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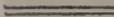
# JOURNAL

OF THE

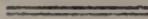
## Academy of Natural Sciences

OF

PHILADELPHIA.



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the food of which they are fond, and which afford them a safe retreat during the periods of incubation and nutrition. Our specimen was considered a curiosity at Egg-harbour, and was unknown there even by name. I have often been on the coast of New Jersey, in the spring and autumn, and was equally unacquainted with this bird.

The sex of this specimen could not be ascertained, as its intestines had been removed before it was forwarded to Philadelphia, and the sexual parts were obliterated.

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*An Account of the Crustacea of the United States. By Thomas Say. Read Aug. 5, 1817.*

The consequence of the discovery of a new genus in this interesting class of the inhabitants of our coasts, has been the revisal of my manuscript descriptions of the Crustacea, and a determination to publish them without further delay, in waiting for more considerable accessions of species. And although the list included in the following paper is not considerable, it may nevertheless form the commencement of a complete account of our crustaceous animals—a very imperfect one it is true, but it may be considered of some importance, in as much as the errors which may be discovered in it, will, by being corrected by competent naturalists, introduce us to a more perfect knowledge of these curious depurators of the ocean.

## ORDER BRACHYURA.

### *Genus* CANCER.

Thorax convergent behind. The second joint of the internal peduncle of the external pedipalpi quadrangular,

notched at the apex internally, for the reception of the following joint: all the feet formed for walking.

*SPECIES.*

1. *C. Panope*. Thorax with about three serrate teeth each side, clypeus porrect, truncate, with a deep fissure, anterior feet glabrous, carpus with a thick spine, hands large, subunequal, fingers black.

Cancer Panope? Rees's Cyclop.

Inhabits oyster beds, &c. common.

*Plate 4. fig. 3.*

Thorax laterally, and on the edge, granulated; three lateral, serrate teeth, and a more or less definite obtuse one, near the posterior canthus of the eye; superior eyelid with two fissures, and a tooth or prominent angle each side, inferior lid ciliate within and with a more prominent tooth near the middle, middle as in the upper lid occupied by a sinus; anterior feet minutely granulated, hands rounded above and beneath, finger perceptibly deflected, and with the thumb strongly toothed within, and black-brown, with impressed striæ; terminal joint of the abdomen not abruptly straitened, rounded at tip; the interior antennæ are comose instead of the larger terminal articulated seta.

Length one inch and one tenth, breadth one inch and a half.

The young of this species are often found on oysters, (*O. virginica*) in our markets, secreting themselves about the hinge of such as are not perfectly divested of the mud in which they had been imbedded. They differ a little in appearance in the different stages of their growth; when very young the cleft in the middle of the clypeus is hardly perceptible, but it gradually deepens with age,

the anterior obtuse tooth also does not exist in the young, but is gradually separated by a sinus from the elevated external angle of the eye as the animal increases in size.

2. *C. irroratus*. Thorax with nine crenate teeth on each side; Clypeus three-toothed; hands with four or five elevated lines on the external side.

Cancer undecemdentatus? Latr. Hist. Crust. et Ins. Inhabits the ocean. Common.

*Plate 4. fig. 2.*

Thorax whitish, with crowded small red granules, a whitish dorsal mark behind the middle resembling the letter H; on each side, two parallel curved lines of white dots, nine or ten in each, sometimes obsolete in the old shell; a few hardly raised obtuse tubercles on the disk; posterior marginal tooth more acute, but hardly more prominent than the others, with an indentation at its base on the hind edge of the thorax; central tooth of the rostrum depressed rather below the line of the two others; Orbits orbicular, two fissures or impressed lines above and two beneath, a little raised into two teeth on each side of the exterior antennæ and into one tooth at the posterior canthus; Thighs ciliate above, and marked by an impressed band near the tips, both joints of the tibia ciliate beneath, tarsi compressed, acute and deeply striate.

Carpus above spotted like the thorax, with an advanced acute spine at the inner anterior angle. Hands moderate,

\* Mr. Savigny in his ingenious work on the organs of the mouth of Insects and Crustacea, has shown that crabs, &c., have in reality sixteen feet; but that six of them are palpiform and applied to the mouth. I have, however, continued to make use of the old terms, carpus, hand, finger, thumb, &c., until the terminology is settled.

equal, with four or five elevated, granulated lines on the outer side, two of which are continued upon the finger, finger somewhat deflexed and with the thumb brown or black at tip, and furnished with regular crenate teeth; terminal abdominal segment triangular, acute at tip.

Length one inch and a half, breadth two inches and three tenths.

The female differs from the male in some respects so particularly that it would be easy to mistake her for a distinct species; to prevent this confusion it is proper in this place to point out the differences. The thorax of the female in two specimens before me is destitute of the white H mark and also of the curved lines of white dots; but the most striking dissimilarity is in the form of the lateral teeth of the thorax, these are exactly of the same number as in the other sex, but the form is different, each one being divided at tip into several smaller tuberculous teeth; the abdomen is but little dilated, it is also hairy; the fingers are rather shorter and more of a deep black than are those of the male. Whether or not it would be correct to refer this species to *C. undecimdentatus* of Fab. and Latr. is not to be positively determined from the very concise description of that crab given by the latter author, but certain it is, it approaches nearer to it than any other with which I am acquainted, but differs from it, as far as I can judge from the description, in not having the "thorax rather dilated behind," neither are the "handclaws somewhat hairy."

The exuvia of this species is often found on the sea beach cast up by the waves. I have not seen the crabs in bays or inlets, they appear to delight in deep water, and

are eaten by the Blackfish, and Sea-basse, being often found entire in their stomachs.

3. *C. granulatus*. Thorax granulate, with five lateral teeth, clypeus with three very obtuse ones.

Inhabits bays and inlets near the sea.

Body and feet spotted with brown and covered with minute, crowded granules, those of the thorax more conspicuous, distant and tuberculiform; spots of the feet and abdomen impressed and placed in more or less obvious lines. Thorax a little uneven, edge all round and teeth granulated; teeth rather large, serrate, hind one a little smaller, anterior ones forming the canthus of the eye. Orbit subovate, a fissure above, an obtuse tooth beneath the anterior canthus, and a fissure beneath the hind one; Clypeus somewhat advanced, with three obtuse, subequal teeth, middle one smaller; Sides of the thorax beneath, furnished with silky hair; Anterior pair of feet with the second and third joint ciliate before, the latter concave above, not longer than the edge of the thorax, with a very obtuse tooth at tip and impressed transverse line; Carpus acutely spined within, no spine on the opposite edge; Hand convex on the back, an elevated line above on the inner side, fingers striate with impressed lines, about four on the thumb, not falcate at tip.

Length about one inch and a half, greatest breadth at the hind teeth near two inches.

The specimen described was a female, for which I am indebted to Mr. Titian Peale. In the form of the body, number of the lateral teeth, &c., it has a great resemblance to *Portunus pictus*. I have to regret the loss of this individual before a drawing was made of it.

Neither of the three species of Cancer which we have here described are sought after as food.

*Genus* PORTUNUS.

Terminal joint of the hind feet formed for swimming. Peduncles of the eyes short, not reaching the anterior angles of the shell. Thorax transverse with five (rarely six) teeth on each side.

*SPECIES.*

1. *P. pictus*. Thorax with five prominent, acute teeth, each side; Clypeus one-toothed; Carpus two-spined and one on the anterior angle of the hand above; terminal joint of the hind feet rounded at tip.

Inhabits sandy shores of the sea. Common.

*Plate 4. fig. 4.*

Thorax with minute granulæ, white, with very numerous red points; four lateral, equal, acute, spiniform teeth, and a similar equidistant one at the hind angle of the orbit of the eye; Orbit oval, with a strong, advanced tooth on the inferior edge, and a perceptible fissure or impressed line above; second joint of the peduncle of the external pedipalpi deeply emarginate at the inner tip; tooth of the clypeus longer than those of the interior canthus of of the eyes, which are also prominent; Thighs silvery above near the tips, second joint of the tibia with an impressed line each side, tarsi compressed, with two impressed lines behind, and one before, posterior ones oval, rounded at tip; Carpus silvery above and spotted with red, two-spined, the inner spine larger and very acute, external one flattened above; Hands equal, almost linear, above silvery, spotted with red, outer edge prominent, and with the inner one granulate, an acute spine at the inner anterior angle, thumb silvery above, edges prominent, and with the finger somewhat linear, hooked at tip, and furnished with irregular teeth; penul-

timate joint of the abdomen deeply emarginate at tip, for the reception of the terminal, pentagonal, small one.

Length one inch and a fifth, breadth one inch and two fifths.

The exuvia of this beautiful species is extremely common on the sea beach. It is known to the inhabitants by the name of *Sand Crab*, and is not used for food. It seems to be closely allied to *P. depurator* and *lividus* of the European seas. The clypeus, strictly speaking, is not three-toothed, those which appear to be lateral teeth are in reality the anterior angles of the orbits of the eyes, elevated. This species does not perfectly agree in all its characters with the genus *Portunus* as defined by Doctor Leach; this very acute naturalist says, that in this genus there are two fissures in the hind margin of the orbits of the eye, whereas in the species here described there is but one; yet there is no doubt but the situation we have here assigned to it is perfectly correct; the fissures may perhaps serve as good characters by which to separate the genus into smaller divisions.

(To be continued.)

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We are indebted to the friendship of Mr. C. A. Lesueur for the plate of the *Cecidomyia destructor* (Hessian-fly) with its parasite, which accompanies the present number.

I forgot to mention in its proper place that the parasitic insect, *Ceraphon destructor*, which is so commonly mistaken for the *Cecidomyia*, after the business of propagation is performed, throws off its wings as a useless incumbrance, in this respect resembling some species of the ge-

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*An Account of the Crustacea of the United States. By  
Thomas Say. Read Aug. 5, 1817.*

(Continued.)

*Genus LUPA. Leach.*

Terminal joints of the posterior feet formed for swimming. Anterior feet equal, arms spinous before; Peduncles of the eyes short, thick; Orbit above with two fissures, beneath at the outer angle with one. Fourth segment of the abdomen of the male elongated, narrower than the preceding. Thorax transverse, nine toothed on each side, the posterior tooth largest.

*SPECIES.*

1. *L. hastata.* Thorax equal, with distant granulæ; clypeus three-toothed; arms three-spined; carpus unarmed.

Inhabits bays, &c. Very numerous.

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Granules of the thorax scattered unequally, obsolete behind, arranged in four lines, two dorsal, and one on each side at the elongated tooth; Clypeus with two equal teeth, and a smaller, but equally prominent conic one connected with the labrum, between the interior antennæ; anterior feet with the third joint three-spined before and one spined at the outer tip; carpus with two elevated lines, the outer one sometimes extended into an obtuse spine; hands somewhat linear, with five or six raised, granulate lines, and a strong spine at base, fingers linear, a little hooked at tip, with impressed lines, and furnished with somewhat regular teeth, about four in each, teeth rounded, compressed, each with a supplemental smaller one at the base each side; fourth joint of the three following pairs of feet, with two short spines at the tip above.

The edible crab is known to every one by the name of "Crab." It is brought to our markets in great quantities, from all the bays and inlets of the sea coast, and is a very acceptable food. Feeds on dead animal matter in its various stages of putrescence, and is one of the many depurators of the ocean. In addition to the particulars already stated by naturalists of its manners, I will observe that it often buries itself in the sand so that no part is visible but the eyes and interior antennæ, these last are then in continual motion, the bifid terminal joint acting as forceps to seize and convey to its mouth the small moluscous animals for food. They are so numerous that the sein fishermen often reject them. The shell is cast annually, generally in the spring, and they are then known by the name of soft-shell crab, are very delicate, and in particular request for the table: in this state the crab is incapable of any defence against its enemies; the male usually re-

tires to a secluded situation for security, but the adult female is protected by a male, whose shell is hard, they are then called *double crabs*. It is sometimes infested by a small worm resembling an *Ascaris*, in considerable numbers; these have occurred to the number of two between each of the lamellæ of the branchia. I have seen them confined to the branchia of the left side only, those of the opposite side were perfectly free in one instance. Worm short, filiform, a little attenuated and flattened before, pale yellowish, extremities rounded, body silvery above and spotted with red.

### *Genus* PINNOTHERES.

Exterior antennæ short, the three basal joints longer, terminal one setaceous, arising from under the interior canthus of the eye; peduncles of the eyes very short, dilated, spherical. Interior antennæ larger, arising from a hemispherical base, and placed beneath the clypeus. External pedi-palpi with the outer division concealed, internal division with the peduncle of one subincurved joint, rounded at tip and incumbent on the mentum, terminal joint bifid, intermediate one subcylindrical, attached behind the external tip of the peduncle. Feet formed for walking.

#### SPECIES.

1. *P. Ostreum*. Thorax rounded before and on each side, somewhat truncate behind, clypeus a little advanced, entire; hand gibbous above near the base of the thumb.

Inhabits the common oyster (*O. Virginica*.)

Plate 4. fig. 5.

Thorax with minute distant hairs, punctured, punc-

tures minute, distant, an impressed, abbreviated, transverse line near the middle; Clypeus sometimes perceptibly emarginate at tip; Sides of the thorax rounded, without a margin or edge; Orbits rounded, eyes composed of minute, red, approximate, punctures; hands clothed with short white hairs, abruptly gibbous above the origin of the thumb; fingers hairy, rectilinear, shorter than the hand, toothed at the base within, and terminated by an abrupt, short, acute hook; penultimate joint of the first pair of feet a little dilated. Abdomen as large as the thorax.

Length seven twentieths of an inch, breadth two fifths of an inch.

A very common inmate of the oyster of our markets, and of more frequent occurrence in that variety called *Fresh Oyster*. Though small, it is excellent food, and those who eat oysters seldom reject it. Where the fresh oyster is opened in considerable numbers, the crabs are often collected and served apart, for the palates of the luxurious. It is a curious fact, that although the female of this species is so very often found occupying the Oyster, the male is absolutely unknown. This is supposed, by those who are not conversant with natural history, to be the young of the common Crab (*Lupa hastata*.)

2. *P. depressum*. Thorax flat, rounded, somewhat truncate behind, edged on each side by a raised line; clypeus advanced, truncate; penultimate joint of the feet dilated; eyes conspicuous.

Inhabits the common Oyster?

Thorax flat, polished, with a marginal raised line of very short dense hair which is broader behind, straitened over the eyes and almost extinct on the clypeus; eyes pro-

portionably larger and more prominent than in the preceding species; Carpus with a line a little elevated on the upper side within; hands suboval, an elevated, obtuse line on the exterior upper side; fingers short; penultimate joint of all the feet dilated, compressed, with minute crenae on the inner edge; tarsi incurved at tip, very acute; Abdomen gradually attenuated, joints transverse, terminal one much smaller than the preceding, rounded.

Length not quite one tenth of an inch, breadth a little more than one tenth.

This description is taken from a male specimen in my cabinet, procured at Egg Harbour several years ago; having taken no note at the time I cannot state decidedly in what shell it was found. It is possible it may prove to be the male of the preceding species.

### *Genus* OCYPODE. *Latr.*

Peduncles of the eyes elongated, inserted into a central and anterior projection of the thorax, and extending in a groove along the front to the lateral angle; Shell rhomboidal or cordate; feet formed for walking.

#### *SPECIES.*

1. *O. arenarius.* Thorax transverse, quadrate, finely granulated, edges minutely crenate. Anterior margin sinuate; hands compressed, serrate; feet very hairy.

*Cancer arenarius.* Catesby, vol. 2. tab. 35.

*Ocypode albicans?* Latr. Hist. des Crust. et Ins. from Bosc.

Inhabits sandy beaches of the sea, in holes of considerable depth.

Thorax entirely covered with granulae, edge with small crenate teeth, which are obsolete on the base and near the clypeus; about one sixth part of the front elongated, rounded at tip, inflected and adpressed to the face, remaining portion of the front sinuated, anterior angles salient, acute, lower eye-brow with larger crenate teeth, and on the cheeks each side of the mouth the granulae resemble short obtuse spines, a curved line arises from a fissure in the middle of the lower eye-lid and terminates at the inferior inner angle; feet compressed, very hairy, surface smooth, sometimes granulate in the females; thighs margined above, the posterior ones with a marginal line beneath also, last joint with an impressed longitudinal line each side, tarsi acute, striate with elevated lines; Anterior feet beneath glabrous, on each side dentate, above somewhat rugose; wrist scabrous, with a spine on the inner angle; hands suboval, compressed, scabrous, above dentate, and on the edge beneath serrate, fingers nearly as long as the hand, with elevated lines; last segment of the abdomen and tail in the male longer than broad.

Breadth of thorax one inch and two-fifths.

This species excavates holes for its dwelling of the depth of three or four feet in the sand of the sea beach, just above the influence of the surf, whence it makes occasional sorties, principally at night, in pursuit of food; runs with considerable swiftness when surprised or dug out of its hole, holding up its arms in a menacing attitude.

The latter end of October or early in November, according to the state of the weather, they leave their residence near the water, and retire a distance from it, where they may hibernate in security; having found a suitable situation, they form a hole of similar appearance to that

which they have just left, and having closed up the entrance, so that it is undistinguishable from the general surface, they retire to the bottom to pass the winter in a state of inactivity:

This species is figured by Catesby in such a manner as to leave no doubt as to its identity with the individual here described. In the West Indies, whence his specimen was obtained, this Ocypode arrives at a size rather more considerable than in this country, but in no other respect, that I know of, does it differ. The species described by Mr. Latreille from Mr. Bosc's work, under the name of *albicans*, seems to agree in some measure with this, but as he does not refer to Catesby's figure, I am not prepared to say it is the same; this uncertainty has induced me to insert the description in this place, notwithstanding the certainty of its having been noticed before.

2. *O. pugilator*. Thorax transverse quadrate, glabrous, a little straitened behind; one of the hands in the male very small, the other very large.

Ocypode pugilator? Latreille, Hist. Crust. et Ins.

Inhabits bay shores and salt marshes.

Thorax, when closely examined, covered with minute granulæ; about one third of the front elongated, deflected and rounded at tip, remaining anterior margin rectilinear, the angles not salient but acute, and without sinus behind on the lateral edge; lower eye-lids regularly dentate; cheeks scabrous; feet almost naked (there are however a few scattering hairs,) somewhat scabrous or rugose; one of the hands remarkably large, longer than the feet, a little granulate, equal above and beneath, fingers nearly straight, with very small tuberculate teeth, thumb distant from

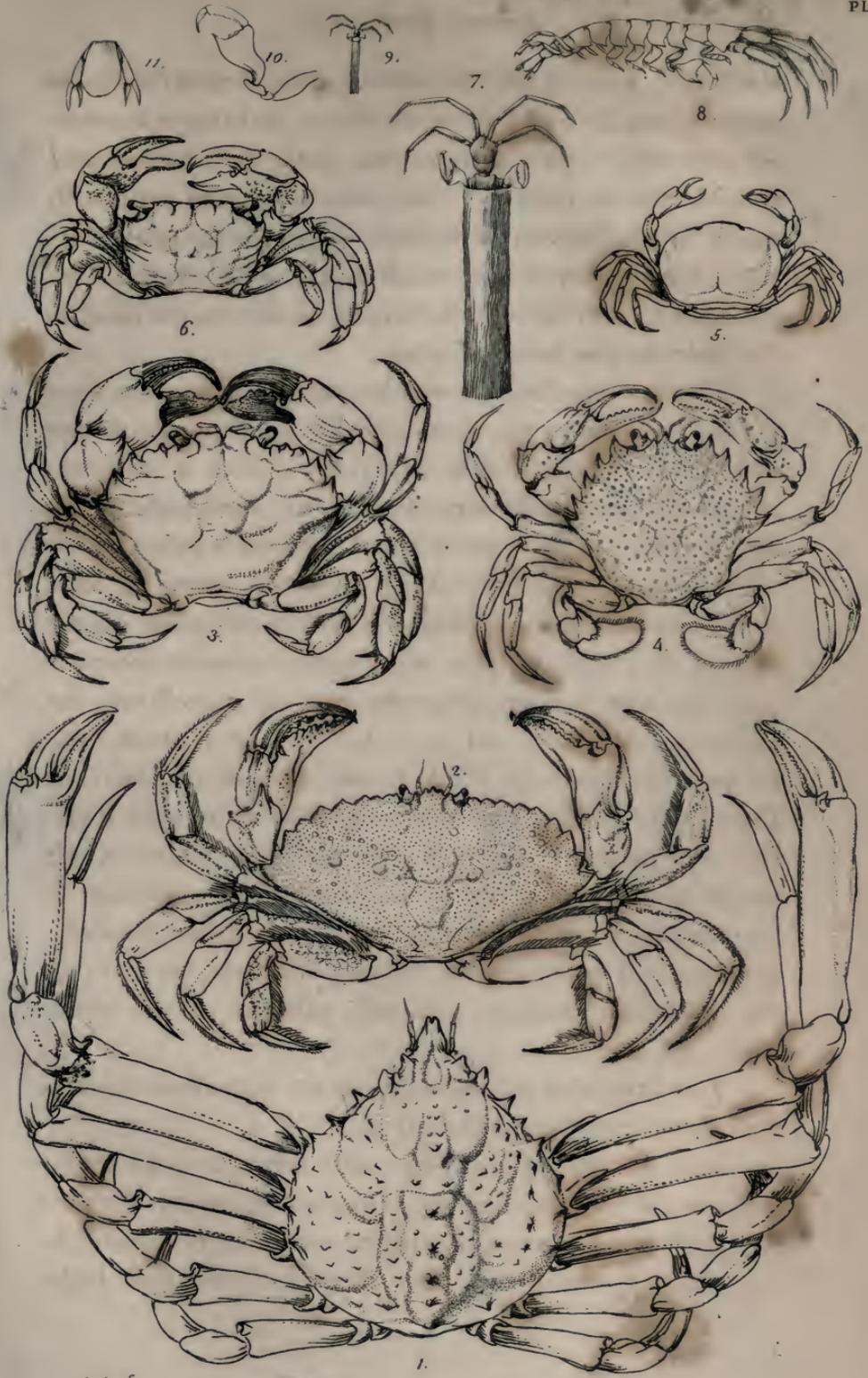
the finger, forming an oval interval, curved near the tip, so as to extend over the tip of the finger, and like it furnished with very small and numerous teeth, both smooth and polished on the inner side; the other hand very small with nearly equal fingers; abdominal segments broader than long; hands of the female small, equal, a little bearded on the inner side of the tip; the fingers of the smaller hand of the male are also bearded at tip.

This is the animal so well known to the inhabitants of the sea coast under the name of "Fiddler," an appellation almost universal, and probably derived from a supposed similitude between the large hand of the male and the fiddle or violin. I have never heard them utter any cry.

The pugilator digs a hole in the earth, where the sand is not too abundant, choosing usually a situation on the margin of a bay, or other salt water, in which the earth possesses some tenacity, that the walls of its cell may be the more permanent, and not liable to cave in upon him. In such situations the Fiddlers are extremely numerous. During the day they seldom venture far from their dwelling, but upon the slightest appearance of danger whole troops of them disappear immediately, taking refuge in their holes, sometimes when the danger is imminent an individual will seek security in a dwelling not his own; in this case the occupant patiently submits to the intrusion.

The large claw is sometimes on the left side and sometimes on the right, indifferently.

The species *vocans* of Linnæus seems to have included several perfectly distinct animals, and great is the confusion in the synonyma of different authors in relation to it. Mr. Latreille has been able to distinguish three



C.A. [Succin D x Sculp.

distinct species, referred by authors to this one; these he has accordingly separated under the names *vocans*, *maracoani* and *pugilator*, the last of which, judging from the very short description of that author, appears to be the same with the one here described, although he gives, as its habitat, the American ocean. In manuscript I had named it *Citharoedicus*, but averse from an unnecessary multiplication of names, I have adopted the above, notwithstanding the objection stated. It belongs to the Genus *Uca* of Dr. Leach.

3. *O. reticulatus*. Thorax quadrate, a little transverse, with oblique, hardly elevated rugæ on each side behind; hands rather large, equal, ovate, punctured, fingers smooth; tibia of the four hind feet, thickly clothed with fine incumbent hair; body laterally reticulated.

Inhabits muddy salt marshes.

*Plate 4. fig. 6.*

Thorax with numerous, minute, irregular punctures, an impressed pyriform line on the middle, which is narrowed and more deeply impressed on the clypeus, behind this is a transversely oval one, from which proceeds two lines to the base of the thorax, a line arises from the interior orbits of the eye and curves to the pyriform one; clypeus truncated, with an abbreviated, longitudinal line each side; a lateral obtuse sinus more or less distinct near the anterior angles of the thorax each side, anterior angles acute; tip of the clypeus and labrum granulated, the granules of the latter much larger; cheeks and sides of the body, with numerous, parallel, longitudinal lines of granules, granules in pairs and surmounted at regular distances by perpendicular, equal hairs, which are inflected and hori-

zontal before their tips, with the most perfect regularity, giving to the whole surface a reticulated appearance; beneath the lateral edge of the thorax are about six short ciliate curves, disposed in a longitudinal series; no elevated lateral line; feet rather short. thighs mucronate above near the tip, with minute aculeæ behind, which are wanting on the posterior ones; tibia clothed with fine, dense, incumbent hairs; tarsi short, acute, striate with six ciliated lines; anterior feet rather large, thick, scabrous with minute abbreviated, moniliform lines; carpus unarmed, hands rounded beneath, with a moniliform edge above, which becomes almost serrate on the thumb; second peduncular joint of the external pedipalpi, with a strong, elevated line on the inner margin.

Inhabits the banks of creeks, &c. in salt marshes, where it digs a hole for a habitation in the manner of the Fiddler, with which it associates by dwelling in the same vicinity.

The small reticulate divisions of the sides of the body, are either perfectly square, rhomboidal, or hexagonal, according to the direction in which they are viewed, they may also resemble right lines by a perpendicular view, which shall bring the inflected portion of the seta parallel over the granulated line.

Fearful of multiplying genera without full and sufficient grounds, I have retained the genus *Ocypode* in the comprehensive sense of Mr. Latreille, in order to place under it the present animal. Doctor Leach has divided *Ocypode* into several genera, but perhaps the characters are not sufficiently noted, or, which is more probable, the division must be still further extended. With this view all the characters possible ought to be given, in order to enable naturalists to

decide without loss of time. A very good character may be drawn from the lateral line; this line, which does not exist in the present species, arises from near the middle of the edge of the thorax, passes obliquely across the side of the body, and terminates at the penultimate hip joints; in the two preceding species, this part is as prominent as the edge of the thorax. A second good character may be derived from the form and proportion of the second peduncular joint of the external pedipalpi, in the two preceding species, and their congeners, this part is formed, as it were, by a prolongation of the lines of the basal joint, of which it is not more than half of the size; but in the present species the form is altogether different, and approaches to that of the same part in *Grapsus*, and perhaps *Gecarcinus* of Leach; it is nearly oval, a little emarginate at tip for the insertion of the palpi, and inclined inwards, so as to form an angle with the preceding joint, thereby leaving a considerable interval in the middle of the mouth, in size also it is nearly equal. The very dense brush of hair, which is attached to the inside of the third and fourth pairs of hips, may furnish another character. It is not conspicuous in the species under consideration. In this species also the tibia and tarsi are not spinose as in *Grapsus* and *Gecarcinus*, neither are the tarsi dilated so as almost to resemble a third joint of the tibia as in the former. The *reticulatus* in the rigid arrangement of Dr. Leach cannot be referred to the *Ocypodes* of which the type is *O. ceratophthalma*; neither will it agree with *Uca*, of which the anterior feet are very unequal, nor with *Goneplax*, in which they are very much elongated.

By its cubical body and general habit, it certainly approaches the *Ocypodes*, &c. but by its oral and other arti-

ficial characters it seems to claim proximity to the genus *Grapsus*, notwithstanding its diverse mode of life.

These considerations and comparisons have induced me to indicate the characters partially, of a new genus for this animal, under the name of *Sesarma* (from *σαίρω* the act of gaping,) this genus of course can be adopted or rejected, by those who have an opportunity to examine a more numerous list of species of its neighbouring genera, than I can obtain access to.

*Genus* SESARMA.

Antennæ short, inserted in a right line between the eyes, under the clypeus; seta of the interior ones shorter than the preceding joint; second joint of the peduncle of the external pedipalpi, oval, as large as the first, and forming an angle with it on the inner edge; palpi attached to the outer tip, first joint compressed, rather longest, second and third nearly equal, not reaching the base of the second joint of the peduncle; body somewhat cubical; arms equal; no oblique lateral line, or prominent dense hair between the third and fourth hips; tarsi simple, conic, acute.

*Genus* LIBINIA. *Leach.*

MAJA. *Fabr. and Latr.*

*Thorax* rounded, spinose, with dense hair; *rostrum* entire: *eyes* hardly thicker than their peduncles; *orbit* with a fissure above and one beneath *exterior antennæ* as long as the rostrum, the first joint longer than the second, the third slender: *external double pedipalpi* with the second joint of their internal peduncle, abruptly and deeply emarginate, for the insertion of the palpi, and with its interior

side, near the base, emarginate for the reception of the prolongation of the first joint: *anterior feet* not much thicker than the others, which are similar to each other, and not very long.

*SPECIES.*

1. *L. canaliculata.* Thorax densely hairy, with about seven lateral spines, and a few usually shorter ones on the back; Rostrum emarginate at tip, canaliculate between the eyes; anterior feet unarmed, granulated, hands elongated; fingers white at tip.

Inhabits bays and inlets of the coast.

*Plate 4. fig. 1.*

Rostrum beneath glabrous and white, a deep notch at tip; Orbits orbicular, with a spine before, and three smaller ones beneath, a fissure above near the posterior canthus, and one opposite beneath; Labrum deeply impressed in the middle; anterior angles of the mouth prominent, forming an irregular tubercle, behind this tubercle, and the posterior spine beneath the eyes, is a profound puncture like an aperture, from which arises a deep groove, that curves before the anterior lateral spines and joins an impressed, abbreviated, transverse line which is on the middle of the thorax, the above line is confluent before its termination in the transverse line with a less deeply impressed one which meets the fissure, then curves over the orbit of the eye, and terminates at the base of the rostrum; two of the anterior lateral spines of the thorax are placed lower than the others, appearing to be interrupted continuations of the margin or edge of the thorax; a series of four or five tubercles placed longitudinally on the back behind the impressed line of the middle, and two

often obsolete ones before it; several other spines more or less conspicuous, but of which about four are always more prominent, are placed on the back between the dorsal and lateral rows. Feet long, covered with short dense hair, second and third pairs rather longest; tarsi long, conic, incurved, without striæ, furnished at tip with a yellowish glabrous nail, which is perceptibly a little elevated at its origin above the common surface of the tarsus of which it is a little more than one fourth of the length, grooved with a line each side and one beneath to a level with the general surface of the tarsus; anterior feet granulated, wrists unarmed, or with an obsolete tubercle on the inner angle, hands subcylindrical, a little compressed, linear, hardly smaller near the base, condyles of the base prominent; fingers about half as long as the palm, with regular obtuse teeth, and an impressed lateral line on each.

Length about two inches and a half, breadth more than two inches.

Known on many parts of the coast of the United States by the name of *Spider Crab*, *Sea Spider*, &c. is very commonly brought ashore by the nets of the fishermen, but is not used as food. Walks with a wary, measured step, as if fearful of making a noise. Comes near to the description of *M. hircus*, *Gmel.* but differs in not having the "arms muricated;" to *L. emarginata* of the *Zool. Miscel. vol. 2. tab. 108*, it is closely related, but the arms are much longer.

Genus LISSA. *Leach.*MAJA of *Fabr. and Latr.*

*Thorax* tuberosa, with a fissile rostrum: *rostrum* with the lacinæ meeting; *eyes* rather thicker than their peduncles; *orbit* with one fissure below and another behind. *External antennæ* with the basal joint thicker and longer than the next. *External double pedi-palpi* with the second joint of their internal peduncle, half as large as the first, and truncate; emarginate. Anterior feet hardly thicker than the others (of the male, as long as the body; of the female, shorter than the body;), which are similar to each other and of moderate length; *tarsi* simple.

1. *L. fssirostra*. Rostrum depressed, fissile, tapering to the tip; thorax verrucose; terminal joint of the abdomen transversely elliptical.

Inhabits the coast of Long Island.

Thorax destitute of spines, unequal, a little verrucose, gradually tapering from behind to the orbits, sides rather abruptly deflected not decurved, impressed above the insertion of the anterior feet, edge of the thorax verrucose, edge of the shell uninterrupted; orbits of the eyes round and equal before, without any spine or tooth in front, posterior canthus with a large, triangular, prominent, depressed tooth, distinguished from the orbit by a profound fissure above and sinus beneath; rostrum much depressed, broad at base, diminishing by a line somewhat curved, to an obtuse tip, and cleft to the base; body beneath impressed between the anterior feet; anterior feet slightly verrucose, carpus without any spine, hands equal, punc-

tured, linear, not elongated: fingers nearly as long as the hand, punctured above, with an impressed punctured line each side, and white tip, may teeth within; terminal joint of the abdomen transversely elliptical.

Length one inch and three fourths, breadth one inch and one fifth.

This curious, and, as I believe, new species, was found by Mr. C. A. Le Sueur, on the coast of Long Island, and kindly communicated by him to the author. It is a male. Upon the body, rostrum, and feet are a number of hooked, short, stout, yellowish hairs, arising from pores, and curving in various directions, but generally backwards; they are not unlike in appearance to a young vegetable production: these arrest and entangle the loose portions of fucus, or other marine plants, amongst which these animals are found, so as to conceal them from their prey, that they may the more readily surprise it; so completely are they sometimes covered as to appear like a moving mass of various kinds of marine plants, no portion whatever of the animal being visible; this habit is not peculiar to the individual here described, but is most probably common to the species of this and the cognate genera, such as the genus *Pisa*. Mr. Le Sueur informs me, that he has seen Crustacea in New Holland, with the same habit; the fucus, in some instances, was so much entangled with the hooks, feet, &c., as to be with difficulty removed.

(To be continued.)

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*An Account of the Crustacea of the United States. By  
Thomas Say. Read October 7, 1817.*

(Continued.)

Since the preceding part of this paper was put to press, Captain James Hamilton presented to the Academy several crustaceous animals collected by himself in the Gulf Stream; amongst these were some specimens of *Lupa pelagica*, of which I have inserted a description in order to exhibit the difference between it and the *L. hastata* which it resembles considerably.

*LUPA pelagica.* *Clypeus* four-toothed; third joint of the anterior feet four-spined; *carpus* two-spined; *hands* ciliated on the interior upper edge.

Inhabits the Gulf-Stream.

*Portunus pelagicus.* *Fabr. and Latr.*

*Thorax* variegated, with minute granulae; seven of the lateral teeth equal, equidistant, one at the posterior canthus of the eye larger, posterior tooth much larger, spiniform; *clypeus* four-toothed, and the anterior canthus of the eye elevated, the two middle teeth rather smaller, third

joint of the anterior feet four-spined on the anterior edge, posterior spine smallest, and nearer to the next; *carpus* two-spined; *hand* with six or seven elevated lines, the upper one terminating in a spine at the base of the thumb, a short, thick spine at the base of the hand and the anterior angle of the *carpus*; *fingers* hooked at tip, with impressed lines, each armed within by about four teeth, which are furnished with lateral, accessory, smaller ones; remaining feet annulate with dusky. Length of the specimen three fourths of an inch.

From this description of the *pelagica*, compared with that of the *hastata*, it appears, that the principal difference consists in the number of teeth of the clypeus, of the number of spines on the third joint of the anterior feet and *carpus*, and the elevated thoracic lines; the habitat also indicates a difference, the former being pelagic, and the latter littoral; the colour of the *hastata* is olive-green on the thorax and feet above, beneath white, anterior feet within bright blue, fingers of the male tipped with purple, of the female red, with purple tips; condyles and spines of all the feet more or less red, remaining feet bluish green on the sides.

The *pelagica* is generally found amongst floating fungus, &c. it is subject to the attack of a parasitic worm, which may be seen through the shell, resembling a small, oval, yellowish spot; these are frequent on various parts of the animal, and may readily be mistaken for maculæ on the shell.

#### *Genus* GRAPSUS.

*Thorax* subquadrate, depressed; *eyes* not larger than the peduncle, which is short and placed at the anterior angles; *abdomen*, in each sex, seven-jointed; *tarsi* dilated, and,

with the second joint of the tibia, armed with moveable spines; *hands* equal.

*SPECIES.*

*G. cinereus.* *Thorax* rugose, with a sinus behind the anterior angle; *clypeus* entire; third joint of the first pair of feet serrate within, and dentate at the tip; *carpus* one-spined; *hands* granulate beneath.

Found in the Gulf-Stream, common.

*Grapsus cinereus?* Latr. hist. nat. Crust. et Ins. from Bosc.

*Cancellus marinus minimus quadratus*, Sloane's Jam. vol. 2. tab. 245, fig. 1.

*Thorax* cinereous, varied with brown, anterior angles acute, with a sinus behind them on the edge, between the eyes are two impressed, abbreviated lines; *clypeus* entire, hardly undulated at tip; third joint of the anterior feet serrate on the inner edge, at the tip four-toothed; *carpus* with an obtuse tooth within; *hands* rather large, granulate beneath; *fingers* dentate within, teeth conspicuous: all the remaining feet, except the last, dentate at the hind tip of the third joint, that of the second pair with a much larger tooth; all rugose above, and, with the exception also of the posterior pair, armed with two moveable, short spines, at the tip of the third joint, which are separated by an impressed line, which is obsolete on the last pair; *eyes* sanguineous. Length two fifths of an inch.

Taken by captain Hamilton in the Gulf-Stream, and by him presented to the Academy. Sloane, in his history of Jamaica, calls it *Cancellus marinus minimus quadratus*, and observes that it is found on *Sargaso* and other sea plants. We also learn that Columbus, in his celebrated voyage which discovered the West Indies to the civilized

world, concluded that he was approaching land, in consequence of finding this animal alive on some floating marine plants. To a specimen under examination a *Spirorbis* is attached.

*Genus* PLAGUSIA. *Latr.*

*Thorax* a little narrowed before; *anterior feet* short; *mouth* nearly closed; *Intermediate antennæ* reflected into two profound longitudinal fissures of the front, which divide the clypeus above.

SPECIES.

*P. depressus*. *Thorax* leprous, three-toothed on each side; *carpus* with an impressed line above, and prominent, emarginate, angle within.

*Inhabits* Gulf-Stream.

*Grapsus depressus*—*Latr.* Gen. Crust. et Ins.

*Cancer depressus* of Authors.

Cabinet of the Academy.

*Thorax* with numerous distant punctures, and exhibiting the appearance of being covered with scales, each of which is bounded before by a line of impressed points, furnishing hairs; *dorsal foraminæ*\* rather large, oval, transverse, open; *mouth* closed; recipient grooves of the interior antennæ, terminating nearly in a line with the hind margin of the orbits, separating the clypeus into three parts, of which the intermediate division is largest, emarginate at tip,

\* Not knowing what term has been made use of by Naturalists to express these parts, I have applied this for the present; they consist of two small apertures situate near each other, transversely, about the middle of the thorax, just before the abbreviated transverse line; they might furnish characters, drawn from their form and relative position; they are sometimes parallel, sometimes oblique, round, oval, &c.

with an elevated margin, longitudinal impressed line on the middle, and two small tubercles above; lateral divisions less than half as large as the preceding, margin suddenly raised behind the exterior antennæ; *exterior antennæ* with the first joint dilated before near the tip; three serrate teeth each side of the thorax, hind one smallest and placed about the middle, second and third equidistant and proportionally larger, the posterior canthus of the eye elevated into a tooth, with a small tubercle within its base; *coxæ* with two elevated, somewhat comose, scales, of which the anterior one is acute, obsolete on the four anterior feet, and the posterior one obtuse; *carpus* with a depressed spine within, which is emarginate at tip, above with distant, small tubercles, and a double, darker, impressed, submarginal line above, interrupted behind; *hands* granulate, above with small tubercles, and two impressed lines; *fingers* deflected, with obtuse teeth, tip flattened and brown within; remaining feet with two ciliate lines, second joint of the tibia with three; *tarsi* with but one ciliate line, and a double line of moveable spines beneath; tip of the preceding joint about five-spined beneath; spine, near the tip of the thighs, large; colour variegated, tibia darker, spotted; beneath white immaculate.

The very peculiar situation of the intermediate antennæ, in longitudinal recipient grooves, together with the closed mouth, &c., certainly justifies the separation of this, and its neighbouring species, from the genus to which it has hitherto been referred. I have here described it, that it may be compared with its analogue of the Mediterranean, which is most probably distinct.

Taken in the Gulf-Stream, and presented by Captain Bartling.

(To be continued.)

*An Account of the Crustacea of the United States. By Thomas Say. Read November 4, 1817.*

(Continued.)

The two following undescribed animals possess characters so distinct from any genus hitherto established, that I have thought proper to connect them under a new genus. By the conformation of their organs of locomotion, they will serve to approximate still more closely the orders *Brachyura* and *Macroura*, than has been done by the genus *Porcellana*. To this genus I have applied the name of *MONOLEPIS*,† from the Greek words signifying *one* and *scale*, in allusion to the conformation of the tail. I shall here lay down its characters, at length, distinguishing them into essential, natural, and artificial, and finally note the affinities of the genus.

#### Order MACROURA.

*Head* intimately united with the thorax; *feet* ten; *abdomen* beneath furnished with five pairs of natatory feet; *tail* with lateral foliaceous lamellæ.

#### Genus MONOLEPIS.\*

##### *Essential Character.*

*Hind-feet* very small, folded on the posterior angle of the thorax; *caudal lamellæ* simple on each side.

##### *Artificial Character.*

*Thorax* oblong, narrowed before, equal, emarginate over the insertion of the abdomen; *eyes* very large, remote, lateral; *external pedipalpi* incurved, joints subequal, the

† From *μνος*, one, and *λεπίς*, a scale, in allusion to the caudal lamellæ.

terminal one abruptly straitened, internal peduncle with the radical joint somewhat dilated on the inner edge, second joint half as large as the preceding, suboval, entire, rounded at tip; *anterior feet* didactyle; *second, third, and fourth* pairs simple; *fifth* pair much smaller and generally terminated by setæ; *abdomen* not longer than the thorax; *tail* furnished with a single lamellæ on each side.

*Natural Character.*

THORAX CONVEX, equal, longitudinally oblong, gradually a little narrowed before, so as to pass between the eyes, terminating before in a short rostrum, posterior margin of greatest breadth, emarginate over the insertion of the abdomen, posterior lateral angles, with an abbreviated, slightly impressed groove above, for the reception of the posterior feet, sides of the body abruptly deflected, vertical, slightly grooved to receive the feet; *eyes* remarkably large, rather thicker than their peduncles which are short, inserted on each side of the anterior part of the thorax, and destitute of prominent orbits; *antennæ* four, placed between the eyes, *external ones* eleven-jointed, inserted between the anterior angles of the mouth and the base of the peduncles of the eyes, folded upon themselves at the third joint when at rest, *first and second joints* nearly equal, the former cylindrical, the latter a little dilated beneath, with a few hairs, *third* rounded half as large as the preceding; *fourth and fifth* very short, subequal, *eighth* as long as the two preceding ones conjunctly, terminated by two setæ which extend to the apex of the antenna, *terminal* joint minute, tipped with a seta; *interior antennæ* thick, bifid at tip, folded and concealed on each side of the rostrum, and attached to a large, rounded, conspicuous peduncle; *body* beneath (*pectus*) with an

abrupt, profound fossula for the repose of the abdomen; *feet* moderate, anterior ones didactyle, second, third, and fourth pairs equal, simple, posterior pair very small, folded on the lateral angles of the thorax, and terminated by elongated setæ.

ABDOMEN semicylindric, not longer than the thorax, of six segments, first segment very short, concealed by the thorax, second, third, fourth, and fifth equal, consimilar, transverse, convex, with acute posterior lateral angles, sixth segment very short, depressed; *natatory feet* large, prominent, internal division of the bifid tip, very small; *tail* as broad at base as the terminal segment of the abdomen, rounded at tip, simple, concealing the lateral foliaceous appendages; *lateral lamellæ* composed each of a single, small, membranaceous, suboval piece, ciliated with long hair, and supported by a short peduncle.

SPECIES.

1. *M. inermis*.\* *Tarsi* simple; *hind feet* very small, terminated by three setæ; a large truncate tubercle behind each eye; *rostrum* deflected.

*Inhabits* the eastern shore of Maryland.

Cabinet of the Academy.

*Thorax* olivaceous-green, with minute darker spots, an impressed circle between the posterior recipient grooves, two small, geminate, deeply impressed punctures, on the middle of the thorax, before which on each side is an oblique, irregular, impressed line; *clypeus* unequal, extended into a short rostrum, which is deflected, adpressed to the face, margined, and furnished with a tooth on each side near the eyes; a large truncate tubercle behind each eye, upon the lower-edge of the body, as long as the peduncle of the eye; *anterior feet* rather small,

shorter than the others, hand gibbous above and furnished with a tubercle at the base within; *tarsi* simple as long as the preceding joint, those of the posterior feet furnished with three, elongated setæ at the extremity; *pectoral groove* with the margin elevated, interrupted, unequal.

Length of the thorax one fourth of an inch.

Of this interesting animal I found several specimens on the eastern shore of Maryland, which had been cast on the beach by the reflux tide. They appeared desirous to protect themselves from the dashing of the surf, and the influence of the sun, by burrowing in the sand, in order to wait the return of the tide; but their efforts had no further effect on the compact sand, than to raise a small portion of the surface, which, by the action of the waves was spread over them so as to be distinguishable from the general surface by a small elevation.

2. *M. spinitarsus*. *Tarsi* spinose beneath; tubercle behind the eyes obsolete; *hind feet* terminated by three setæ; *rostrum* deflected.

*Inhabits* South Carolina.

Cabinet of the Academy.

*Clypeus* rather prominent between the eyes; *rostrum* deflected, and adpressed to the face; tubercle of the side of the body obsolete; *tarsi* armed beneath with about seven, rigid, acute spines, of which the fifth one is largest, and the sixth one smallest, tip incurved, acute; *pectoral groove* with the margin simple, equal; *hind feet* smallest, terminal setæ longer than the tarsus, and inserted near the tip.

Length of the thorax rather more than  $\frac{1}{4}$  of an inch.

This description is drawn from two specimens in the possession of the academy which were found about thirty

years ago, on the coast of South Carolina; they had been preserved in spirits, but were lately taken out, to be more conveniently arranged in the cabinet, by exposure to the air and the evaporation of the liquid, they had become considerably contracted, but the striking character of the spinous tarsi, even if the other traits were deceptive, from desiccation, is very sufficient to distinguish it from the preceding species.

The characters of the remarkable animals of which I have here thought proper to construct a new genus, widely differ in essential particulars, from those of all other genera, as defined by naturalists. From a transient view, or slight examination, we would be disposed to refer this genus to the first order of Brachyura, in consequence of the great similarity of habit, which its species bear to that of the individuals of that order. But however closely it may be allied to the Brachyuræ in point of external figure, it is very certain that the character, drawn from the conformation of the caudal lamellæ, is of itself sufficient to exclude it absolutely from that natural group of the Crustacea, in which the tail is invariably simple, or destitute of lateral appendices of any kind.

The precise situation it ought to occupy in the order to which I have assigned it, may perhaps be, with more difficulty, determined. This difficulty does not arise from any proximity, which *Monolepis* can claim, with any of the existing genera, but, in consequence of its remoteness from either of them. There is no genus of the genuine Macroura which is furnished with a less number than two foliaceous appendices on each side of the tail, and but one (*Porcellana*) that has the abdomen inflected into a groove beneath the body. The resemblance of this last genus

to the Brachyura is so imposing, that it is but recently it has been referred to its true place in the system, yet it is worthy of remark that the lateral processes are very conspicuous, crustaceous, and never withdrawn under the middle division. In *Monolepis*, on the contrary, the lamellæ of the tail are minute membranaceous, hyaline, and entirely concealed beneath the middle division, to which they are so closely applied that the unassisted eye would not detect their presence.

These differential characteristics, by which the genus under consideration is distinguished, combined with the form of the antennæ, which it must be confessed is very closely allied to that of the Brachyura, seem to indicate its true situation in the system. It would indeed appear to supply an intermediate shade, a more closely connecting link in the gradation, by which the two orders to which I have referred, are approximated. Hence in an arrangement perfectly natural, it would be the first of the order, but in the artificial system it will precede the genus *Porcellana*, forming of itself a division of the Macroura.

### *Genus* HIPPA.

Hands simple, compressed and oval; the tarsus of the second and third pairs of feet lunated, of the fourth triangular. *Eyes* supported upon a filiform peduncle.

#### SPECIES.

1. *H. talpoida*.\* *Body* convex, oval; four anterior segments of the abdomen not inflected and having the natatory appendices of the tail, reflected on their sides; *tail* elongated, more than half as long as the body, sublanceolate; *clypeus* with two sinuses forming three teeth; *eyes* minute.

*Inhabits* the coast of the United States; common.

Cabinet of the Academy.

*Thorax* imbricately rugose before, rugæ interrupted, undulated on their edges; an impressed, abbreviated, transverse line, near the anterior teeth, and a curvilinear one before the middle; deflected margin dilated and ciliate behind the middle, and subserrate before the middle; *external antennæ* as long as the thorax, with the second joint of the pedicel largest, of the colour of the thorax, and two spined at tip: at the base before, of the anterior spine, a deep fissure, forming almost a third tooth: third joint convex above, with a fissure near the exterior tip; fourth joint cylindrical, attenuated at base to receive an elongation of the preceding one: *eyes* very small, pedicels filiform, prominent; *feet* and dilated basal joint of the external pedipalpi ciliated; *anterior feet* with the third joint dilated, and traversed by impressed, interrupted lines of ciliæ; fourth joint mucronate at the exterior tip: fifth triangular, margined within with reflected ciliæ: *hand* margined on the outside; *tail* and last segment of the body reflected under the thorax, nearly reaching the base of the palpi, attenuated, sublanceolate, margined, with reflected ciliæ above, and inflected ones on the edge, with two short impressed lines at base.

Length from the clypeus to tip of tail two-inches, greatest breadth near three-fifths of an inch.

Known generally on the coast by the name of *Sand-bug*, and may be found burrowed in the sand of the beach, at the recess of the tide; its *exuviae* is frequent on the line formed by the extreme wave. This species certainly approaches very closely to the *H. emerita* of authors, but Mr. Latreille observes of that animal, that the antennæ are

half as long as the thorax; this character, if constant, and not a sexual difference, is very sufficient to distinguish that from our specimen, in which the antennæ are equally long with the thorax. In other respects this Hippa agrees very well with the excellent detailed description of the *H. emerita*, by Mr. Latreille, in the *Hist. Nat. Crust. et Ins.* It may not be superfluous to observe, however, that all the descriptions I have seen of that species, with the exception of the detailed one above-mentioned, represent the last segment of the tail as oval; and although under the generic head Mr. Latreille's words are, "son dernier segment est alongé, triangulaire," yet under the descriptions of species, we have "Caudæ ultimo segmento ovato."

### Genus PAGURUS.

*Interior antennæ* short and bifid at tip; exterior ones setaceous and longer; *body* oblong, *thorax* crustaceous; *abdomen* vesicular, naked, soft and furnished at tip with hooks or holders.

#### SPECIES.

1. *P. pollicaris*.\* *Thorax*, with the first segment, depressed, rounded and broader before; *right hand* larger, granulate, almost tuberculate, subspinous above on the wrist: *thumb* above elevated into a prominent angle, *hand* and *finger* crested and denticulated beneath.

*Inhabits* the coast of the United States.

Cabinet of the Academy.

Anterior segment of the thorax subcordate, truncate behind; posterior segment gradually dilated to the base, where it is emarginate for the reception of the abdomen; small scales at the base above of the pedicels of the eyes

small, simple, somewhat concave on the disk, and terminating in a rather obtuse point; *hands* unequal, the right one larger, covered with large and conspicuous granulæ, beneath crested, and dentated to the tip of the finger; *thumb* above projected almost into a right angle; *wrist* with scattered but larger tubercles than those of the hand, subspinous above; thumb of the smaller claw not angulated; *thighs* of the second and third pairs of feet, glabrous, above rugose, two following joints glabrous, above spinous, somewhat hairy; *tarsi* mucronate, nearly equal to the two preceding articulations conjointly, ciliate with hair, compressed and strongly marked by an impressed line on each; appendice to the pedicel of the exterior antennæ as long as the eyes.

Length of the thorax one inch and one fourth.

A large species; it is often cast ashore during the prevalence of heavy north-east winds, otherwise it is not often found. Inhabits our largest species of shells, such as *Natica rugosa*, *Pyrula caniculata*, *Pyruly* (*Fulgur*, De Monfort) *eliceans*, &c.

2. *P. longicarpus*.\* *Right hand* larger and longer than the left: *wrist* and *hand* rather long, linear and granulate; *fingers* short, white, equal.

Inhabits bay shores.

Cabinet of the Academy.

First segment of the thorax rounded, narrowed behind, and truncate at tip; second segment gradually dilating behind, emarginate at base for the reception of the abdomen; small scales at the base above of the pedicels of the eyes simple, concave on the disk, and terminating in a rather obtuse point; *anterior feet* somewhat elongated;

*wrist* linear, beneath ventricose, as long as the hand, scabrous, with a light groove above, formed by two lines of granules; *hand* linear, granulate, with a moniliform edge beneath, and raised line on the exterior side; *second* and *third pairs of feet* elongated, glabrous, with a few hairs, two penultimate joints punctured, and above serrate, *tarsi* scabrous, cylindrical, incurved, as long as the two preceding joints conjunctly: feet annulate.

Length of the thorax three tenths of an inch.

Very common in our estuaries are generally seen near the edge of the water, running actively about seeking food, or a more commodious or elegant shell, than that with which they are already furnished; they are very quarrelsome and approach each other with great caution. When two of them unexpectedly meet, they immediately and rapidly recede from each other, to a safe distance, in order to consider their respective strength: a combat sometimes ensues, which consists of a variety of movements, the object of which is to drag the adversary out of his dwelling. I have seen a large and powerful individual, whose shell was old and broken, attack one of inferior size, with the obvious intention of plundering him of a shell superior to his own.

They take possession of a *Nassa* and a *Turbo*, which are very numerous on our coast; but they may be found in almost every different univalve, regardless of the species; they take possession of any one, that is of a commodious size, but never, as far as I could observe, do they destroy, or offer violence to, the original inhabitant or fabricator of the shell. When recent, the feet are annulated with reddish-brown and whitish.

## Genus ASTACUS.

*Antennæ* inserted in nearly the same horizontal line; *six anterior feet* didactyle; the anterior pair largest; middle division of the caudal lamellæ broader at base; external division biparted.

## SPECIES.

1. *A. marinus*. *Rostrum* two or three-spined; each side, a smaller simple one each side of the base, one more distant on the thorax, one usually beneath near the tip; *carpus* above five-spined; *hand* six or nine-spined on the inner edge.

*Astacus marinus americanus*.—Seba tom. 3. tab. 17. fig. 3.

*Inhabits* the rocky parts of the coast.

Cabinet of the Academy.

*Body* with numerous, small, unequal, excavated dots; *thorax* with a dorsal, linear, cicatrice, drawn from near the tip of the rostrum to the base of the abdomen, the last *joint* of the *abdomen* with two remote fascicles of hairs at tip, lateral angle duplicate beneath; *tail*, middle division simple, one-spined each side near the tip, a fascicle of hair near the base above, inner lateral lamella one-spined at the external angle, external one with rather acute spines at the junction of the accessory plate, outer margin rugose; colour, when recent, olivaceous-black, with darker spots, and varied with yellowish bands, beneath and tips of the spines orange-red. Caudal cilia fulvous.

Length

Seba appears to have been the only naturalist who has considered this species as distinct from the very prox-

imate European one. Under the trivial name here adopted he has figured it in his large work. There is no doubt but they are exceedingly similar, and it is probable that at the first view no one would suppose them distinct; but if we may rely on the laconic descriptions which have been given of the *gammarus*, there are certain traits of difference, sufficient to authorize a separation of the species. The *gammarus* is said to have a double tooth or spine each side of the base of the rostrum, the rostrum itself has four or more teeth each side, the bands have four, five, or six spines on the inner edge; in our species the teeth at the base of the rostrum, are small and simple, the rostrum is two or three toothed each side, and the inner edge of the bands six to nine spined.

The Linnæan name *gammarus* was rejected by Fabricius, and *marinus* was substituted in its stead. Notwithstanding this authority, Dr. Leach has, and, I think with great propriety, restored the name applied by Linné, inasmuch as it was given and published prior to that of the Entomologist of Kiel, and this reason, if the word be anywise admissible, according to the rules of the science, is I should conceive, ample of itself. The term *marinus*, as applied to the European species, being thus rejected, I have adopted it agreeably to the intention of Seba, for the one here described.

This is the *Lobster* of our markets; it is brought in considerable numbers to Philadelphia, in the fish wagons, from Long-branch, part of the coast of New-Jersey, in excellent preservation, and generally alive; they are much esteemed as food, and are sold at 18 cents *per. lb.* They are taken pretty much in the same manner as at the fisheries on the coast of Great Britain, by means of pots or traps,

made of slats or osiers, formed somewhat in the manner of a mouse-trap, baited with garbage, &c. attached to a cord and buoy, and sunk by means of a weight.

2. *A. Bartonii*. *Rostrum* mucronate, concave; *thorax* unarmed; *hand* short, destitute of spines; fingers moderate.

*A. Bartonii*, Latr. Gen. Crust. et Ins. v. 6, p. 240, from Bosc's Hist. des Crust.

*Inhabits* the small streams of fresh water of the United States.

Cabinet of the Academy.

*Body* and extremities with scattered, very visible punctures, more conspicuous on the hands and fingers; *rostrum* rather short, attaining the tip of the second joint of the peduncle of the inner antenna, suddenly attenuated into an acute termination, without any appearance of lateral spines; spines behind the eyes obsolete, no vestige of spines on the thorax; *anterior feet*, third joint with short spines beneath, above unarmed; *carpus* armed with a strong spine within, near the middle, behind which, near the base, is usually a smaller one, on the disk above is an abbreviated deeply indented groove; *hands* short, with large punctures, distance from the inner hind angle to the thumb joint, hardly equal to one half the length of the thumb, beneath rounded or without an edge; *fingers* with large punctures, *caudal lamellæ* ciliated, first segment of the middle one two spined each side at tip.

Length from the tip of the rostrum to that of the tail, two inches.

This species is very common in rivulets and small streams of fresh water, under stones, &c. it is familiarly

known by the name of *Craw-fish* or *Fresh-water lobster*; with many it is esteemed as a delicious food, though not much sought after, but in some parts of the country, children eat them alive, or only their claws. It was first described as distinct from the *fluviatilis* by Mr. Bosc, who named it in honour of the late professor B. S. Barton.

3. *A. affinis*.\* *Rostrum* mucronate, subcanaliculate, two-spined; a spine behind each eye, and a larger geminate one, on each side of the thorax; *hand* and *thumb* on the inner edge scabrous.

*Inhabits* the river Delaware.

Cabinet of the Academy.

*Body* and extremities with scattered distinct punctures, which are not conspicuously larger on the hands, all furnishing hairs, from one to four in each; *thorax* with a double, prominent, acute spine each side, behind the transverse arcuated band, which is deeply impressed, and terminated on the anterior lateral edge, at an acute spine; a spine on the peduncle of the base of the scale, and a moveable one at the base of the second joint of the peduncle of the exterior antenna; interior antenna with a prominent spine on the first joint of the peduncle beneath; a group of four or five spines between the base of the exterior antenna and the double spine; *rostrum* acutely spinose each side near the tip, tip attenuated into an acute spine, which rather surpasses the tip of the third joint of the peduncles of the interior antennæ, abbreviated carina each side of the base, elevated, and terminated behind the eye in a spine; *anterior feet*, third joint with a double series of spines beneath, two above placed obliquely, two smaller ones at tip, and one behind the outer condyle; *carpus*

four-spined, of which the largest is situate on the inner middle, one behind each condyle, and one beneath; an indented line above; *hands* moderate, punctures hardly larger, but more hairy, than those of the thorax, distance from the inner hind angle to the thumb joint exceeding half the length of the thumb; inner edge, with that of the thumb, scabrous, with short spines; *fingers* equal, fasciate with green near the tips; *caudal lamellæ* deeply ciliated, first segment of the middle one two-spined each side at tip, lateral ones with an elevated longitudinal line.

Length from tip of the rostrum to the tip of the tail, nearly three inches and three tenths—breadth of the thorax nine tenths.

This inhabitant of our rivers does not appear to have been noticed as a distinct species; it is larger than the preceding, and very different in the form of the rostrum, and in other characters, which will be obvious from the above descriptions; it approaches much nearer to the *A. fluviatilis* of Europe, to which indeed I should be induced to refer it, but that the hands are not tuberculated as those of that species are described to be. It is known to fishermen by the name of "Craw-fish," not being distinguished by them from the preceding.

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*Observations on several species of the genus ACTINIA; illustrated by figures. By C. A. Le Sueur. Read December 9, 1817.*

(Concluded.)

2. *A. ultramarina*. P. and L. (Plate VII. fig. 5.)  
Twenty segments; tentacula short; colour a fine ultrama-

ded at the extremity; *anal* subequal, narrow, somewhat elongated; *lateral* line obsolete; *back* and *head* of a deep blue, with yellowish tints; sides and abdomen of pale blue; *pectoral*, *ventral*, *anal* and *caudal* fins slightly blended with a reddish green; *opercula* varied with yellow, red and violet; *iris* reddish, *pupil* black.

Scales of a middle size, readily falling off.

B. 7.—D. 19.—P. 18.—V. 9.—A. 18.—C. 22 $\frac{2}{5}$  rays.

We observed this in October, 1816, on the coast of Marblehead and Sandy Bay, under the name of English Herring, which the fishermen have given to it, doubtless from a resemblance it bears to the Pilchard, from which it differs in having a straight dorsal fin, without emargination, as in the Pilchard. Taken with the seine, and cured for home consumption.

(To be continued)

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*An Account of the Crustacea of the United States.* By  
Thomas Say. Read November 11, 1817.

(Continued.)

[Since these papers were read to the Academy, we have found, in the southern states, several interesting and apparently new crustaceous animals, descriptions of some of which will now be added, and those of the remaining ones will form a supplementary addition to this essay; this notice is only given to account for the anachronisms that may appear.]

### Genus PENÆUS.

Three anterior pairs of feet didactyle, the anterior pair shortest; *interior antennæ* inserted above the line of the exterior ones, which have a large scale attached to the peduncle; *tail* with the middle process elongate-triangular, broader at base.

## SPECIES.

1. *P. fluviatilis*. *Rostrum* serrated above with about nine teeth, beneath with about two; *tail* and *terminal joints* of the *abdomen* carinated; *tail* with middle process canaliculate above.

*Astacus fluviatilis Americanus*. *Seba*, tom. iii. tab. 17. fig. 2.

*Inhabits* North America.

*Rostrum* as long as the scales of the antennæ, grooved each side, armed above with from seven to nine teeth, of which the posterior one is distant from the others, and two, three, rarely four teeth beneath, which, when but two, are distant and placed nearer the tip; a short spine at the base of each interior antennæ, terminating an oblique short carina, which is margined above by a groove that is bifurcated before its posterior termination, with an acute, short spine in the angle; an abbreviated longitudinal line and groove, sometimes obsolete, originates behind the exterior antennæ, forming with the preceding groove the letter N; *eyes* large; *exterior antennæ* double the length of the body, scales longer than the second joint of the interior antennæ, with a deeply impressed submarginal line; *abdomen* with the fourth and fifth segments carinated; sixth segment with the carina more elevated, mucronate behind, a lateral line of longitudinal abbreviated lines on the fifth and sixth segments; *tail* with the middle process deeply canaliculate and mucronate; *feet* with the first and second joints of the anterior pair, and second joint of the second pair armed with a spine beneath; fingers with short fascicles of spines. Length about eight inches.

Rarely brought to the Philadelphia market. *Seba's* figure is without doubt intended for this species, though

all the feet are represented as didactyle; this, however, was, it would appear, an error in the drawing.

The name of *fluviatilis*, applied by this author to our *Penæus*, is certainly not so appropriate as many others which might be substituted, more especially as it is not an inhabitant of fresh waters, as its name seems to indicate, but is always found in salt or brackish water. Nevertheless, as the name has been given, it would be presumption of the most reprehensible kind in me to reject it, particularly as the species is actually found within the mouths of rivers, probably as high up as the salt water extends.

The sexes are distinguishable from each other by the absence or presence of a connecting membrane to the anterior pair of natatory feet; the membrane is formed by the dilatation and junction of the inner appendages of these parts.

They appear in great numbers in the estuaries of the southern states and Florida early in the spring, when they are caught, to supply the markets, by means of a cast net; the fisherman ascertains their presence in the water at night, by the lines of light which are formed by their darting amongst the phosphorescent molluscæ, when a splashing of the water, or the advance of a boat, alarms them.

When recent, the colour is usually whitish, tinged with reddish, and each side, particularly of the abdominal segments, with very pale greenish yellow, and sprinkled in every part, except the eyes, tips of the caudal lamellæ, pectus and venter, with small, radiate, reddish-brown spots; eyes greenish, with dark moveable pupil; caudal lamellæ tipped with verdigrise green, cilia red; antennæ reddish, the dorsal carina of the fourth, fifth and

sixth abdominal segments, and the rostrum, are brown above.

*Genus* CALLIANASSA.

Four anterior feet didactyle; *anterior pair* largest, very unequal; *second pair* much smaller; *third pair* submono-dactyle; *fourth* and *fifth pairs* spurious, obsoletely didactyle; *antennæ* inserted in nearly the same horizontal line, *intermediate* ones with double seta and elongated peduncle of which the terminal joint is much longest, *exterior* ones without lamellæ; *exterior caudal lamella* simple.

C. \**major*. *Thorax* one fourth the length of the body, somewhat membranous, with an oval coriaceous plate above, which before forms a rostrum of a very small projecting acute angle; *eyes* very small, placed on the upper side of their peduncles, which are cylindrical, approximate at base, incumbent on and as long as the first very short joint of the interior antennæ, obtuse, and originating under the anterior margin of the thoracic plate; *exterior antennæ* longer than the thorax, two terminal joints of the peduncle equal, *seta* more than thrice the length of the peduncle; *interiores* more than twice the length of the others, more robust, deeply ciliated beneath; *external pedipalpi* with the second joint much largest, compressed, oval, third joint not so large as the fourth, which is semi-oval, terminal joint or nail closing on the edge of the preceding joint; *feet*, with the exception of the two last ones, compressed; *anterior larger foot* placed indifferently on the right or left, and is the only part that is of a compact crustaceous consistence, third joint sublinear, granulated, compressed within, convex on the exterior side,

raised into an angle on the middle of the lower edge and incurved at base; *carpus* trilateral, granulated, not concave, at base beneath projected into a prominent angle or hook, which on the hind edge is furnished with a few short stout hairs, superior edge simply emarginate near the base; *hand* very much elongated, sublinear, compressed, glabrous, two-jointed, first joint a little contracted towards the base, not broader than half the length of the *carpus*, second joint equal in breadth to, and, excepting the fingers, two thirds the length of the preceding joint; *fingers* more than half as long as the preceding joint, with fasciculated hairs, thumb rectilinear at base, decurved at tip and armed with a strong, truncated tooth behind the middle, finger unarmed, incurved; *second pair* of feet with the third joint obtriangular, equal at tip to the base of the fourth, which, with the thumb and finger, is triangular, terminal joints deeply ciliated; *third pair* with the penultimate joint transverse, attached to the preceding one by the middle of the base, deeply ciliated and terminated at the superior tip by a very small joint, which is rounded at base and acute at tip; *fourth* and *fifth pairs* somewhat cylindrical, terminal joints comose, thumb and projecting angle or finger concealed by the hair; *abdomen* of six segments, two anterior ones membranaceous, the first narrowed to the base, supported on each side, and at the tip beneath, by a semicrustaceous rib, with a linear appendage at each of the hind angles beneath, the second segment supported on each side by a vitreous scale, and at base beneath by an angular semicrustaceous rib, with linear appendices as in the preceding segment; third, fourth and fifth segments semicrustaceous, octangular, subequal; sixth segment subquadrate, narrowed behind

and contracted each side in the middle; *natatory appendices* attached to the third, fourth and fifth segments, composed each of a semilunate plate, with an incurved fin attached to the anterior lateral base, which when at rest is placed on the anterior face of the plate, and the plate when at rest is incumbent forwards; *tail* rounded at tip, contracted towards the base, and about two thirds the length of the preceding segment; *lateral lamellæ* simple, longer than the tail, inner one linear, comose, exterior one dilated, triangular, ciliated at tip.

*Inhabits* the coasts of the southern states and of East Florida.

Cabinet of the Academy.

Length of the specimen four and a half inches.

The exuvixæ of this singular animal, particularly of the large anterior foot, occurs very frequently on the sea beach of the southern states early in the spring. It is rarely seen, owing to its recluse mode of life. We found this specimen by digging in the sand of the bay shore of the river St. John in East Florida, about eighteen inches below the surface, near low-water mark; it had formed a tubular domicil, which penetrated the sand in a perpendicular direction to a considerable depth, the sides were of a more compact consistence than the surrounding sand, projecting above the surface about half an inch or more, resembling a small chimney, and rather suddenly contracted at top into a small orifice. The deserted tubes of the *Callianassa* are in many places very numerous, particularly where the sand is indurated by iron into the incipient state of sand-stone; they are always filled up, but may readily be distinguished by the

indurated parieties and summit often projecting a little above the general surface.

A curious parasite abounds on the body of this species, perfectly distinct from the genus *Ione* of Mr. Latreille; a description of it will be given in its proper order.

### *Genus* GEBIA.

*External caudal lamellæ* simple; *tail* quadrate; *antennæ* placed on the same horizontal line, *interior* ones short, with two setæ and elongated peduncles, of which the third joint is much longest, *exterior* ones destitute of the accessory lamina at base; *feet* ten, two anterior ones monodactyle with a projecting angle for a finger.

#### SPECIES.

*G. \*affinis.* *Thorax* glabrous, transversely grooved in the middle by an arcuated line, behind which, on each side, is a minute spine, anterior part of the thorax covered with numerous fascicles of short, rigid hairs, arising from short tubercles, or impressed interrupted lines somewhat arranged in longitudinal rows, broad before and divided into a short canaliculated rostrum, and a prominent tooth each side, which is rather shorter, and separated from it by a groove, which is longer than that of the rostrum, and like it glabrous, rostrum and teeth hairy to their tips, the latter with a short spine beneath; *eyes* smaller than their peduncles, which are hairy above, concealed; *anterior* feet largest, ciliated with long hair beneath (excepting the carpus) on the inner edge; second joint with a spine beneath, third joint with four or five beneath and one above near the tip; *carpus* subtriangular, with three very small ones above, five or six at tip larger, and the

largest acute one at the inferior inner tip, an impressed longitudinal line on the outer side; *hand* not broader than the carpus, linear, nearly equal to the third joint, with three elevated ciliated lines above, two impressed ciliated ones on the outer side, beneath with long hair, and a groove, which is a little oblique, and marks the origin of the short angle or finger at tip, a short spine above at base, finger as long as the carpus, with three or four lines of rigid hairs, grooved on the outer side and glabrous within; *second pair of feet* ciliated with long hair beneath, third joint with a prominent acute spine at base beneath, and another somewhat dilated and compressed at tip above, nail deeply ciliated above; *third pair* hairy on the terminal joints, third joint about three-spined beneath and a little hairy; *fourth* and *fifth pairs* hairy on the terminal joints, nails very small and concealed by the comose termination of the feet, those of the former closing on the tip of the preceding joint, those of the latter upon a projecting angle of the preceding joint; *abdomen* glabrous, segments each with a lateral, longitudinal, impressed, submarginal line, the first, second, sixth and fifth subequal, the latter shorter, third and fourth equal shortest; *natatory feet* composed of a suborbicular peduncle, supporting two deeply ciliated lamellæ, of which the outer one is more than as long again as the inner one, suboval, attenuated at base and acute at tip, inner one oval, narrowed at base; *caudal lamellæ* short, ciliated at tip, deltoid, subequal, the inner one smaller, truncate at tip, a longitudinal elevated line in the middle, and a costal outer margin which is slightly angulated near the base, outer side somewhat rounded at tip and at the inner angle, two

raised lines near the middle, which are recurved at tip, and an outer costal margin; *tail* subquadrate, with an impressed longitudinal line, entire at tip,

*Inhabits* Georgia.

Cabinet of the Academy.

Length two inches and a quarter.

Found on an oyster bed near the edge of the water at low tide, and appears to be rare. Its analogue of Great Britain, upon which this genus was founded by Dr. Leach, discovered by Mr. Montague, and by him described in the Transactions of the Linnean Society of London, is also very rare, and inhabits the subterraneous passages of the Solens or Razor shells; our species is very similar to that, but differs from it more especially in having the extremity of the tail entire.

### *Genus* ALPHEUS of Fabricius.

*Feet*, two anterior pairs didactyle; *carpus* of the second pair divided into several joints.

#### SPECIES.

1. A. \* *heterochælis*. *Hands* of the anterior feet very unequal, larger one deformed and having a very small transverse *carpus*; *rostrum* simple, spiniform, acute.

*Inhabits* coasts of the southern states.

Cabinet of the Academy, and Museum of South Carolina.

*Thorax* glabrous, unarmed; *rostrum* carinate in the middle and terminating in an acute point which nearly attains the tip of the first joint of the inner peduncle; covering of the eyes convex, prominent, rounded at tip; *superior antennæ*, a small scale terminating in an acute

spine and placed at the outer base of the peduncle; *pedipalpi* deeply ciliated, attaining the tip of the peduncles of the antennæ, first joint bicanaliculate beneath, third joint spinose beneath, spine movable, tip acute, a little hairy; *inferior antennæ* nearly as long as the body; *anterior feet*, hands very unequal, the larger one appearing deformed, nearly as large as the thorax, compressed, excluding the fingers, semioval, abruptly constricted near the fingers on each edge; *fingers* very robust, thumb cultrate, near the base, within a prominent lobe, or tooth, which is received into a corresponding fossula of the base of the finger, surface a little hairy, hairs assembled at tip into a double row, finger concave within for the reception of the thumb, obliquely emarginate above on the inner edge near the tip, and extending into an angle near the middle of the inner edge; *carpus* minute, transverse, carinated, shorter than the thumb; *second pair of feet* smallest, but not shorter than the hind ones; *three posterior pairs*, penultimate joint armed beneath with moveable spines and a few hairs, nails horny, glabrous, acute, *tail* at tip rounded, narrower than at base, deeply ciliated, above behind the middle four, small, conic, moveable spines, placed in cavities; *external lateral lamella* biparted, two small spines at the outer tip of the first segment, and two larger at the tip of the peduncle, tips deeply ciliated; *colour*, when recent, green, sprinkled with numerous, small, brownish spots, a large dark green spot at tip of the caudal lamellæ; hand beneath white, fingers tipped with white.

Length nearly one inch and a half.

The larger hand of this animal attracts attention by its unusual size and deformed appearance; the individual

of the museum of South Carolina was found by Mr. L'Hermerier on the coast of that state. The specimen in the collection of the Academy we found on the coast of Amelia Island, Florida, concealed under a considerable mass of *Ascidia*; when placed in water, the thicker filament of the superior antennæ was supported in an erect posture, vibratory, and appeared deeply ciliated near the tip.

I have placed this in the genus *Alpheus* of Fabricius and Latreille, as the characters will not agree with those ascribed to that genus by Dr. Leach, such as "exterior caudal lamella simple; third segment of the abdomen gibbous above," &c. the antennæ also are relatively situate as in *Astacus*, and the scale at the base of the outer antenna is not proportionably larger than in that genus.

2. A. \**minus*. *Hands* of the anterior feet very unequal, larger one inflated, oblong-oval, equal; *carpus* very small; *rostrum* spiniform, and a lateral spine before the eye.

*Inhabits* coasts of the southern states, and of East Florida.

Cabinet of the Academy.

*Thorax* glabrous, *rostrum* and *convex lid of the eye* forming three subequal spines before, of which the *rostrum* is somewhat longer and more acute, the lateral spines conic-acute; *exterior antennæ* shorter than the body, scales at base acute, spiniform; *larger hand* oblong-oval, not compressed, colour white, tip red, banded near the base of the fingers with white in the female, and white tipped with green in the male, *nails* short; *external pedipalpi* obtuse at tip and crowned with spines.

Length, male four fifths of an inch, female one inch.

It is very possible that this may be the young of the preceding, notwithstanding its diverse characters, but we are at present disposed to consider it as distinct. The above description is drawn from seven specimens of different ages, all agreeing perfectly in these traits. They occurred in recent Spongia, &c. cast ashore by the waves.

### Genus CRANGON.

*Anterior feet* largest, monodactyle, and furnished with a spurious finger; second and third pairs very slender, simple; fourth and fifth more robust; *antennæ* inserted in nearly the same horizontal line, exterior ones with a large scale at base, interior ones of two setæ; *exterior caudal lamellæ* simple.

#### SPECIES.

C. \* *septemspinosus*. *Rostrum* not so long as the eyes, with a spine behind it on the thorax, and another on each side; *anterior feet* armed with a spine on the third joint beneath.

*Inhabits* bay shores and inlets of the sea. Common.

*Thorax* seven-spined, one of which is placed on the back before the middle, a lateral one on each side in a line with the dorsal one, another at the external canthus of the eye, and a more prominent one at the anterior angles, situated adjoining a shorter one with which the basal joint of the scale of the exterior antennæ is armed; two impressed lines arising, one from an oblique fissure in the superior margin of the orbit of the eye, and the other at a fissure in the external canthus, are confluent

above the lateral thoracic spine, and disappear behind the middle of the thorax on each side, a third line originates from the fissure in the external canthus, passes beneath the lateral spine and forms, with the two preceding lines, the letter N; *rostrum* shorter than the eyes, obtuse, margin elevated; *eyes* little prominent; first joint of the peduncle of the interior antennæ, concave above for the repose of the eyes, furnished on the external side with a submucronate small scale, resembling an elongated continuation of the inferior margin of the orbit of the eye, and armed beneath with an obtuse spine which is visible on dissection; *exterior antennæ* as long as the body, annulate with blackish-brown, scales nearly as long as the interior antennæ; spine of the anterior feet situate near the middle of the third joint beneath; *finger* spiniform, prominent, inflected; middle process of the tail simple, conic; colour, when recent, pale cinereous, with very numerous, irregular, stellate, blackish-brown spots.

Length of the body, from the tip of the rostrum to that of the tail, one inch and two fifths nearly.

An active little animal; when at rest at the bottom of the water it is not readily discoverable, owing to its being somewhat translucent and of a pale colour. This species, and those of the genus *Palæmon*, &c. are indiscriminately called *Shrimps* in this country. There is no doubt but our *Crangon septemspinosus* strongly resembles the *C. vulgaris* of Europe, which is the true shrimp; I have, in fact, considered it heretofore as the same, but it appears to differ in the number of spines.—It is found as far south as East Florida.

## Genus PALÆMON.

*Exterior antennæ* inserted below the line of the interior ones, and furnished with a large scale at base; *interior antennæ* with three setæ; *exterior lamellæ* of the tail undivided; *ultimate joint* of the *external palpi* shorter than the preceding; *four anterior feet* didactyle, first pair smaller.

## SPECIES.

1. P. \* *vulgaris*. *Rostrum* acute, with eight or nine teeth above, and three or four beneath; *fingers* of the larger pair of feet shorter than the palm of the hand.

*Inhabits* bays and estuaries. Very common.

*Rostrum* as long as the scales of the antennæ, ciliated between the teeth; *thorax* armed with two spines on each side, which are equal, and placed one at the base of the interior antennæ, and the other at the base of the exterior ones; an impressed line passes between these spines, and terminates about the middle of the side, an obsolete, oblique, abbreviated one originates at the superior margin of the orbit of the eye; peduncle of the scale armed with a spine at the exterior tip; first joint of the peduncle of the interior antennæ concave above, and furnished with a spine near the external base, and another near the external tip; *carpus* of the first pair of feet rather longer than the preceding joint, armed with a spine on the inner tip, hand elongate oval, unarmed, about one half as long as the carpus, fingers equal; *carpus* of the second pair, nearly equal to the preceding joint, unarmed, shorter than the palm of the hand, hand elongated, fingers uncinatè at tip, shorter than the hand, linear, equal, with two or three small, obtuse teeth at the base, middle process of the ap-

pendages of the tail, with two moveable, prostrate, conic spines placed each side in cavities; tip truncated and furnished with four moveable spines, of which the interior ones are much more elongated, and separated by an immoveable shorter one in the middle; interior *antennæ* about half as long as the exterior ones, the short seta ciliate with long, parallel, equidistant hairs; colour whitish, almost pellucid, with a few dark points, eyes dark, peduncles spotted with yellow.

Length from the end of the rostrum to the tip of the tail, one inch and two fifths.

This species is one of those which pass under the name of *Shrimp*, but they all differ specifically, as this does generically, from the true shrimp of Europe. It is congeneric with the European *Prawn*, and in point of form resembles it much, but that arrives to the length of five inches. Found as far south as East Florida.

2. P. \* *tenuicornis*. *Rostrum* with about eleven or twelve teeth above, and six or seven beneath; fingers of the larger feet rather longer than the palm of the hand.

*Inhabits* the Banks of Newfoundland.

*Rostrum* as long as the plates of the antennæ, densely ciliated between the teeth; spines of the thorax, and of the peduncles of the antennæ, placed as in the preceding species; *carpus* of the first pair of feet unarmed, and hardly longer than the hand, fingers linear, a little reflected, as long as the palm; *carpus* of the second pair as long or rather longer than the palm of the hand, fingers a little longer than the palm and reflected; antennæ very slender, white, interior ones more than two thirds of the length of the exterior ones.

Length one inch and one fifth.

Considerably resembles the preceding, but differs from it in the number of teeth in the rostrum, in the more attenuated antennæ, and greater length of the inner ones; the wrists, hands and fingers also are proportionally different, the fingers are a little curved upwards, but in the preceding they are in a right line with the hand. Described from a specimen in my cabinet; and another in the collection of the Academy, presented by captain Hamilton.

#### ORDER STOMAPODA. *Latr.*

*Head* distinct from the thorax, and divided into two parts, of which the anterior one supports the antennæ and the eyes; *eyes* pedunculated; *branchia* abdominal, placed behind each pair of natatory feet.

#### *Genus* SQUILLA.

*Thorax* exhibiting several joints; *interior antennæ* with three, articulated setæ; *exterior antennæ* simple, furnished with a scale; *abdomen* six-jointed; *tail* flabelliform.

#### SPECIES.

S. \* *Empusa*. *Abdomen* with eight, *four last joints* of the *thorax* with four, raised longitudinal lines; *four last joints* of the *thorax* not bifid over the coxæ of the feet; large plate of the thorax angulated over the coxæ of the arms.

*Inhabits* the coast of Rhodeisland.

Cabinet of the Academy.

*Thoracic plate* with an obvious lateral angle before the rounded terminaion; second segment shortest, two-

spined on each side at the edge, of which one is placed above the other; third and fourth segments entire over the insertion of the coxæ of the feet, mucronate; fifth segment somewhat rounded over the insertion of the posterior feet, where it is partially concealed by a small squamiform appendage, which is attached by a suture to the first joint of the abdomen; *thumb* armed on the inside with five, long, permanent spines, and terminated in a similar, but more elongated one, all received at tip in corresponding cavities of the anterior edge of the hand; *hand* elongated, thickened, pectinated on the anterior outer edge, parallel with the recipient cavities, three moveable spines near the base, inflected, so as to meet the terminal spines of the thumb; third or principal joint, unarmed; carinated line behind the anus very short.

Length of the female four and a half inches, male two and three quarter inches.

This fine species was found by Mr. Le Sueur on the coast of Rhodeisland, and was presented by him to the Academy. The very striking resemblance which it bears to the *S. mantis* has hitherto caused it to be confounded by naturalists with that species. But an attentive examination of its characters, and a comparison of them with those of the species just mentioned, will convince us that it is perfectly distinct. I will, in this place, briefly mention two or three differences, which of themselves are sufficient to justify a separation of the American species. The large plate of the thorax, in the foreign specimen of *S. mantis* under examination, is perfectly simple over the coxæ of the large feet or arms, whereas in our species, that part is extended into an angle; the next segment is, it is true, two-spined on each side in the European animal, but

those spines are placed horizontally, and not, as in our species, vertically, with respect to each other; the two following segments, also, are deeply emarginate over the insertion of the feet, but, in the species here described, they are simply mucronate in that part, the anterior lobe, which would form the notch, being wanting.

The specific name is taken from *Empusa* in Entomology, a genus of insects, which was separated by Mr. Illiger, from the Linnæan genus *mantis*, to which it has as much affinity, as the *Squillæ* here compared have for each other.

The *S. empusa* inhabits the coast as far south as East Florida, it varies a little in colour. I here add a description of the colours, &c. of a recent male specimen; *feet* white, *anterior ones*, second and third basal joints tinged with rosaceous and edged with yellow at their tips; *interior antennæ*, peduncles blackish, joints yellow at base, seta white annulate with black; *exterior ones*, peduncles dusky, seta white, scale yellow or greenish on the terminal half, and indistinctly spotted with minute brownish-black spots; *segments of the body* margined behind with darker green and edged with yellow; *tail* tinged with rosaceous, and varied with blackish and yellowish; *lamellæ*, inner ones black, paler at base, outer ones, first joint black, base and spines white, second joint yellow, inner margin black; *peduncle of the lamella* elongated, terminating in two white spines, of which the inner one is rather longer than the inner lamella, slightly toothed on the middle of its length, from whence a double groove proceeds to the tip, a spine over the insertion of the first joint of the external lamella which has also a spine under the insertion of the accessory plate; eyes cylindric, rounded at tips,

emerald-green, brilliant, placed obliquely on their peduncles.

The male may be readily distinguished from the other sex, by its smaller size, and by the presence of a small fistulous body, attached near the base of each of the hind feet beneath.

(To be continued.)

*Observations on two species of the genus GRACULA of Latham. By George Ord. Read May 19, 1818.*

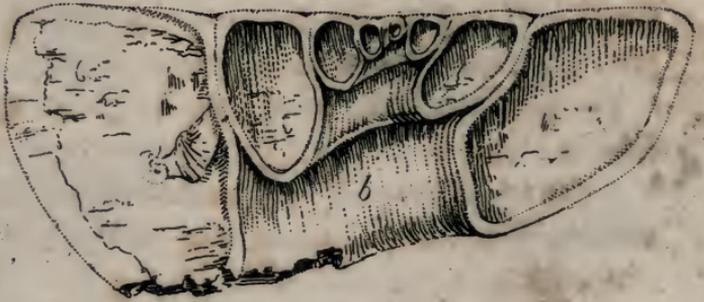
Those Grakles, denominated by nomenclators *Quiscalia*, and *Barita*, having been confounded, I shall attempt, by fresh descriptions, and a brief history of them, to place them in a point of view which shall prevent uncertainty in future.

### GRACULA *quiscala*.

LINN. GMEL. i, p. 397—7.—*Purple Grakle*, LATH. *Gen. Syn.* i, p. 462—6.—*Monedula purpurea*, the *purple Jackdaw*, CATESBY'S *Car.* vol. i, p. 12, T. 12.—*Purple Jackdaw of the sea coast*, BARTRAM, *travels*, p. 290.—*Jackdaw*, *Arct. Zool.* i, p. 308.—153.—*Sturnus barita*, DAUDIN, *Traite' d'Ornithologie*, tome ii, p. 320.

Black, with reflections of pansy-purple on the *head* and *neck*; *interscapular region* rich lustrous steel-blue; *tail* rounded; the roof of the upper mandible furnished with a slight osseous carina; *length* sixteen and a half, *breadth* twenty-two and a half inches.

*Bill* from the angle of the mouth an inch and three quarters in length, black, as are also the *legs*, *feet* and *claws*; the upper mandible projects considerably over



C. A. Le Sueur D. & inc.



An excellent specimen of this shell occurs in the collection of the Academy presented by Mr. O'Kelly, of Dublin, Ireland.

*An Account of the Crustacea of the United States.*  
By Thomas Say. Read June 10, 1818.

(Continued)

*Genus* \*DIASTYLIS †

*Essential Character.*

*Feet* bifid; *antennæ* destitute of accessory scales; *tail* with a single bifid style on each side of the first segment, second segment terminated by a simple one.

*Natural Character.*

*Thorax* six-jointed, anterior one much larger than the others conjunctly, laterally deflected, compressed, embracing the sides, and rostrated; *rostrum* permanent, concave beneath, concealing the base of the intermediate antennæ; *antennæ* four, placed on nearly the same horizontal line, inner ones four-jointed, three basal joints robust, first and second subequal, very short, concealed by the rostrum, third joint articulated, as long as the two preceding ones conjunctly, bifid, inferior division much shorter, exterior antennæ simple, longer than the inter-

† In allusion to the caudal appendices.

mediate ones, basal joint robust, without a scale, terminal joint articulated; *external pedipalpi* very large, pediform, nearly attaining the front, first joint very much elongated, compressed, remaining joints very small, cylindrical, subequal; *feet* five pairs, bifid, anterior pair truncate at tip, shorter than the external pedipalpi, second pair acuminate, third, fourth, and fifth pairs reflected, acuminate, destitute of nails, armed towards the tip with robust hairs; *abdomen* five-jointed, cylindrical, much narrower than the thorax, four anterior joints subequal, fifth rather longer, first and second segments furnished beneath with natatory feet; *tail* bi-articulate, first joint with a lateral style, composed of a cylindrical peduncle and bifid, short seta, second joint smaller than the preceding, terminated by a simple cylindrical style.

### *Species.*

*D. \*arenarius.* *Thorax* above a little undulated, glabrous, as long as the abdomen and tail conjunctly, edge each side before minutely crenate; *rostrum* short, obtuse, triangular; intermediate antennæ two thirds the length of the first joint of the thorax, inferior seta less than half as long as the superior one, exterior antennæ longer than the first joint of the thorax, basal joint attaining the tip of the third joint of the inner antennæ; *lateral caudal styles* divaricated, longer than the tail, peduncles somewhat dilated at tip, setæ half as long as the peduncle, and appearing articulated, terminal style less than half the length of the lateral ones.

Length one fifth of an inch.

*Inhabits* Coast of Georgia and Florida.

Cabinet of the Academy.

I think there is little doubt of this animal being congeneric with *Cancer scorpioides*, described by Montagu in the seventh volume of the *Trans. Lin. Soc. of Lond.*, and indistinctly represented on plate sixth of that instructive work. The general appearance, particularly of the posterior part of the body in that figure, its curve, the caudal appendices &c., is very similar to that of the species upon which I have constructed this genus. The author in describing it observes, that it was a mutilated specimen, but the only one he had seen; "the head or fore part was wanting, consequently no eyes nor antennæ could be observed; but the rudiment of arms on the fore part of the body" &c. Notwithstanding these remarks of that intelligent observer, I am led to believe, by comparing his figure and description with this animal, and judging from the analogy between them, that it was nearly complete, wanting only the intermediate antennæ. But it is necessary to remark, that in our animal there is no distinct head, unless that part of the body can be considered as such, which I have called the first segment of the thorax; this is the more probable since neither of the five pairs of feet which I have enumerated, are distinctly perceived to arise from that part. It is true, that those members which Mr. Montagu has called "rudiments of arms," most obviously have their origin there; yet these, although much larger than either of the feet, and equidistant from the two anterior pairs, I have supposed, from their form and apparent position, to be no

other than palpi, and have described them as such. Immediately under these external pedipalps is a much smaller distinct and filiform pair. The exterior antennæ are concealed each side beneath the deflected margins of the thorax. The eyes are probably very retractile, and placed below the antennæ: I did not discover them.

I found but a single individual in a handful of sand taken from one of those pools which are frequented by *Lepidactalis*,

† *Cancer esca*, Gmel., an inhabitant of the Norway sea, said to be the chief food of the Herring, will, judging from the description, form a third species of this genus. Mr. Montagu considered it similar to *C. scorpioides*.

By the bifid feet *Diastylis* claims kindred to the genera *Mysis* and *Nebalia*; and when placed immediately in succession to the latter, will contribute another link, by which the *Macroureæ*, through the medium of the *Schizopodæ*, are conneted to the *Monoculii* by *Cyclops*, the most proximate of the genera of that order.

### ORDER III.

#### AMPHIPODA. Latr.

Head distinct from the thorax, and simple; eyes immoveable, fixed in the shell; mandibles palpigerous, three pairs of maxillæ, exterior ones resembling a lip

with two palpi or two small feet united at the base; branchiæ vesicular, and situate at the inner base of the feet, with the exception of the anterior pair.

*Genus* \*LANCEOLA.†

*Essential Character.*

*Antennæ* four, terminal joints not articulated; *antennæform processes* above the mouth; *caudal styles*, three pairs, peduncle depressed linear, supporting two lanceolate lamellæ.

*Natural Character.*

*Body* soft, external covering membranaceous; *head* very short, transverse; *eyes* longitudinal, placed opposite the base of the superior antennæ; *clypeus* projecting into an acute angle; *front* concave; *antennæ* four, unequal, inferiores longest, four jointed, compressed, basal joints very short, third and fourth longer, equal, the latter entire, superiores abbreviated, compressed, triarticulate, basal joints short, robust, concealed by the clypeus, terminal joint not articulated, linear, compressed, obtuse; *mouth* protuberant; *labrum* emarginate, supporting two filiform, triarticulate processes, of which the first joint is very short, second linear, third shorter, subulate; *labium* (pedipalpi) bifid, closing the mouth, lacinia linear, inner edges hirsute, tips

† In allusion to the form of the terminal divisions of the caudal appendices.

rounded; *thorax* oval, convex above and beneath, seven jointed, sutures imbricate; *feet* fourteen, simple, two anterior pairs compressed, terminal joints conic compressed, remaining pairs somewhat cylindric, armed with a minute, subterminal nail, sixth pair much the longest; *vesicular branchiæ* oblong, distinct, placed at the inner base of the feet, excepting the first and seventh pairs; *abdomen* abruptly much narrower than the thorax, of three subcylindrical segments, each furnished with natatory feet; *tail* depressed, three jointed, joints furnished each with a lateral style, which consists of a foliaceous linear peduncle, supporting two acute lanceolate, subequal lamellæ, two anterior styles equal, posterior pair rather shorter, terminal segment attenuated between the posterior styles,

## SPECIES.

L. *\*pelagica*. *Antennæ*, inferiores more than half as long as the thorax, superiores attaining the middle of the third joint of the inferiores; *antennæform processes* surpassing the second joint of the inferior antennæ; *thorax*, first segment shortest, acutely angled before near the clypeus, second and third segments longest, equal; *feet*, anterior pair shortest, third, fourth, and seventh equal, fifth longer, sixth longer than the thorax.

Length one inch and one fourth

*Inhabits*—Gulf-stream.

Cabinet of the Academy.

Two specimens of this animal were found by Capt. Hamilton, in the Gulf-stream, and from them, although

both females, the above descriptions are taken: the male not having yet come under examination. I am sensible that it is not perfectly consistent with a due degree of caution, to construct a genus for the female of an animal, when, as in this case, the male may present diverse characters, or such as are much more prominent and accessible, although this has been often done. But in the present instance we have an animal to give an account of, whose generic traits widely differ from those of any other as laid down by naturalists, so that in order to be introduced into this paper at all, it is believed that the formation of a distinct genus is unavoidable; this is therefore offered provisionally, to be altered, rejected, or retained, as the male, when discovered, may justify.

Its generic affinities are rather difficult to determine. It is allied to Amphipoda by the vesicular branchiæ, and by the caudal appendices to the genus *Phronima*, more than to any other of this order; in the external appearance of the mouth there is a great similarity to the Linnæan *Oniscii*, the labium being nearly the same in form. In general form it somewhat resembles *Oniscus cæruleatus* of Montagu, *Trans. Linn. Soc. Lond.* vol. xi, from which I suppose Doct. Leach has formed his genus *Praniza*, which, although but slightly characterized by Mr. Latreille, in *Le Règne Animal*, tom. 3, p. 54, and without any reference to books or specimens, is evidently very distinct.

An account of the Crustacea of the United States. By  
Thomas Say. Read July 7, 1818.

[Continued.]

### Genus GAMMARUS.

*Body* thirteen-jointed exclusive of the head, and including the three-jointed tail; *antennæ* with the last joint composed of numerous minute ones, superiores as long or longer than the inferiores, four-jointed, penultimate joint with a seta at the apex, inferiores five-jointed; *feet* fourteen, the two anterior pairs monodactyle, subequal, hands oval, third and fourth pairs smallest; *tail* with small fasciculate spines above and bifid ones at tip.

#### SPECIES.

1. *G. \*fasciatus*. *Body* whitish, translucent, with obsolete greenish bands; *eyes* reniform, situated at the outer base of the antennæ, terminal joint of the superior antennæ with about thirty articulations.

*Inhabits* the larger streams of fresh water.

Cabinet of the Academy.

*Body* punctured, fasciate with faint green, which after death becomes of a rufous colour; *superior antennæ*, second joint annulate with ferruginous, seta attaining the tip of the fifth articulation of the terminal joint, terminal joint with from twenty-five to thirty articulations; *inferior antennæ* hairy, second and third

joint each with a ferruginous spot above, first joint of each pair, with a green spot on the inner side; *feet* hairy, faintly spotted with green, fifth and sixth pairs generally reflected above the back, seventh pair reflected when swimming; three last segments of the body composing the tail, each with three fascicles of short spines above; *eyes* marginal, smaller above; *hands* oval, palm unarmed.

Length not quite half an inch.

This species is a common inhabitant of our rivers, and is frequently introduced into Philadelphia, in the Schuylkill water; an individual placed in a glass of water, swam nimbly about sometimes upon his back, the superior antennæ being projected forwards, and the inferior pair decurved; when at rest it was placed on its side, with the body incurved; it was not very particular in the choice of food, it tore out of the shell, and eagerly devoured, a young *Lymnæa catascopium*; and also eat some vegetable food. The antennæ assists these animals very much in obtaining the minute particles of food, which abound in the water; when an object of a proper size comes within a moderate distance of his mouth, one of them strikes it with great dexterity into the grasp of the four anterior feet, the first pair of which appears to be most employed. It differs from the *G. pulex* of Europe, more especially in having reniform eyes. An extraordinary resemblance prevails, between this species and an inhabitant of the salt water, the only difference appears to be in the somewhat larger size of the latter, but not having succeeded in discovering a specific difference.

I consider them as the same; in colour they may differ inconsiderably.

2. *G. minus*. *Eyes* reniform; *superior antennæ* longer than the inferior ones, terminal joint with about twelve articulations.

*Inhabits* rivulets and small fresh water streams.

Cabinet of the Academy.

*Body* whitish, with a few very pale fulvous lateral spots; *eyes* reniform, blackish, placed at the exterior base of the superior antennæ; *superior antennæ* obviously longer than the inferior ones, seta short, attaining the tip of the second articulation of the terminal joint, terminal joint with about twelve articulations.

Length three-twentieths of an inch.

Found in brooks under stones, and may be readily discovered by taking a stone out of the water, and inspecting its inferior surface.

3. *G. mucronatus*. *Eyes* irregularly reniform, blackish; *antennæ* subequal; eighth, ninth, and tenth segments of the body mucronate above.

*Inhabits* the coast of the United States.

Cabinet of the Academy.

*Antennæ* subequal, superior ones with about twenty articulations in the terminal joint, seta attaining the tip of the fourth articulation; *eyes* somewhat reniform, truncate above, and forming an angle towards the upper base of the antennæ; eighth, ninth, and tenth joints of the body, terminating above in a strong,

acute, somewhat elevated spine; rather smaller than *G. fasciatus*.

This species, which is an inhabitant of the salt water, I caught in the bay of Egg-harbour, and near the mouth of St. John's river, Florida; it is remarkable for the dorsal, immovable spines, by which it is very readily distinguished from others, but it is necessary to observe that in the male these dorsal spines are often less distinct than in the female, sometimes indeed, in this sex they are entirely wanting on the eighth and tenth segments, and that of the ninth is very small.

4. *G. \*appendiculatus*. Caudal segments, and three terminal segments of the body, dentated on their posterior edges; feet in one sex, second pair didactyle.

Inhabits Georgia.

Cabinet of the Academy.

*Clypeus* not extended beyond the frontal curve; eyes moderate, oval, hardly extending above the inferior base of the superior antennæ; feet, anterior pair filiform, hand somewhat dilated, nail placed on the middle of the tip, short, curved, acute, second pair of feet in one sex with one of the hands very large, didactyle, nearly equal to one half of the body, subobovate, inferior edge rounded, superior one rectilinear, terminating at the base of the thumb in an obtuse angle, tip or palm of the hand tridentate, lower tooth very small, fingers deflected nearly right angularly, thumb grooved, groove forming an emargina at the outer tip for the reception of the tip of the finger; (in

the other sex the second pair of feet are monodactyle, longer than the first, with the lamellary appendice of the inner base much elongated, compressed, attenuated, pediform, two-thirds the length of the foot) *body*, eighth, ninth, and tenth segments dentate at their posterior tips above, with seven strong, prominent teeth, of which the dorsal one is shortest; *tail*, two first segments armed at tip above with two prominent acute teeth.

Length three-tenths of an inch.

This animal corresponds with the generic characters in having the accessory seta to the antennæ, and the moveable spines on the tail, though it is observable that these spines are few in number and not fasciculated. But in the form of the four anterior feet it differs very much from the other individuals of this genus, and makes a near approach to *Orchestia*, from which it is distinguished by the length of the superior antennæ, of which the characters agree with those of *Gammarus*. The remarkable elongation of the inner lamella of the second pair of feet in one sex is a very striking peculiarity of this species, more especially observable as the feet themselves are concealed when at rest, and that so effectually, that although confident of their existence it was not without considerable difficulty that I brought them to view. In consequence of this relative position of the second pair of feet and their appendices, the latter would be mistaken for the feet, by any one who was not attentive to the general organization of these parts. It is probable that this animal will form a new

or sub-genus, which would very properly arrange under Gammarus.

Genus \*LEPIDACTYLIS.

*Essential Character.*

*Antennæ* four-jointed, furnished beneath with plumose ciliæ, intermediate ones with an accessory seta placed at tip of the third joint. *Clypeus* produced between the bases of the intermediate antennæ and acute. *Feet*, two anterior pairs simple; equal, third and fourth subequal, didactyle, fingers lamelliform; remaining feet spinous without nails.

*Natural Character.*

*Body* compressed-oval.

*Head* distinct, subquadrate, extended into a short acute rostrum between the intermediate antennæ; antennæ subequal, four-jointed, *inferiores* rather longer, incurved, second and third joints dilated beneath, compressed, and ciliated beneath with plumose, elongated hairs, these two joints when at rest form a continued oval, the former is dolabriform, terminal seta eight-jointed, verticillate, *superiores* porrected, basal joint dilated, depressed, second one much smaller, placed on the inner tip of the preceding, and with that joint furnished with plumose ciliæ beneath, third joint much smaller than the second, and furnished at the tip with a triarticulate accessory seta, parallel with

the terminal joint, terminal joint of about eight segments, and not longer than the preceding joints conjunctly; *eyes* convex, touching the anterior edge of the head; *thorax* with seven segments, and lateral scales; *feet* fourteen, two anterior pairs in each sex simple, filiform, equal, third and fourth pairs equal, didactyle, hands compressed, not dilated, finger rounded, thumb oval, lamelliform, remaining feet gradually larger, compressed, armed with short spines, and destitute of a nail; hind pair largest, antipenultimate joint lengthened above, and nearly attaining the tip of the following joint which is crenate and spinous on the edge, terminal joint compressed, serrated, and spinous on the edges, and truncate at tip; anterior pairs of feet furnished at their inner bases with oblong oval moveable lamellæ

*Abdomen* of three segments, abruptly narrower than the thorax, each furnished beneath with natatory feet, consisting of short, rounded peduncles, supporting double setæ, of which the outer ones are longest, third segment abruptly inflected at tip; *tail* inflected, armed with bifid styles.

#### SPECIES.

*L. \*dytiscus.* *Eyes* orbicular; *body* when recent white, with an abbreviated internal ferruginous vitta, including the alimentary canal; *accessory seta* of the intermediate antennæ, attaining the tip of the fourth segment of the terminal joint; anterior pairs of feet hairy.

Length, male one quarter, female three twentieths of an inch.

*Inhabits* coast of Georgia.

Cabinet of the Academy.

This active little animal is one of the many inhabitants of small pools of water left by the recess of the tide on the coast of Georgia and Florida, and it is probable, considering the vast range of animals on this eastern part of North America, that it occurs much farther north, especially as it is found in considerable numbers in the localities I have assigned to it. In those shallow pools its presence may be ascertained by the numerous and irregular tunnels which it forms in the sand, like miniature representations of those of the mole, only less rectilinear. These little tubular edifices are formed by the animal when in pursuit of a recluse prey, and are occasionally interrupted by his ascent towards the surface of the water. In these excursions his motion is extremely rapid, and appearing but for a moment, he is readily mistaken for a *Dytiscus* or *Hydrophilus*, which have a similar habit of occasionally visiting the surface of the water; but for the purpose of respiration. I was at first deceived by this similarity of movement, until by more attentive observation, induced by the rapidity with which it penetrated the compact sand and by its not remaining at the surface of the water a sufficient time to inhale a supply of air, or to collect a globule of it for gradual consumption, it was evident that it was an animal of perfectly distinct habits and organization from those of simple stigmata.

When placed in a vessel of water, it was observable that the oval appendices attached near the inner base of the anterior pairs of feet, assist in the process of respiration

by propelling the water to the natatory feet, by which it was again propelled backwards; this constant stream carries with it the more minute animals usually abundant in sea water, which in passing are arrested by the plumose antennæ by the palpi and anterior feet, and are conveyed to the mouth for food.

Lepidactylis is related to the Gammarii by the accessory seta of the intermediate antennæ, but is generically distinct by the form of the four anterior pairs of feet, and that of the antennæ, which combined have furnished the essential characters for this genus.

*Genus AMPITHOE. Leach.*

*Body* of thirteen segments; *antennæ superiores* as long or longer than the *inferiores*, four-jointed, seta of the penultimate joint obsolete, *inferiores* five-jointed; *feet* fourteen, the two anterior pairs monodactyle, subequal; *hands* equal, oval; third and fourth pairs smallest; *tail* destitute of fasciculated spines, armed with bifid styles at tip.

*SPECIES.*

1. *A. serrata\**. *Antennæ* equal, short, stout; *eyes* large, approximated, suboval; eighth, ninth, and tenth segments of the body serrated.

*Inhabits* Egg-harbour.

Cabinet of the Academy.

*Clypeus* acute; *antennæ* nearly equal, short, stout, attaining the base of the sixth segment of the body; *eyes* large, black, oval, placed at the outer base of the superior antennæ, and approximated above; *hands* with about three equidistant, prominent, spinose teeth on the inferior

edge or palm, the nail or thumb curved, acute, and attaining the third tooth; eighth, ninth and tenth segments of the body serrated, the last more conspicuously so.

Length two fifths of an inch.

Remarkable by its large eyes, short, stout antennæ, and serrated appearance of the hind part of the back, occasioned by the elevation of the tip of each of those segments above the base of the succeeding one.

2. *A. dentata*\*. Posterior edge of the dilated thighs strongly serrated; *eyes* distant above; *clypeus* obtuse.

*Inhabits* South Carolina.

Cabinet of the Academy.

*Antennæ* moderate, not remarkably robust; *clypeus* not projecting beyond the frontal curve; *eyes* small, subtriangular, distant above; *hand* truncate at tip, destitute of prominent teeth, but furnished with a few rigid hairs, nail closing on the tip and not on the inferior edge; *feet*, posterior edge of the dilated thighs conspicuously serrated with from eight to twelve teeth; terminal segments of the body not remarkably serrated.

Length nearly three tenths of an inch.

A very common inhabitant of the fresh water marshes of South Carolina.

3. *A. punctata*\*. *Antennæ* elongated, inferiores longer; *hands* oval, not dentated; *body* with numerous black points.

*Inhabits* Great Egg-harbour.

Cabinet of the Academy.

*Eyes* ovate, acute and distant above; *clypeus* not projecting into an angle; *antennæ* elongated, superiores two thirds as long as the inferiores, inferiores nearly equal to

the body, attenuated; *hands* not dentated, equal, oval, not larger than the carpus; *body* and *antennæ* above, sprinkled with numerous black points, fasciated on the abdominal segments; *feet*, posterior pair not serrated on the hind edge of the dilated thighs, but armed with three or four short spines.

Length rather more than three tenths of an inch.

Perfectly distinct from the preceding species by the more elongated and less robust antennæ. I obtained it several years ago at Great Egg-harbour, where it is not uncommon.

### Genus TALITRUS. Latr.

Body composed of thirteen segments exclusive of the head; antennæ superiores shorter than the peduncle of the inferiores; feet fourteen; tail armed with several bifid spines at tip.

#### SPECIES.

1. *T. longicornis*\*. *Inferior antennæ* with about thirty articulations in the terminal joint; *hand* oval, *palm* sinuated.

*Inhabits* the seabeach of New-Jersey.

Cabinet of the Academy.

*Eyes* oval; † *superior antennæ* not extending beyond the second joint of the peduncle of the inferior ones; *inferior antennæ* as long as the body, with the third joint of the peduncle rugose above and beneath, terminal joint composed of about thirty articulations; *first pair of feet*

\* Unless we carefully examine the eyes we are apt to be deceived as to their form, being sometimes but partially coloured in the dried specimen.

filiform, inner tip of the antipenultimate joint dilated into a compressed, accessory tubercle at the inner tip, penultimate joint dilated and rounded at the inner tip for the reception of the nail; *hands* of the second pair of feet dilated, oval, *palm* elevated in the middle into a large rounded tooth, which touches the middle of the thumb when at rest, leaving an interval on each side, an elevated obtuse angle at the tip of the palm, on the inner side of which the thumb rests when closed, lower edge of the hand rather longer than the palm.

Female with the second pair of feet simple, compressed, destitute of hair or short bristles, and unarmed with a nail, terminal joint of the antennæ twenty-eight to thirty articulate.

Length seven tenths, breadth one fifths of an inch.

The manners and habits of the animals of this genus are similar; they do not inhabit the waters, but are found in considerable numbers upon sandy beaches of the sea, and are well known to every observer by the name of *sand flea*; they leap about with great agility, feed upon and conceal themselves under the rejectamenta of the sea, and for repose and security dig a hole in the sand, to which they skip at the approach of danger; they furnish an excellent food for the shore birds, which may be seen constantly running about in pursuit of them. The young males of this species have the antennæ not longer than the females, but the number of articulations is not diminished. Colour in the dried specimen brownish. The *longicornis* differs in some of its characters from the genus *Talitrus* as defined by Dr. Leach, particularly in the form of the two anterior pairs of feet, which approximate it to *Orchestia*.

2. *T. grillus*. *Inferior antennæ* with about twenty-five articulations in the terminal joint; *hand* oval, *palm* parallel with the thumb.

*Talitrus grillus*. Pedibus decem; anticis apice incrassatis, chelatis. *Latr. Hist. Nat. Crust. et Ins.* from *Bosc*.

*Inhabits* sandy beaches.

Cabinet of the Academy.

*Eyes* suborbicular or a little angulated; *superior antennæ* hardly exceeding the second peduncular joint of the inferior ones; *inferior antennæ* much shorter than the body, a little hairy but not rugose upon the third peduncular joint, terminal joint composed of about twenty-five articulations; *anterior pair* of feet with a prominent obtuse tubercle on the antipenultimate joint, penultimate joint dilated into an obtuse tubercle at the inner tip to receive the thumb; *hand* of the second pair of feet oval, dilated, *palm* oblique, unarmed, convex so as to receive the thumb without an interval, as long as the lower edge of the hand.

Female, articulations in the terminal joint of the antennæ the same as in the male; the second pair of feet are like those of the female of the preceding species.

Length rather more than half an inch.

Found in great abundance on the sandy beaches; when alarmed will sieze a portion of its food and skip with it towards its hole in the sand; it will not voluntarily venture into the water. I have considered this as the *T. grillus* of *Bosc*, notwithstanding the characters which he refers to that species, "dix pattes, le deux premier terminées par une main oval a crochet simple." I do not know of any animal that will correspond with these

characters, the present one certainly does not; but as he further observes that, "cette espèce se trouve en grande quantité sur les côtes de l'Amérique septentrionale," and that the posterior antennæ are half as long as the body, I conclude that he has certainly been mistaken in the number of the feet of his specimen, and has considered the anterior pair as palpi when describing this animal. It is smaller and more slender than the preceding, and becomes red when dried. This species has the same relation to the genus *Talitrus* as defined by Dr. Leach, that the preceding one has.

*Genus* PODOCERUS. *Leach.*

*Antennæ* pediform, inferiors longer, stouter, and with the terminal joint inarticulate or very obscurely articulated; two anterior pairs of feet monodactyle, *hands* dilated, that of the second pair of feet larger, *palm* unarmed with teeth.

*SPECIES.*

*P. cylindricus*\*. *Hands* of the second pair somewhat cylindrical; *eyes* small, not prominent.

*Inhabits* Egg-harbour.

Cabinet of the Academy.

*Eyes* small; *front* acute; *superior antennæ* attaining the tip of the third joint of the inferiores, *inferior antennæ* much thickened, hairy, the terminal joint shorter than the preceding one; *hand* of the second pair, not larger than the carpus, *palm* longitudinal, rectilinear, *thumb* much shorter than the hand; third, fourth, and fifth pairs of feet short, much compressed, nail as long as the preceding

joint, which is suboval and narrower than the one before it; sixth and seventh pairs reflected, and of the usual cylindrical, elongated form.

Length less than three twentieths of an inch.

This is one of the many species of this class of animals which may be found inhabiting marine plants, *Fucus*, &c., and also Zoophytes, devouring the fabricators of the latter and seeking a fugitive prey amongst the leaves and branches of the former.

### *Genus* UNCIOLA\*.

#### *Essential Character.*

*Antennæ* subpediform, superiores with an articulated seta at the base of the fourth joint; *anterior feet* monodactyle; second pair with adactyle compressed hands; *coxæ* not dilated.

#### *Natural Character.*

HEAD deeply emarginate beneath the eyes to receive a segment of the base of the lower antennæ (ear?), and projecting into an acute angle between the bases of the upper antennæ; *eyes* hardly prominent, placed on a somewhat advanced portion of the head, between the bases of the upper and lower antennæ; *antennæ* robust, terminal joint of the superiores rather longer than the preceding one, furnished at base with an articulated seta, inferiores rather shorter, thicker, terminal joint shorter than the preceding one; THORAX composed of seven segments each furnished with feet, of which the first pair are largest, *hand* dilated, monodactyle, second pair with a dilated, compressed, subequal carpus and hand, the latter

simple, with two minute hooks at tip, posterior pair longest; *coxæ* simple or not remarkably dilated; ABDOMEN of three segments; *natatory feet* with the filaments subequal; *tail* of three segments, the first and second bearing each a pair of bifid styles, terminal one suborbicular, with a pair of simple, depressed styles, concealed by the others.

SPECIES.

*M. irrorata*\*. *Eyes* hemispherical; *hands* of the anterior feet with a longitudinal palm, and prominent tooth, those of the second pair compressed, ciliated.

*Inhabits* Eggharbour.

Cabinet of the Academy.

Accessory seta of the superior antennæ attaining the fifth articulation of the terminal joint; *eyes* conspicuous, rounded; *palm* of the anterior feet a little convex in the middle, a large obtuse tooth at base; nail attaining the carpus, which terminates so as to appear like a second tooth of the hand; second pair of feet ciliated, with a subtriangular hand, segments of the abdomen mucronate each side behind; *colour* when recent, pale with very numerous red points.

Length three tenths of an inch.

Not being able to refer this animal to any existing genus, I was induced to frame the present genus for its reception. It approaches *Gammarus* by having the accessory seta to the superior antennæ, but is excluded from that genus, and its congeners, such as *Talitrus*, *Dexamine*, *Leucothœe*, &c., by the absence of the enlarged lamellated *coxæ*, which are so conspicuous in those genera. To the genus *Pherusa* it seems to approach by

the form of the second pair of feet,\* but Dr. Leach observes that there is no seta to the antennæ of that genus. By the characters drawn from the simple coxæ, the thick, stout antennæ, emarginate lateral angles of the head, position of the eyes, and in fact from the general habit of the body, it seems to arrange naturally with *Podocerus*, *Jassa*, *Cerapus*, *Atylus*, &c.; from all of which it is sufficiently distinguished by the form of the four anterior feet. It is not uncommon on the branches of *Fucus*, *Sertularia*, &c. in the estuaries of Newjersey.

#### ORDER IV. LÆMODIPODA. *Latr.*

*Head* united to the first segment of the thorax; *eyes* two; *stemmata* two; *maxillæ* four, placed in a transverse line, labiform; *branchia* vesicular, at the base of the feet, subcaudal none.

#### *Genus* CAPRELLA. *Lam.*

*Body* linear. *Antennæ* four, the upper ones with the last segment as long as the three others and articulated, lower ones shorter; *anterior pair of feet* appearing to arise from the head; *branchia* globular or oval, substituted for the third and fourth pairs of feet; *anus* with two little appendices.

#### SPECIES.

1. *C. geometrica*\*. *Body* above glabrous; *head* with a short acute spine before; *hand* of the second pair of feet with one acute and one very obtuse tooth.

*Inhabits* salt-water bays; common.

Cabinet of the Academy.

*Head* obtuse before, beneath gibbous, anterior segments of the body gibbous beneath, subcylindrical, three last segments shorter, convex above, terminal one smallest, and truncate at tip; second pair of feet with dilated, oval, compressed hands, armed with teeth, one of which is near the base, linear and almost parallel with the palm, the other large, obtuse, little elevated, placed near the base of the claw; *thumb* curved, suddenly attenuated within at tip, where it closes on the posterior tooth; *branchia* short, oval; three posterior pairs of feet armed with curved, acute claws, nearly as long as the preceding joint; terminal pair longest.

Length three tenths of an inch.

Found on Fuci, &c.; motion moderate, walks like the larvæ of the Geometrica, and, like many of them, attaches itself when at rest in an oblique position by means of the three posterior pairs of feet. When recent the eyes are red; antennæ and feet annulate with reddish-brown, these annuli resemble spots of short opposite lines. *Body* with a few scattering reddish-brown spots.

2. *equilibra*\*. *Body*, first and second segments equal to one half of the whole length; *feet*, second pair placed in the middle of the body.

*Inhabits* South Carolina.

Cabinet of the Academy.

*Head* rather small; *clypeus* rectangular, not projecting into an acute spine; *antennæ*, superiores attaining the tip of the third thoracic segment, inferiores not attaining the tip of the second joint of the superiores, and ciliate beneath; *body*, first and second segments, subequal, cylindrical, the latter rather longer, and one spined before the

insertion of the feet, and a little dilated at base, each more than thrice the length of the head, and together forming a moiety of the total length, third, fourth and fifth segments equal, each about half as long as the preceding one, sixth and seventh segments much smaller, subequal; *feet*, anteriores small, hand toothless, triangular-ovate, and with the carpus forming an oval mass, nail closing without interval, second pair very large, conspicuous, placed near the middle of the body, hand oblong-oval, palm rectilinear, bidentate, teeth nearly perpendicular, placed one before the middle of the palm, the other nearer the base, a third smaller tooth sometimes intervenes, thumb much curved, closing with a wide interval, the tip attaining the tip of the posterior tooth, and concealing with its base the anterior one.

Length about one inch.

A large species, remarkable for the size of the second pair of feet and their being placed nearly equidistant from the extremities of the body; I found them common in the bay of Charleston, particularly at Sullivan's island, on the two species of *Gorgonia* so common in the salt water creeks of our southern coast.

#### *Genus* CYAMUS. *Latr.*

*Body* suboval, segments transverse, anterior one confounded with the head, *feet* ten, robust, armed with a strong nail, third and fourth pairs spurious; *antennæ* four, superiores longer, of four articulations, of which the last is entire, *eyes* two; *stemmata* two.

## SPECIES.

*C. abbreviatus\**. Hands of the second pair with the palm two toothed; *branchia* oblong oval.

*Inhabits* on the Balæna —.

Cabinet of the Academy.

*Body* ovate, narrowed towards each end, *anterior feet* attenuated towards the base, hand smallest, *second pair* of feet with the hand much dilated, larger than the others, palm armed with two large, obtuse, nearly equal teeth, one placed near the base and the other near the tip, thumb as long as the palm; *branchia* oblong oval, rather more than half as long as the feet, placed upon the breast; *anus* simple.

Length less than one tenth of an inch.

This description is taken from several specimens, which were presented to the Academy by Mr. Reuben Haines, and which were procured by him from the Balæna —.

It appears to differ from the *C. Ceti* more especially in being much smaller and having the *branchia* much shorter and more dilated. Doctor Leach has substituted for the name of this genus, that of *Larunda*, in consequence of the term *Cyamus* having been applied by Mr. Salisbury to a genus of plants.

## ORDER V. ISOPODA. Latr.

*Head* distinct from the thorax, simple; *eyes* sessile, granular; *mandibles* destitute of palpi; *maxillæ* three pairs, exterior ones labiform, with two palpi united at base; *branchia* subcaudal.

## Genus CYMOTHOA. Fabr.

*Abdomen* and *tail* composed of six segments, narrower than the trunk, the ultimate one larger, and furnished on each side with two compressed, pedunculated scales; *feet* similar, with very robust, entire nails, coxæ large and conspicuous, resembling an accessory lateral articulation of the thoracic segments.

## SPECIES.

1. *C. ovalis*\*. *Body* oval; *eyes* concealed, *head* attenuated and rounded before; *tail* terminal segment as long as the five preceding ones conjunctly, rounded at tip.

*Inhabits* the mouths of *Perca*, &c.

Cabinet of the Academy.

*Body* glabrous, nearly oval; first segment longest, fourth and fifth broadest, those of the abdomen and two first of the tail nearly equal, gradually narrower and rounded with the curve of the body, ultimate segment of the tail rather narrower than the preceding one and as long as the four preceding ones conjunctly, rounded at tip and entire; *styles* not surpassing the line of the tip, equal, hardly longer than the peduncle, the inner one oval; *feet*, fourth, fifth, and sixth pairs largest, then the seventh, the anterior ones gradually smaller to the first pair, which are smallest.

Length one inch, breadth rather more than half an inch.

This species is often found attached within the mouths of salt water fish in our markets, more particularly, I believe, in those of the Perch (*Perca Americana*†, Bloch) and Black-fish (*Labrus Americanus*‡, Bloch),

† Described subsequently by Dr. Mitchill under the name of *Bodianus rufus*.

‡ Described subsequently by Dr. Mitchill under the name of *L. tantoga*.

and rarely in that of the Rock (*Perca Sexatilis*†, Bloch). I have not access to any descriptions of *C. Gaudeloupen-sis* and *Americana* that can be considered as specific, so that it is possible I have here named them erroneously. if this should prove to be the case, I will gladly embrace the first opportunity to reject the false name and restore the true one, that first given.

Nicholson in his *Essai sur l'Hist. Nat. de St. Domingo*, p. 343, pl. 7, fig. 2. gives an account and figures of a species of *Cymothoa* much resembling this, under the name of *Pou de Sarde*, *Pediculus marinus*. He found it in the branchia of a "Sarde."

2. *C. prægustator*. *Body* elongated; *eyes* conspicuous; *head* not attenuated, much longer than broad; *tail*, terminal segment as long as the seven preceding ones conjunctly.

*Inhabits* mouth of *Clupea Tyrannus*‡ of Mr. Latrobe. *Oniscus prægustator*. Mr. B. H. Latrobe, *Trans. Amer. Philos. Soc.* vol. v. p. 77, plate 1.

Cabinet of the Academy.

*Body* elongated, gradually attenuated before, from the sixth segment; *head* narrower than the first segment, elongated, transversely impressed near the tip, tip not narrowed; *eyes* conspicuous, oval, composed of punctures instead of granules; *antennæ* subequal, hardly attaining the middle of the eyes; *first*, *second*, *third*, and *fourth segments* nearly equal in length, the first rather longer, *fifth*, *sixth* and *seventh* shorter, the latter very much lunated to receive the abdomen; *abdomen* and *tail*

† Described subsequently by Dr. Mitchill under the name of *P. Mitchilli*.

‡ Described subsequently by Dr. Mitchill under the name of *C. menhaden*.

attenuated towards the base, terminal segment of the latter large, membranaceous, nearly as long as the seven preceding ones conjunctly, dilated at the base and gradually attenuated towards a point at tip, with a perceptible longitudinal line on the middle; *lateral styles* membranaceous, almost filiform, longer than the peduncles and much shorter than the terminal segment of the tail; *feet* gradually longer to the seventh pair, which are much longer than the others.

Length nearly two inches.

Belongs to the genus *Æga* of Dr. Leach.

It seems probable that this species resembles the *Gaudeloupenensis*, but is larger; it is very commonly found in the mouths of the *mossbankers*, (*C. tyrannus*) as above mentioned; the body is generally more or less contorted, in compliance with the form of the part of the mouth to which it was attached. An interesting account of this species is given by Mr. Latrobe under the name which I have, of course, adopted; the lateral lamellæ of the tail, which he supposed to be single, are in reality bifid as in the other species of this genus. I had an opportunity to examine a number of these fish, and of them, many were infested with this animal, but by no means every one, as has been supposed. The fishermen say the *Fish-louse* is necessary to the life of the fish, and as a proof of it, they observe that if the *louse* be taken from him the fish will die, although thrown into the water; but it is probable that the death of the fish is not owing to the removal of the parasite, but its to being withheld too long from the water, as it is well known that this fish lives but a very short time when taken from the water.

3. *C. impressa*\*. *Body* oblong; *head* attenuated, terminating acutely between the bases of the antennæ; *tail* with the terminal segment widely emarginate at tip and as long as the five preceding segments conjunctly.

*Inhabits* —.

Cabinet of the Academy.

*Body* oblong; first, second, third and fourth segments contracting by desiccation, their posterior margins remaining elevated and glabrous in consequence of the more crustaceous consistence of those parts; seventh segment short, very much lunated to receive the abdominal segments, which with the two first of the tail are so approximated, as to appear on each side like lines; terminal segment shorter, and more depressed in the middle so as to appear almost bilobated, tip widely emarginated, not longer than the five preceding segments conjunctly; *head* attenuated to the tip, which is acute between the bases of the superior antennæ, which are very robust and nearly attain the anterior segment of the body; *eyes* conspicuous, granulated, marginal, oval; *feet* gradually longer to the fifth pair, which are longest, sixth and seventh pairs equal to the fourth.

Length one inch.

This specimen was presented to me by Mr. Titian Peale, who remarks that it was taken at Cape-may, New-jersey. Can this be synonymous with *C. ichtyola* of Mr. Latreille?

4. *C. lanceolata*\*. *Body* oblong-oval; *head* broader than long; *tail* dilated-lanceolate, carinate, equal to the six preceding segments conjunctly.

*Inhabits* —.

Cabinet of the Academy.

*Body*, the transverse less than half of the longitudinal diameter; segments narrower before and rounded, acute behind; edge not thickened; *antennæ* not robust; *abdomen*, segments suddenly narrower than the thoracic segments, subequal, the posterior ones gradually narrower, *terminal segment* dilated, lanceolate, a transverse impressed line at base, longitudinally carinated, carina obsolete towards the base, inner terminal joint of the lateral appendices triangular, outer one linear somewhat obliquely truncated at tip.

Length three fourths of an inch.

Found cast on the beach of Cumberland Island, Georgia.

5. *C. oculata*\*. *Body* elongate-oval; *head* trilobate behind, middle lobe smallest; *abdomen*, segments not shorter than the terminal thoracic ones; *tail*, terminal segment shorter than the four preceding segments conjunctly.

*Inhabits* the Sheepshead.

Cabinet of the Academy.

*Body*, transverse less than one third of the longitudinal diameter, lateral line forming a perfectly regular uninterrupted curve, segments gradually narrower to the base of the terminal segment, those of the abdomen and tail not shorter than the terminal thoracic ones; *colour* whitish with very numerous brown points; *head* broader than long, regularly rounded before, edge not thickened beneath, trilobate behind, middle lobe rather smallest; *eyes* large, conspicuous, fascetts regularly hexagonal; *tail*, terminal segment hardly broader than the preceding,

depressed, rounded at tip, not carinated, edge ciliate, nearly equal to the length of the four preceding joints conjunctly, inner lamella of the lateral appendices triangular, hind edge but little oblique, ciliated, and mucronate at the outer tip, outer lamella oblong-oval, ciliated on the inner edge and two-spined at tip.

Length half an inch.

Taken in St. John's river, Florida, on the Sheepshead (*Sciæna ovicephalus*, Bloch.)† Belongs to the genus *Æga* of Dr. Leach.

6. *C. immersa*\*. *Head* subquadrate; *thorax*, first segment profoundly emarginate for the reception of the head.

*Inhabits* —.

Museum of South Carolina, and Richmond museum.

*Head* transversely subquadrate, somewhat narrowed to the tip, which is truncated; *body*, *anterior segment* very large, profoundly emarginate for the insertion of the head, the lateral processes rounded at tip and nearly attaining the transverse line of the clypeus, with a considerable interval between the tip and the anterior angle of the head; *third* and *fourth segments* longer behind, above; *fifth segment* widest; *feet*, large joint of the fourth pair extended behind into a spine, that of the three posterior pairs obtusely produced behind, nails rather small; *abdomen* abruptly much narrower than the thorax; *tail*, terminal segment large, membranaceous towards the tip, lateral appendices very short.

Length nearly one inch and three fourths.

† This well known species has recently been described by Dr. S. L. Mitchell under the name of *S. ozis*.

The specimens above referred to are the only ones which have occurred, that of the museum of South Carolina was found by Mr. L'Herminier at Gaudeloupe, that of the Richmond museum, I was informed, was taken on the coast of the United States.

*Genus* SPHÆROMA. *Latr.*

*Body* contractile into a sphere; *tail* entire; *lateral styles* foliaceous, bifid, lacinæ equal; *head* extended behind, on each side, into oculiferous lobes; *nails* bifid.

*SPECIES.*

*S. quadridentata*\*. *Body* oval; *tail*, terminal segment semioval, equal, *external lateral lamella* four-toothed.

*Inhabits* coast of Georgia and of East Florida.

Cabinet of the Academy.

*Body* oval, punctured; *tail*, terminal joint equal to the five preceding segments conjunctly, semioval, truncate at base and rounded at tip, surface equal, punctured, convex at base and concave before the tip, *lateral lamelle*, interior one oblong-oval, acute, entire, carinate at base over the insertion of the exterior one, exterior lamella serrate on the outer edge with about four teeth, of which the anterior one is placed rather before the middle, smallest, minute, obsolete or wanting, inner edge rectilinear, ciliated; *colour* brownish or horn colour, when recent, usually varied with large whitish or rosaceous spots and with numerous minute brown points; incisures usually pale yellow; eyes and nails black; exterior lateral lamella immaculate.

Length of the female nine twentieths of an inch, male much smaller.

Varies very much in its colours, is of a plain brownish horn colour, rarely ferruginous, very often marked with two large patches of whitish or rosaceous, one of which is placed on the anterior disk and the other on the base of the tail, connected by a whitish dorsal line; sometimes we have a dorsal line only, extending from the head to the tail. I found these animals very numerous on the beach of St. Catherine's island, Georgia, concealing themselves under the raised bark, and in the deserted holes of the Teredo, &c., of such dead trees as are periodically immersed. They always swim on their backs.

(To be continued.)

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*A case of unusual arrangement in the ascending Cava and in the external Jugular Veins of the Human Subject. By William E. Horner, M. D. Read August 18, 1818.*

While prosecuting a course of dissections in the year 1813, the subject of the present paper accidentally fell into my hands. After injecting its blood vessels with the view of making a dried preparation, I was much surprized to find, in the course of the dissection, that an important part of its vascular system deviated in a very singular manner from what is commonly observed. Having submitted the preparation to the examination of Dr. Wistar, late professor of anatomy, the interest he took in it induced me to present it to him, and it is now an article in the Anatom-

*An account of the Crustacea of the United States. By Thomas Say. Read September 22, 1818.*

(Concluded.)

*Genus STENOSOMA. Leach.*

*Body* sublinear; *tail* two or three jointed, ultimate joint destitute of lateral appendices, furnished beneath with two parallel laminæ, attached by their external margins and opening like valves; *antennæ*, exteriores elongated, interiores very short.

SPECIES

1. *S. irrorata*\*. *Body* oblong, third segment broadest, attenuated to the tip of the tail, which is three toothed, middle tooth longest.

*Inhabits* Egg-harbour; common.

Cabinet of the Academy.

*Body* oblong, attenuated before and behind from the third segment, second, third and fourth segments longest, nearly equal; *tail* with the first and second segments equal, short, third equal on each side to the preceding, but obsolete above, terminal segment as long as the six preceding ones conjunctly, longitudinally somewhat elevated on the disk, tip with two crenæ forming obtuse lateral teeth and a more prominent middle one; *antennæ* half as long as the body, interior ones very short, attaining the tip of the third joint of the exteriores; *eyes* somewhat hemispherical, placed on the middle of the lateral margin.

Length, female rather more than one half of an inch.

Very common in bays and inlets of the coast on fuci, &c.

2. *S. filiformis*\*. *Body* very much elongated, linear; *segments* distant emarginate each side; *antennæ*, exteriores subclavate; *tail* cuneiform at tip.

*Inhabits* Egg-harbour.

Cabinet of the Academy.

*Body* appearing of only seven segments exclusive of the ultimate one, of equal breadth throughout, sometimes covered with very short filaments; segments emarginate, each side, and separated by wide insitures; ultimate segment nearly as long as the four preceding ones, contracted in the middle of the margin, and suddenly attenuated near the tip into an obtusely cuneiform termination; *head* elevated on the disk into a tubercle which is sometimes double; *eyes* hemispherical, very prominent; *antennæ* robust, intermediate ones very short, exterior ones more than half as long as the body, terminal joint perceptibly somewhat thicker than the preceding.

Length two fifths of an inch.

Found in company with the preceding species, and may be readily known by its linear form.

### *Genus* IDOTEA. *Leach.*

*Body* oval, *caudal* segments two or three, ultimate one largest, destitute of lateral appendices, furnished beneath with two laminæ, which are elongated, parallel, attached by their external margins and opening like valves; *antennæ* subequal, short.

#### *SPECIES.*

1. *I. cæca*\*. *Body* ovate, attenuated behind to an acute point; *antennæ* equal, approximated at base, without

interval; three anterior pairs of feet monodactyle; *eyes* inconspicuous.

*Inhabits* coast of the United States.

Cabinet of the Academy.

*Body* broadest at the third segment; three abdominal segments narrowest; *head* quadrate, immersed, depressed, a profound fissure on the lateral edge; *antennæ* as long as the head, equal; *tail*, first segment short, second somewhat trilobated, middle lobe interrupting the preceding segment above, *ultimate segment* half as long as the body, attenuated to an acute point, convex and subcarinate, above, margin near the tip suddenly depressed; *feet* gradually longer to the posterior ones which are longest; three anterior pairs robust, monodactyle, remaining ones simple, unarmed, furnished with rigid hair or setæ; *nails* of the hind pairs rectilinear, tipped with setæ.

Length nearly three tenths of an inch; one specimen was upwards of two fifths.

Found in the small pools of sea-water, left by the reflux tide. Colour when recent, whitish, varied with brown dots, which are sometimes nearly united into bands; *eyes* milk-white; head with a transverse black band, which is angulated behind, a large milk white spot on the back and a smaller triangular one before the tail, both sometimes obsolete; swims on its back, and conceals itself in the sand; found as far south as Florida.

2. I. *triloba*\*. *Body* oval, somewhat oblong; *segments* with the lateral processes convex; *intermediate antennæ* short; *feet* armed with strong curved nails.

*Inhabits* Egg-harbour.

Cabinet of the Academy.

*Body* composed of seven segments, *tail* of two; *segments* of the body with the lateral processes, very convex, lobated, first segment shortest; *head* transverse, oval, unequal on the disk, an impressed transverse line behind, sinuate anterior edge, and impressed with a longitudinal abbreviated line; *antennæ* filiform, rather distant, intermediate ones short, exteriores with the terminal joint rather more than half as long as the preceding one; *eyes* very prominent, hemispherical, placed in the middle of the lateral margin; *tail* narrower than the body, first segment trilobated, middle lobe much the largest, convex, ultimate segment rather longer than the three preceding ones conjunctly, subtriangular, very convex on the disk, margin near the base depressed and channelled, tip depressed, acute; *feet* rather long, armed with curved, acute nails.

Length one fourth of an inch.

Found with the preceding species, is remarkable by the lobate appearance of the lateral processes. Of the *I. triloba* a new genus might be formed with the greatest propriety, as the description will evince.

### Genus ASELLUS. Geoff.

*Tail* one large segment; *caudal appendices* exerted, bifid, inserted near the middle of the hind margin; *exterior branchial valves* rounded, attached by the base; *tarsi* simple; *eyes* minute; *antennæ* four, setaceous, the last segment many-jointed.

## SPECIES.

1. *A. communis*\*. *Body* oblong oval, furnished with short rigid hairs; *interior antennæ* equal to the peduncle of the exterior ones; *caudal appendices*, peduncle depressed.

*Inhabits* small streams of fresh water, under stones.

Cabinet of the Academy.

*Body* oblong-oval, a little narrowed before, segments transverse, subequal, indistinctly emarginate on the edges each side, hairy; hairs very short on the disk, longer on the edges and feet; third and fourth segments linear, the anterior ones a little curved forwards and the posterior ones backwards; *head* narrower than the first segment, and not longer; *superior antennæ* extending to the base of the tail; *inferior antennæ* equal to the peduncle of the superior ones; *eyes* obovate, oblique, prominent, black; *tail* as broad as the segments of the body, transverse-suborbicular, equal to the two last segments conjunctly, depressed, and a little prominent between the appendices; *appendices* as long as the tail, laciniae subequal, peduncle dilated; *anterior feet* hardly longer, monodactyle, unarmed; *thumb* as long as the hand; *hand* oval; *carpus* triangular; *remaining feet* gradually longer to the hind pair, which is longest, first and second joints suboval, gibbous above, third joint triangular, extended over the base of the succeeding one and tipped with long hairs, fourth and fifth linear; *tarsi* half as long as the preceding joint, simple, acute.

Length one fourth of an inch, breadth less than one tenth.

A very common species in our fresh waters, particular-

ly in rivulets under stones. It is frequently introduced with the Schuylkill water into Philadelphia. The female may be distinguished from the male by a valvular pectoral follicle in which the young are protected. In one of these I counted twenty-eight young ones.

2. *A. lineatus*\*. *Body* oblong; *interior antennæ* much shorter than the peduncle of the exteriores; *caudal appendices*, peduncle cylindrical.

*Inhabits* South Carolina.

Cabinet of the Academy.

*Body* oblong, not distinctly attenuated before; *segments* subequal, entire; *head* at base equal to the preceding segment, a sinus each side in the middle; *eyes* prominent, black; *antennæ*, exteriores as long as the body in one sex, in the other longer, interiores nearly attaining the tip of the second joint; *hands* with a prominent angle on the middle of the inferior edge, thumb closing on and surpassing the angle, shorter than the hand; *nails* somewhat bifid at tip; *terminal caudal segment* longitudinally subovate, styles elongated cylindrical, equal to the terminal segment of the body, lacinia very unequal, inner one nearly thrice the length of the outer one, truncate at tip; *colour* pale brown with a double dorsal brown line, united at the tip of the tail, a brown line or two each side of the tail.

Length nearly one fourth of an inch.

This animal is not an uncommon inhabitant of the swamps in the forests of South Carolina. It might be referred to the genus *Janira* of Dr. Leach.

## Genus PHILOSCIA. Latr.

*Caudal styles* four, simple, saliant, lateral ones biarticulate; *antennæ*, exteriores eight-jointed, interiores obsolete; *tail* abruptly narrower than the body.

## SPECIES.

1. *P. vittata*\*. Fuscous, glabrous, margin and two broad vittæ cinereous.

*Inhabits* the United States, common.

Cabinet of the Academy.

*Head* above transversely oval; *eyes* longitudinally oval, granulate; *antennæ* with minute distant hairs, ultimate joint tipped with a seta; *body*, first segment rather longer than the others, which are nearly equal; *tail*, segments subequal, terminal one rounded at tip, not longer than the preceding one, and attaining the tip of the first joint of the external styles, intermediate styles setaceous at tip, rather shorter than the external ones; *head*, *body*, and *tail* with the margin and two broad vittæ cinereous.

Length one-fifth of an inch.

Very common under stones, wood, &c. in moist situations.

2. *P. spinosa*\*. Brown, oblong-oval, with numerous spines above; *feet* armed with short setæ beneath.

*Inhabits* Georgia.

Cabinet of the Academy.

*Body* brown, elongate-oval, armed with numerous spine-like tubercles; sixth and seventh segments produced on each side behind, acute, the latter attaining the base of the fifth succeeding joint; *abdominal* and *caudal*

*segments* somewhat glabrous, terminal segment surpassing the first joint of the lateral styles; *antennæ* rough and subspinose before, terminal joint glabrous, pale; *feet* beneath armed with short distant setæ.

Length nearly one-fifth of an inch.

Under stones, old wood, &c. in moist situations near Savannah, Georgia.

### Genus ONISCUS.

*Caudal styles* four, lateral ones biarticulate, intermediate ones concealed by the terminal segment of the tail; *antennæ*, exteriores eight-jointed, interiores obsolete; *tail* not abruptly narrower than the body.

#### SPECIES.

*O. affinis*\*. *Head* and *anterior segments* of the body scabrous; *tail* glabrous, terminal segment attenuated, attaining the tip of the inferior styles, and the middle of the last joint of the exterior ones.

*Inhabits* North America; common.

Cabinet of the Academy.

*Body* dilated, oval, somewhat depressed, sides a little rounded, not rectilinear; *head* and *anterior segments* of the body scabrous, posterior segments gradually less so; *tail* glabrous; terminal segment, almost subulate, attaining the middle of the last joint of the exterior styles, and exactly equal to the interior ones; *colour* fuscous with a cinereous edge and submarginal line, which are united on the tail into a broad margin, disk with a few cinereous spots.

Length half an inch, breadth three tenths of an inch.

*Inhabits* damp places, under stones, decaying wood,

&c.; when thrown on its back, turns with difficulty; exceedingly like the *O. asellus*, which was some years since in great repute in some parts of Europe for its supposed virtues in the cure of pulmonary and other diseases, but which is rejected as worthless by the present pharmacy; I consider ours as distinct on the authority of Mr. Latreille's description of the European species; he observes that "les appendices inferieures et intermédiaires de la queue dépassent la pièce supérieure et terminale du corps."

*Genus* PORCELLIO. *Latr.*

*Caudal styles* four, lateral ones biarticulate, intermediate ones concealed by the terminal segment of the tail; *antennæ*, exteriores seven-jointed, interiores obsolete; *tail* not abruptly narrower than the body.

*SPECIES.*

1. *P. spinicornis*\*. *Body* scabrous; *antennæ*, third joint with a mucronate carina above.

*Inhabits* North America, common.

Cabinet of the Academy.

*Body* scabrous with granules, black-brown, margin and submarginal lines cinereous, three dorsal lines of alternate yellowish subquadrate spots, of which the intermediate ones are smallest; *head*, *antennæ*, and *disk of the tail*, blackish, the latter with two or three small yellowish spots each side at base; *antennæ* with the third joint elevated above, and armed with an acute spine; *terminal joint of the tail* canaliculate, hardly surpassing the first joint of the exterior styles.

Length two-fifths of an inch.

A very common inmate of our houses, crawling up the walls in damp cellars, &c. It seems probable that it resembles the *P. scaber* of Europe, of which however we have no good description by which to judge.

2. *P. nigra*\*. Black, scabrous, immaculate; antennæ with the spine of the third joint hardly prominent.

*Inhabits* Pennsylvania.

Cabinet of the Academy.

*Body* black, immaculate, beneath whitish, granulae numerous, elevated, very rough, segments of the tail margined behind with abbreviated, elevated lines, terminal segment acute, attaining the tip of the intermediate styles and the middle of the last joint of the others.

Length three-tenths of an inch.

This species differs from the preceding, by being unicoloured, smaller and much more rough.

### Genus ARMADILLO. *Latr.*

*Caudal styles* four, lateral ones biarticulate, connivent with, and not longer than the terminal segment of the tail, second joint triangular; *antennæ*, exteriores seven-jointed, interiores obsolete; *body* capable of being rolled into a sphere.

#### SPECIES.

*A. pilularis*\*. Plumbeous, margin and submarginal line cinereous, three yellowish lines of spots on the disk.

*Inhabits* North America.

Cabinet of the Academy.

*Body* with very minute punctures, lateral margin, and submarginal line of spots, cinereous, three lines of large

yellowish opposite spots on the disk, segments with the hind edges whitish.

Length half an inch.

This species comes so near to the description of *A. maculatus* that I should have considered it the same, had it not been remarked that the *maculatus* is twice the size of the *vulgaris*, the former must therefore be much larger than our species, which is about equal in size to the latter, as figured by Rømer. It is very common in moist places, under stones, in decaying wood, &c.

#### ORDER V. BRANCHIOPODA. Latr.

##### SECTION I. PÆCILOPA. Latr.

##### Genus LIMULUS. Fabr.

*Head* confounded with the thorax; *antennæ* none; *mouth* inferior, simple and central, surrounded by the feet; *mandibles* and *feet* didactyle; *coxæ* supplying the place of *maxillæ*; *tail* elongated, attenuated.

##### SPECIES.

*L. Polyphemus.* *Thorax* seven-spined above; *abdomen* above three-spined; *tail* about twenty-five-spined above; *feet*, second joint of the four anterior pairs, with about five moveable spines.

*Monoculus Polyphemus* of Linne.

*Limulus cyclops.* Fabr. Syst.

*Limulus polyphemus.* Lam.

*Polyphemus occidentalis.* Latr.

*Limulus Sowerbii.* Leach. Zool. Miscel. vol. ii. pl. 84. Young.

*Inhabits* northern coast of the United States, very common.

Cabinet of the Academy, Peale's Museum.

*Thorax* sublunate, truncate at its junction with the abdomen, convex, margined on its outer and anterior edge, acute and elongated at the hind angles, seven subequal reflected spines on the disk, of which six are placed on two parallel, transverse lines, and transversely equidistant, posterior line on the edge of the truncature, lateral anterior ones bearing the eyes on their exterior side, seventh spine anterior and distant from the other, supporting two stemmata; *eyes* longitudinally oval; *feet*, second joint of the four anterior pairs, armed beneath with four or six moveable spines, of which two or three are approximated at tip, and two or three distant and placed longitudinally, second joint of the hind pair, with about two moveable spines and a much larger one at the inferior tip of the fourth joint; *abdomen* depressed, a longitudinal line of three, elevated, somewhat reflected spines, smaller than those of the thorax, anterior one placed at the base, intermediate one behind the middle, posterior one at tip over the insertion of the tail, lateral angles of the base elevated into a dilated, compressed, oblique spine, lateral edge with twelve alternately permanent and moveable spines, of which the latter are longer, hind angles elongated each side of the origin of the tail and acute; *tail* serrate above with from twenty to thirty spine-like teeth, which are unequal, inequidistant and shorter than one-fourth of the transverse diameter of the tail.

Length to the end of the tail, female nearly two feet, male about twenty inches.

The male differs from the female in being smaller,

and in having the hand of the anterior pair of feet, dilated, spherical, monodactyle, the thumb inflected at base, so as to form a right angle with the hand, compressed and obtuse at tip. In the immature state, the spines of the disk of the thorax and abdomen are very acute and prominent, but become more obtuse as the animal advances in age, so that in the full grown subject they are obsolete, often noted only by a hardly elevated tubercle browner than the shell. They are found in vast numbers in Delaware bay, in the bays of the Newjersey coast; and probably much further north. They never attempt to swim, but always crawl slowly on the bottom, the feet always concealed beneath the shell. When cast ashore by the waves, if they fall on the back, they cannot recover their proper position. Many people feed their hogs upon them, and it is said that some hogs that roam at large in the districts where they abound, become acquainted with the fact of their inability to turn themselves when placed on the back, and when there happens to be a scarcity, with a provident sagacity, they turn as many as they can eat, or as are within their view, before they proceed to satisfy their hunger. This fact with respect to one hog, was related to me on good authority.

When irritated they elevate the tail, which is acute at tip, but perfectly harmless. The boatmen make use of the thorax for baling their boats.

For the reception of her eggs, the female digs a hole in the sand with her feet, of considerable width, and but little depth, usually between high and low water marks. During this season, and for a considerable time previous to the oviposit, she is accompanied by a male, who at-

taches himself by means of his monodactyle hands, to the posterior processes of her abdomen. The connection endures so long, that the tergum of the female at the two posterior spines, is very much worn, by friction with the anterior part of the thorax of the male, and the posterior processes are often almost worn through, by the pressure of his thumbs.

The *L. Sowerbii* figured by Dr. Leach, seems to be the young of this species, as the description and figure agrees perfectly with it.

Var.  $\beta$ . Abdomen five-spined on the disk, of which three are in a longitudinal line as in the species, and a smaller one on each side in a transverse line with the anterior spine and nearer to the elevated lateral angles. This animal, which I have for the present considered as a variety only, is an inhabitant of the southern states and Florida, where they abound in considerable numbers; how far they may be found to the north I know not, or whether they inhabit the same districts with the species, but I have not observed them on this side of the Chesapeake bay. Although in general appearance it is perfectly similar to *L. Polyphemus*, yet in consideration of the character here noted, I propose that it be separated as a distinct species under the name of *australis*.

### Genus PANDARUS. *Leach.*

Abdomen at base covered by imbricate scales.

#### SPECIES.

*P. sinuatus*\*. Body dilated, thorax emarginate before, abdomen sinuate behind.

Inhabits dog fish, (*Squalus Canis?* Mitchill.)

Cabinet of the Academy.

Length one fifth of an inch.

*Body* longitudinally oblong-quadrate; *thorax* transverse-quadrate, somewhat narrowed before, emarginate between the antennæ, middle of the base rectilinear and fuscous, angles projected backward and rounded at tips; *antennæ* very short; *anterior feet* formed for suction, at tip oval or subreniform, and placed obliquely; *scales*, four subequal ones in a transverse line at the base of the abdomen, each transverse and rounded at tip, and two larger ones originating beneath the preceding, slightly dentate at tip and not concealing one half of the abdomen; *abdomen* quadrate, as wide as the thorax but rather longer, posterior edge with a central sinus and lateral one each side, posterior angles acute; *oviducts* filiform.

Very commonly occur in considerable numbers on this species of *Squalus*, attaching themselves more particularly about the bases of the fins. They are by no means so active as the *Caligus piscinus*, which also occurs in plenty on the *Cod-fish* of our coast.

### Genus BINOCULUS. Geoff.

*Body* suboval; *thorax* large; *eyes* two; *abdomen* of three, or four transverse segments; *tail* setaceous at tip.

#### SPECIES.

*B. caudatus*\*. *Body* subovate; *thorax* semioval or parabolic, posterior edge retuse for the reception of the abdomen, no dorsal, or transverse anterior line; *antennæ* exteriores laterally and horizontally extended, more than half

as long as the body, with short rigid hairs, interiores concealed; *feet* concealed, anterior pair near the base of the thorax and dilated at tip, posterior pair at the origin of the tail, extended obliquely, prominent, dilated, bisetous at tip; *abdomen*, basal segments very short, transverse, each side reflected, curvilinearly narrowed without interval, terminal segment longer, semiorbicular, narrower than the preceding ones and concealing the first caudal segment; *tail* half as long as the body, abruptly narrower than the preceding segment, segments three, basal one longitudinally quadrate, largest, second one transversely quadrate, narrower than the first in the female, elongated and attenuated in the male, third segment bifid and bisetous at the tip.

Length one fortieth of an inch, male smaller.

Cabinet of the Academy.

I have placed this parasite in Geoffroy's genus *Bino-culus*, not in consequence of the particular definition of that genus, but from a general resemblance in the outline, and similarity in the number and proportion of the segments of the body, which it unquestionably bears, to the singular animal discovered by that author, now the type of the genus.

In these two animals there are however striking dissimilarities, which it is unnecessary here to particularize, as those who are conversant with the generic characters as laid down by Mr. Latreille, will immediately perceive them by the above description.

This parasite was found in considerable numbers, on various parts of the body of the specimen of *Callianassa*, described on page 238 of this Journal. The two sexes of nine tenths of the specimens were in coitu, the male adhering to the tail of the opposite sex, so as to conceal

by his body the two terminal segments. This adherence was so pertinacious, as to be permanently maintained after submersion in spirits of wine; a circumstance, which combined with the appearance of the living animals, was well calculated to deceive the ordinary observer into a belief of the unity of the two sexes so connected. Thus the thorax of the male appearing to the eye connected to the thorax of the female by a pedicel, would seem, unless minutely examined, to be no other than the abdominal portion of the same individual; nor would an ordinary magnifier exhibit the truth.

### SECTION III. LOPHYROPA. *Latr.*

#### *Genus* CYTHERE.

Shell bivalve, concealing the head; eyes confluent; antennæ two, ciliated; feet eight.

#### *SPECIES.*

*C. bifasciata\**. *Valves* ovate, viewed above and beneath, lateral view suboval, convex above, somewhat rectilinear beneath; a dorsal indentation behind the most elevated part; clothed with minute dense hairs; colour greenish-testaceous, tipped with black, the posterior spot emarginate above when the valves are closed, two black bands, the posterior one a little undulated and connected with the anterior one by a dilated, dorsal line, which terminates a little before the anterior band; *antennæ* as long as the valves, *ciliæ* obsolete; *feet* white.

Length one fortieth of an inch.

*Var. a.* *Valves* dusky green, banded and spotted with darker green, nearly as in the species.

In considerable numbers, in small shallow pools of fresh water. The specimens here described were found in Georgia and East Florida.

### *Genus* DAPHNIA.

Shell bivalve; head distinct; antennæ generally four, ramose; feet eight or twelve; eye one.

#### *SPECIES.*

1. *D. angulata*\*. *Body* viewed laterally suboval, contracted before, gibbous above near the posterior edge, beneath ventricose in the middle; *back* subovate, acute behind and contracted before; *sides* striate with numerous, minute, parallel, oblique lines; *hind edge* of the body with a prominent angle in the middle, which is obtuse at tip, above the angle it is ciliated; *antennæ*, four filaments on the superior branch, and five on the inferior branch; *colour* white or red.

Length one tenth of an inch.

Cabinet of the Academy.

Very common in the stagnant marsh water of the forests in the southern states.

2. *D. rotundata*\*. *Body* viewed laterally ovate, narrowed before, rounded behind, and destitute of any prominent angle, and of gibbosity above; lateral oblique lines obsolete; *venter* deeply ciliated; *antennæ*, superiores three-branched, a small spine above at the insinures of the joints, inferiores five-branched; *colour* white.

Less than half as large as the preceding.

Cabinet of the Academy.

Found in the stagnant marsh water of the forests, in the southern states.

*Genus* CYCLOPS.

*Body* elongated and attenuated behind; *thorax* abbreviated; *eye* one; *antennæ* two to four, simple; *feet* six to ten, hairy; *tail* long, bifid.

*SPECIES.*

*C. noviculus*\*. *Body* oval, attenuated behind; *thorax* semioval, glabrous, rounded before, truncate behind, sanguineous, hind angles acute; *tail* and *feet* white, the former as long as the *thorax*, attenuated, terminal joint bifid, seta four as long as the tail, the outer ones shorter, two small equal spines at the base of each pair, and one subequal one on the exterior side of the bifid part of the tail, a little before the base of the seta; *anterior antennæ* two thirds the length of the body, spinose, white, extended each side horizontally, recurved, and more robust near the base, and attenuated to the tip.

Found in considerable numbers in stagnant fresh water of the southern states. Swim by jerks, being alternately at rest and in motion, the female carries her eggs in two follicles, which are attached one on each side, near the base of the tail, of the same colour as the *thorax*, and vastly large in proportion with it, being nearly two thirds the size. Eggs spherical, from twenty-five to thirty or more in each follicle, consisting each of a dark nucleus and paler border.