* with black insisures, the latter gradually straitened to the tip, which is rounded; *feet*, third and fourth pairs with the second joints of the tibia ciliated on the posterior outer submargin.

Female. *Body* somewhat indurated, obscure brownish, immaculate, hair shorter, more desiduous and dense than that of the male; *thorax* orbicular, minutely punctured beneath the hair, a double dorsal series of irregular indentations, of which the hind ones are more conspicuous and sometimes confluent into an arcuated line; *feet*, second pair ciliate on the inner part of the penultimate joint, third and fourth pairs not ciliated; *abdomen* ciliated at the edge, and obtusely carinated on the middle, tip entire, very obtusely rounded.

Length, male, seven twentieths of an inch; female rather more than two fifths of an inch.

A common inmate of this species of Pinna. In one shell I found the two sexes, and in another two females, but this plurality rarely occurs.

2. *P. Byssomiæ*. (Female.) *Thorax* somewhat transversely oval; clypeus hardly advanced, rounded, entire; hand not gibbous near the base of the thumb.

Inhabits the *Byssomia distorta*.

Cabinet of the Academy.

Thorax glabrous, rounded each side, immarginate; *eyes* sanguineous; *anterior feet* with the hand linear, or not gibbous near the base of the thumb above, ciliated on the inferior edge, fingers two thirds the length of the hand, armed with minute teeth; thumb with a prominent, acute tooth near the base, closing between two much shorter distant ones of the finger; *carpus* with an abbreviated ciliate line within, third joint ciliate on the inner edge; *second pair of feet* ciliate beneath the penultimate joint; *tarsi* unarmed.

Length about one-fourth of an inch.

I found a single female of this species in an anomalous Byssomia, which in a MSS. account of the shells of North America I have named *B. distorta*. It imbeds itself in the large *Alcyonium* of the southern coast, and between individuals of a species of aggregating *Ascidia*.

It is infested by two very distinct kinds of parasites, which I regret not having had an opportunity to examine satisfactorily. One resembled *Fascicola* with the ocellate points of *Planaria*. I have named it *Fascicola nigra*. Body cylindrical, blackish, two ocellate spots near the anterior extremity. It was active, motion undulatory. The other was numerous, attached in two fascicles to the exterior of the thorax, and resembled a minute species of *Amphitrite*.

3. *P. cylindricum**. Body transversely-subcylindrical; anterior feet didactyle, equal; second and third pairs nearly equal, and with punctured tarsi; fourth pair very robust, larger and longer than the anterior ones; posterior pair very small; eyes approximated, orbits ovate orbicular.

Inhabits coast of Georgia.

Cabinet of the Academy.

Body indurated; *thorax* punctured, above depressed, a transverse, abbreviated, indented line behind the middle, and with an elevated line between the origin of the two hind feet, from which the thorax is defracted behind, sides decurved to a rounded tip; *anterior feet*, third joint with a transverse, indented, obsolete line before the tip; *carpus* unarmed; *hand* moderate, elongate quadrate, fingers arcuated, meeting at tip and forming a suboval interval, finger with a larger tooth near the tip, thumb with one behind the middle; *second* and *third pair of feet* with the penultimate joints pectinated beneath, tarsi with three pectinate lines, third joint of the latter pair granulate above and beneath; *fourth pair*, very robust, third joint larger than the hand, with a double line of granules above, confluent near the tip, and a profound concavity behind, which is granulated on the inferior edge, second joint of the tibia with a double prominent obtusely pectinated line beneath; *posterior feet* very small, simple, hardly attaining the tip of the third joint of the preceding pair, and not equal to the distance between their bases; *tarsi* short, conic; *abdomen* of the *female*, suborbicular, covering the pectus, much narrowed at base, attaining the bifid tip of the pedipalpi, and with a double impressed line in the middle, of the *male* linear, tip rounded and slightly narrower than the base.

Length of the male, three-tenths, breadth, thirteen twentieths; length of the female, seven-twentieths, breadth, three fourths.

Found by Mr. William Maclure on Jeykill island,

Georgia, and subsequently an individual of the other sex by myself near the same place.

The pedipalpi are precisely the same as in *Pinnotheres*, but this animal seems to be estranged from the genus by several minor characters, as those drawn from the robust fourth pair of feet, the indurated consistence of the body, the transverse thorax, &c. In the two latter respects somewhat resembling the following species. From its magnitude, the firmness of its integuments, and the similarity of the sexes, it seems probable that it is not parasitic. Under these considerations I considered it the type of a distinct genus, and had associated with it the following species; but I prefer in this place uniting them under the genus *Pinnotheres*.

4. *P. monodactylum**. (Male.) Thorax transverse; hands monodactyle.

Inhabits the American coast.

Richmond Museum.

Thorax transversely subelliptical, narrowing each side to the middle of the lateral edge, which is rounded, a tubercle each side marking the situation of the anterior lateral angles, surface punctured; *orbits* suborbicular; *antennæ*, exteriores subequal to the breadth of the clypeus; *hand* oblong, somewhat quadrate; *palm* concave and ciliated in the middle, a spiniform angle instead of a finger, with a tooth at its base, and another at the base of the thumb larger; *thumb* abruptly incurved at base, rectilinear towards the tip, with an angle at the interior middle, tip acute, attaining the tip of the spiniform angle; *feet*, second, fifth and third pairs subequal, the latter rather larger, fourth pair larger, and with the fifth pair

with somewhat dilated tibia; *abdomen* with a few larger punctures, terminal joint rounded at tip, entire, ciliated and attaining the tip of the geminate joints of the pedipalpi.

Length three tenths, breadth one half an inch.

This curious animal occurs in the Richmond Museum. Mr. J. Warrell, the proprietor of that interesting establishment, supposes it to be American, but whether from our eastern or western coast he could not say. It is particularly remarkable in having monodactyle hands, a character which in a very rigid arrangement would not only separate it from the genus *Pinnotheres*, but also from the preceding species as a distinct genus. The tibia of the fourth and fifth pairs of feet are somewhat dilated, but the corresponding tarsi are accidentally wanting in this specimen.

Genus LEPTOPODIA. *Leach.*

Rostrum elongated, entire; eyes not retractile, distant; pedipalpi, second joint of the peduncle, half as long as the first; palpi hirsute, first and second joints subequal, third longest; feet, anteriores didactyle; tarsi elongated; *abdomen* six-jointed.

SPECIES.

*L. calcarata**. Third joint of the feet three-spined at tip, the middle one large, prominent, and obtuse.

Inhabits coast of South-Carolina.

Cabinet of the Academy.

Thorax inequal, with distant, somewhat acute tubercles, an indented transverse line before the middle, re-

gion of the eyes equal; *ocular peduncles* slightly projected before the eyes in an obtuse spine; *antennæ* shorter than the rostrum, a small spine at their exterior base; *feet*, anterior pair acutely spinous above and beneath, third joints of the remaining feet three-spined at tip, of which the superior one is very robust, elevated, obtuse, and half as long as the first joint of the tibia; *abdomen* obtusely carinated in the male.

Length one half, breadth one fourth of an inch.

I obtained but a single specimen of this remarkable species (a male) in the bay of Charleston on a *Gorgonia*. It is sufficiently distinguished from the other species of the genus by the very remarkable spine at the tip of the third joint of the feet.

Genus PORCELLANA.

Thorax orbiculate-subquadrate; *antennæ*, interiores with an elongated peduncle, exteriores elongated, setaceous; external pedipalpi with the inner first joint dilated within; feet ten, anterior pair didactyle, dilated, fifth pair spurious; *tail* bilamellate each side.

SPECIES.

*P. soriata**. Carpus and hand tuberculate before, tubercles very obtuse, each composed of from four to nine granules; anterior part of the thorax deeply crenate, crenæ inflected, in the two lateral ones are placed the eyes and antennæ.

Inhabits the southern coast.

Cabinet of the Academy.

Thorax naked, edges granulated, an anterior trans-

verse line of about four very obtuse tubercles; *clypeus* with an impressed line, edge three-toothed, of which the anterior one is more acute, the lateral ones forming the inner supercanthus of the eyes; *feet* hairy, third joint unarmed, first joint of the tibia grooved above and with the second granulated; *anterior feet*, third joint slightly granulate at tip and on the anterior edge, the anterior condyle rather prominent; *carpus* destitute of hair, nearly as large as the hand, with numerous granular tubercles on the upper side, anterior edge with a prominent tooth subequal to the condyle of the preceding joint and granulated; *hands* hirsute on the inferior edge, elevated into an emarginate and granulated angle above, anterior side compressed and with granulated tubercles, which are somewhat arranged in lines longitudinally, and with the carpus beneath convex, smooth, and white; *fingers* granulated before, granules of the thumb arranged in about three lines, teeth small, regular, resembling the granules, and like them diminishing in size to the tip.

Length of the thorax one-fifth of an inch.

A number of specimens occurred, cast ashore on the beach of St. Catharine's island, Georgia, in an alcyonium.

NOTES.

HEPATUS fasciatus, Latr., is not uncommon on the coasts of Georgia and Florida. It varies considerably in the arrangement and configuration of its spots. When young it is generally more or less fasciate with reddish, but in the adult specimen, these bands are interrupted into large spots, which are each diluted on the disk, and are

somewhat symmetrically disposed. In a specimen brought from Guadeloupe by Mr. L'Hermenier, the spots are minutely divided, punctiform, and equally distributed; the abbreviated granular lines so conspicuous in the young specimen, become almost obsolete in the adult state; the colour of the spots or bands varies from a purplish to a deep sanguineous.

As this species agrees very well with the description of *Cancer epheliticus* of the *Amœnitates Academicæ*, vol. vi, p. 414, I have no doubt of its being the same. The figure which *Rumphius* has given, tab. 8, fig. 5, and which is referred to by the author of the above mentioned description, bears a general resemblance to the *fasciatus*. *Cancer floridus* of Linné, said to be an inhabitant of India, but which is described as a native of North America, in the *Encyclop. Methodique*, is probably also the same, as the description of that lost species agrees very well with our specimens of *fasciatus*.

PORCELLANA galathina. We found many specimens on the coast of Georgia and Florida.

LEUCOSIA punctata, is very common on the southern coasts.

MAJA spini-cincta, Lam., a specimen was taken in Delaware bay several years ago, and is now in Peale's Museum.