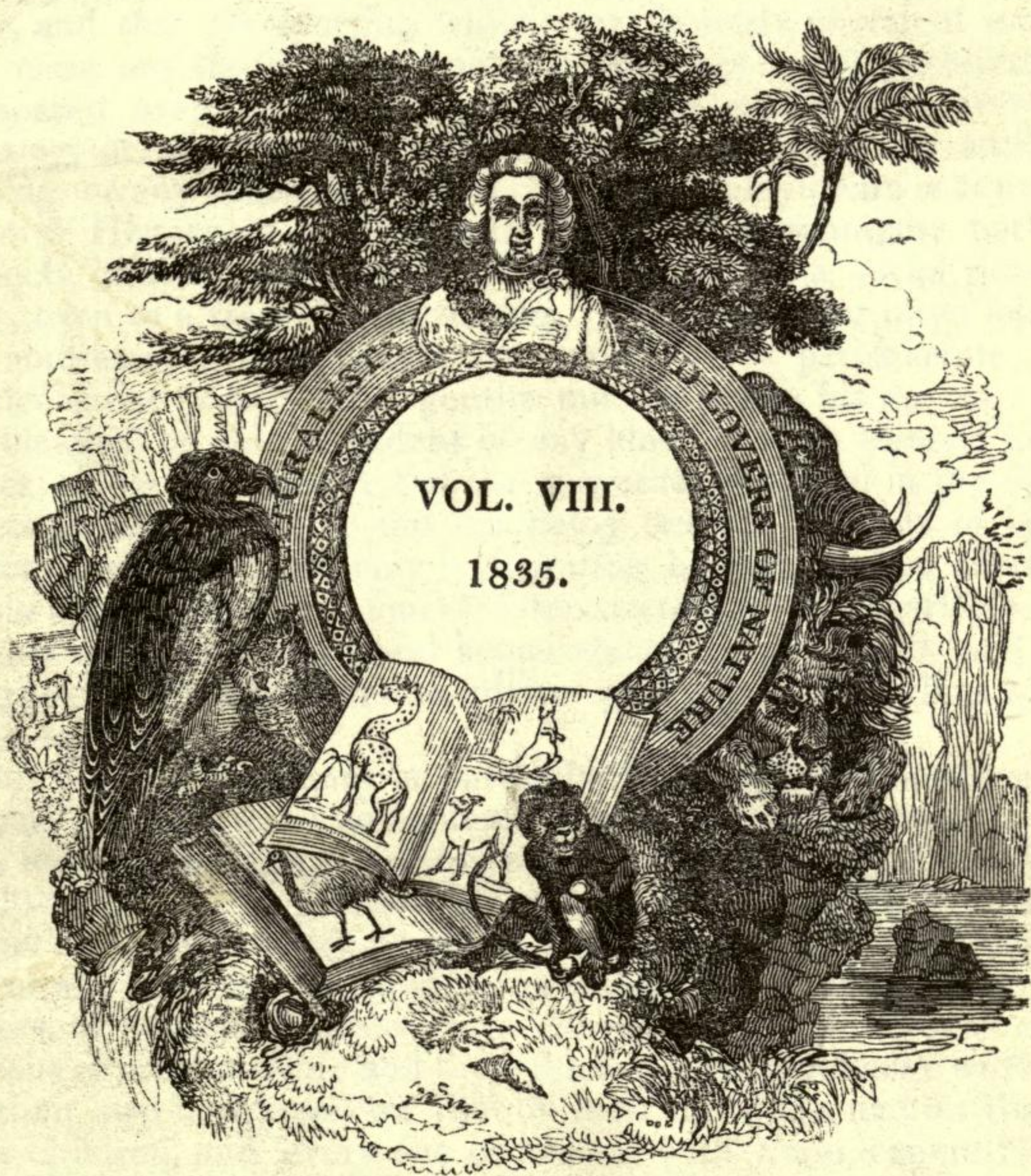


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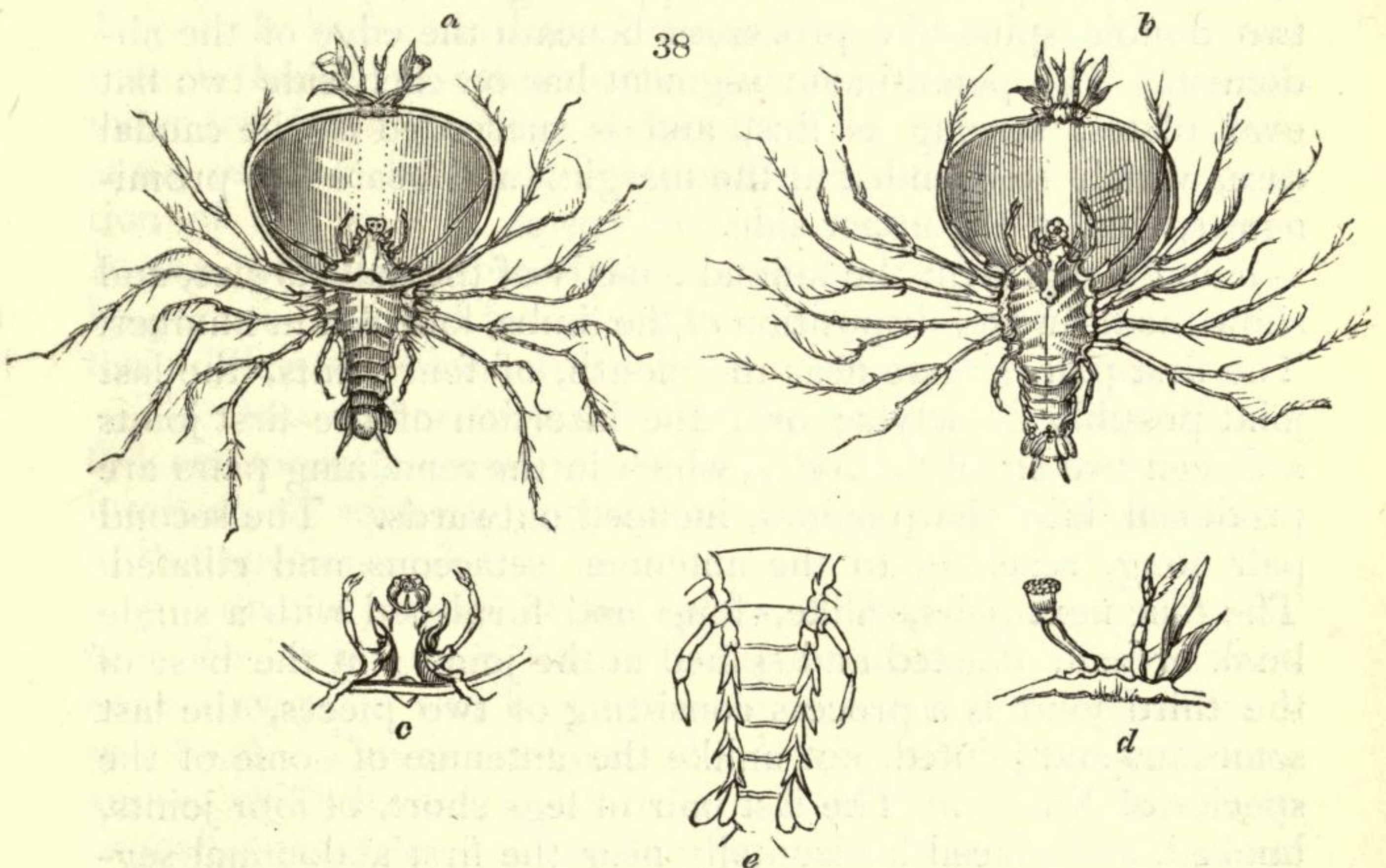
1835.



ART. III. *Illustrations of a Species of ? Phyllosòma* Leach and Latreille, or of an undescribed Genus allied to *Phyllosòma*; and of *Squilla Desmaréstii* Risso; as observed in a living Individual of each, taken on the Coast of Guernsey. By F. C. LUKIS, Esq.

SINCE the date of the publication of Dr. Leach's *Malacostraca Podophthalma Britannicæ*, the list of British Crustàcea has been augmented by the addition of several genera. *Fig. 38.* represents a genus additional; and it may prove a genus not hitherto described.

Class Crustàcea, Division Stomapòdia Cuvier and Latreille, Legion 1. Podophthálma, Order 2. Macroúra Leach, Genus ? *Phyllosòma* Leach and Latreille, Species. (*fig. 38.*)



a, A representation of the animal, exactly of the natural size, and as seen walking; the aspect ventral. *b*, The aspect dorsal. *c*, The mouth and sternum, somewhat magnified. *d*, Antennæ and eye, somewhat magnified. *e*, Abdomen, magnified.

The singular animal represented in the figure was found alive, here, lately, and brought to me, from which I have taken the annexed figure and description.

The whole body perfectly transparent, and resembling a plate of the purest mica; depressed, and composed of two distinct portions.

1st, The carapace, bearing the eyes and antennæ (*d*), in the same manner as in the genus *Phyllosòma* of Leach and Latreille, attached by the posterior edge to, and covering the front of, the thorax and mouth. (The mouth and sternum are represented, and somewhat magnified, at *c*.) Margin recurved or thickened, the sides slightly bending upwards. Eyes, two

in number, seated on peduncles, and these attached to the front edge of the carapace, above the antennæ. The two exterior antennæ (if such they can be called) hornlike, not visibly articulated, divided into two strong spines; the first inclined downwards, the other straight in front: the two intermedial antennæ articulated, and divided at the third joint into two setaceous terminations.

The second portion includes the thorax and abdomen, both bright and transparent, and scarcely visibly distinct from each other. The thorax is oval, angular, and spined above and beneath the insertion of each leg. The abdomen (*e*) consists of six segments, terminating with two sharp spines on the caudal plate. The four upper segments furnished with two double spine-like processes beneath the edge of the abdomen. The penultimate segment has on each side two flat oval plates, serving as fins, and is succeeded by the caudal case, which is rounded at the margin, and bears two prominent spines on the upper side.

a and *b* represent the animal exactly of the natural size, and show the form and disposition of the limbs, fourteen in number. The first pair, situate near the mouth, of four joints, the last joint possibly didactyle; over the insertion of the first joints are seen two small tubercles, which in the remaining pairs are produced into sharp spines, inclined outwards. The second pair long, reaching to the antennæ, setaceous and ciliated. The four next pairs, alike, long and furnished with a single hook or nail, ciliated and spined at the joints; at the base of the third joint is a process consisting of two pieces, the last setaceous and jointed, not unlike the antennæ of some of the species of *Noctua*. The last pair of legs short, of four joints, hooked, and placed horizontally near the first abdominal segment.

The mouth, situate beneath the carapace, is visible through it, minute, prominent, and provided with jaws appearing in the form of a ring, supported on each side by a crescent-shaped plate, spined beneath, and attached to the sternum, which connects it with the carapace.

The only marks on this singular crustacean were a few dark dusky blotches, near the eyes, upon the antennæ, and at the joints of the legs; the mouth and the last portion of the longest legs were minutely dotted with crimson.

To the genus *Phyllosoma*, as noticed in the *Dictionnaire des Sciences Naturelles*, this specimen bears a resemblance, but differs in the number of the legs, and in their termination. Five species of *Phyllosoma* are there described by Desmarest, first noticed by Leach and Latreille; since which Guerin, in his "*Monographie*," has mentioned others. They are all

from equatorial regions, except one discovered in the year 1815 by M. Risso, and described by him (although imperfectly), which he named *Chrysòma mediterrànea*; and he regards himself as the founder of this new genus. It was discovered near the coast of Nice. This species is figured by Guerin, in his *Mémoire sur l'Organisation Extérieure des Phyllosomes*," as *P. mediterràneum*.

My specimen lived but a short time after its capture, and appeared, when walking, as shown in *b*. Guerin, in his *Mémoire*, has figured twelve species: in all of them the flagelliform process is feathered at the last joint; this was but slightly the case with the one now described, and was only observable during life. This individual appears intermediate between *P. Reynándii* and *P. mediterràneum*. The horn-like antennæ approach those of the *Reynándii*; but the interior pair have the outer terminating article longer than the internal one, which is the reverse of the condition in the *Reynándii*: the description of that species agrees with my animal in other respects. In the *P. mediterràneum*, the peduncles of the eyes are much longer; the inflated margin of the carapace is wanting, and its form differs in being more regularly oblate than in mine.

The two spines bent downwards just below the mouth, at the commencement of the thorax, and the spines above the insertion of each leg, appear to supply a distinct character in this species.

All that is known of the habits of this singular genus is, that the animals are found on the surface of the water, and swim slowly, in which operation they move their flagelliform processes. This is nearly all that has been observed hitherto; and, as my individual came up in a bucket in deep water, it is probable that the species delights near the surface in calm weather, and sinks into the deep when the sea is ruffled.

The following are the names, and some particulars on the forms which have been discovered: —

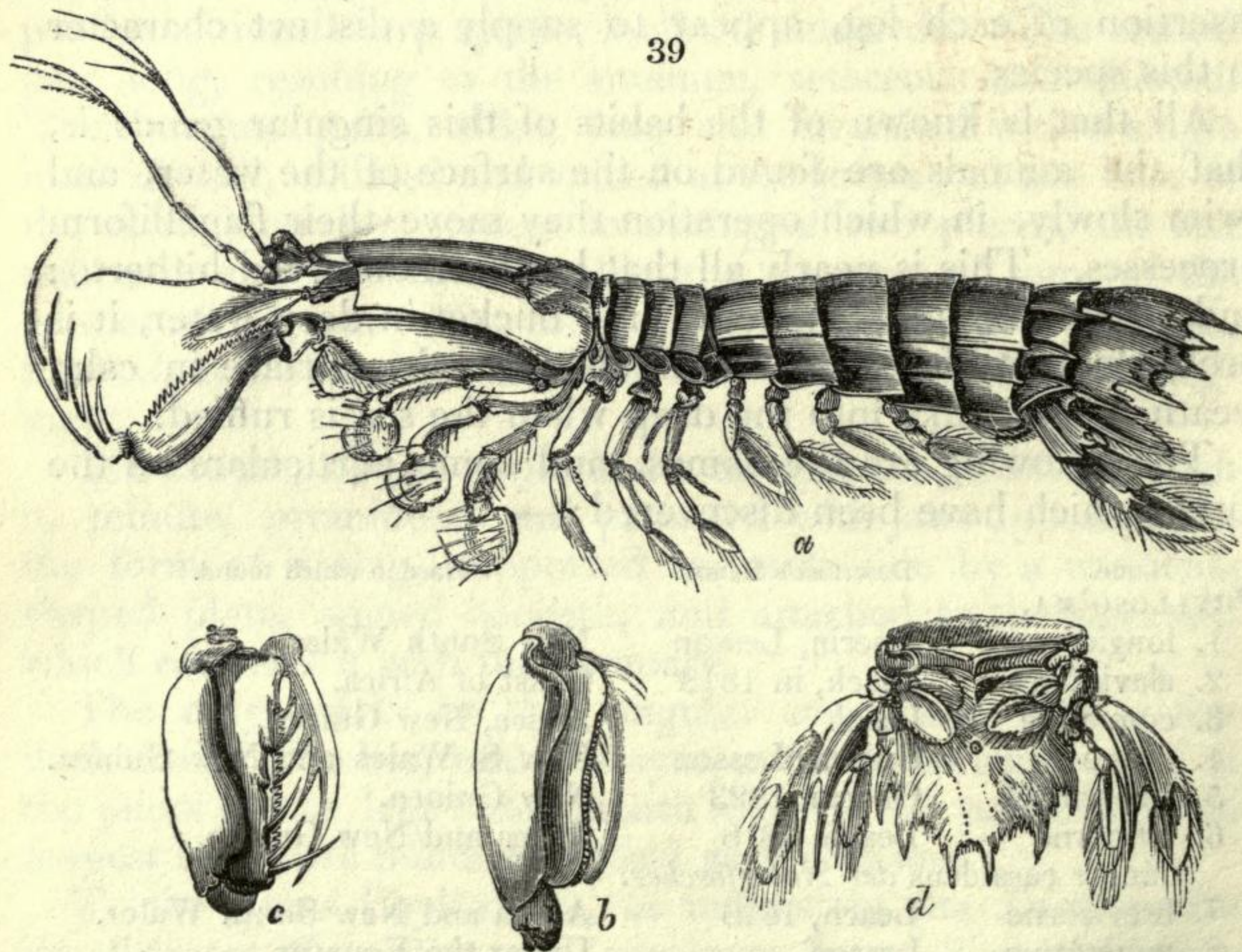
Name.	Describer's Name.	Place in which found.
PHYLLOSO'MA.		
1. longicórne	Guerin, Lesson	New South Wales.
2. clavicórne	Leach, in 1818	Coast of Africa.
3. commùne	Leach	Africa, New Guinea.
4. affìne	Guerin, Lesson	New S. Wales and New Guinea.
5. Freycinètii	Guerin, 1823	New Guinea.
6. laticórne	Leach, 1818	Africa and New Guinea.
<i>Cáncer cassídeus der Naturforcher.</i>		
7. brevicórne	Leach, 1818	Africa and New South Wales.
8. punctàtum	Lesson	Under the Equator.
9. Duperrèyi	Guerin	Port Jackson.
10. Reynándii	Guerin	Indian seas.
11. mediterràneum	Risso	Coast of Nice.
<i>Chrysòma mediterrànea Risso, 1815.</i>		
12. lùnifrons	Latreille	Coast of Coromandel.

The rare occurrence of the genus *Phyllosòma* in European seas renders the one now described the more interesting; and I hope another opportunity will enable me to investigate its habits and peculiarities; an object the more to be desired, as the different forms above quoted have not been examined in a recent or favourable state: to this circumstance must be attributed the want of correct description which has appeared among authors, as well as the imperfect figures which have been published, particularly in the *Atlas* of the *Dictionnaire des Sciences Naturelles*.

[Will Mr. Lukis please to take an early opportunity of adding a specific epithet to designate the species he has described, so that, should it prove one previously unknown, it may stand denominated by himself, the first describer of it?

A figure of the *Phyllosòma brevicòrne*, of Leach, is introduced into Kirby's just published work, entitled *On the Power, Wisdom, and Goodness of God, as manifested in the Creation of Animals, and in their History, Habits, and Instincts*. The figure is fig. 3. of plate x.: an incidental notice of the animal is given in vol. ii. p. 59.]

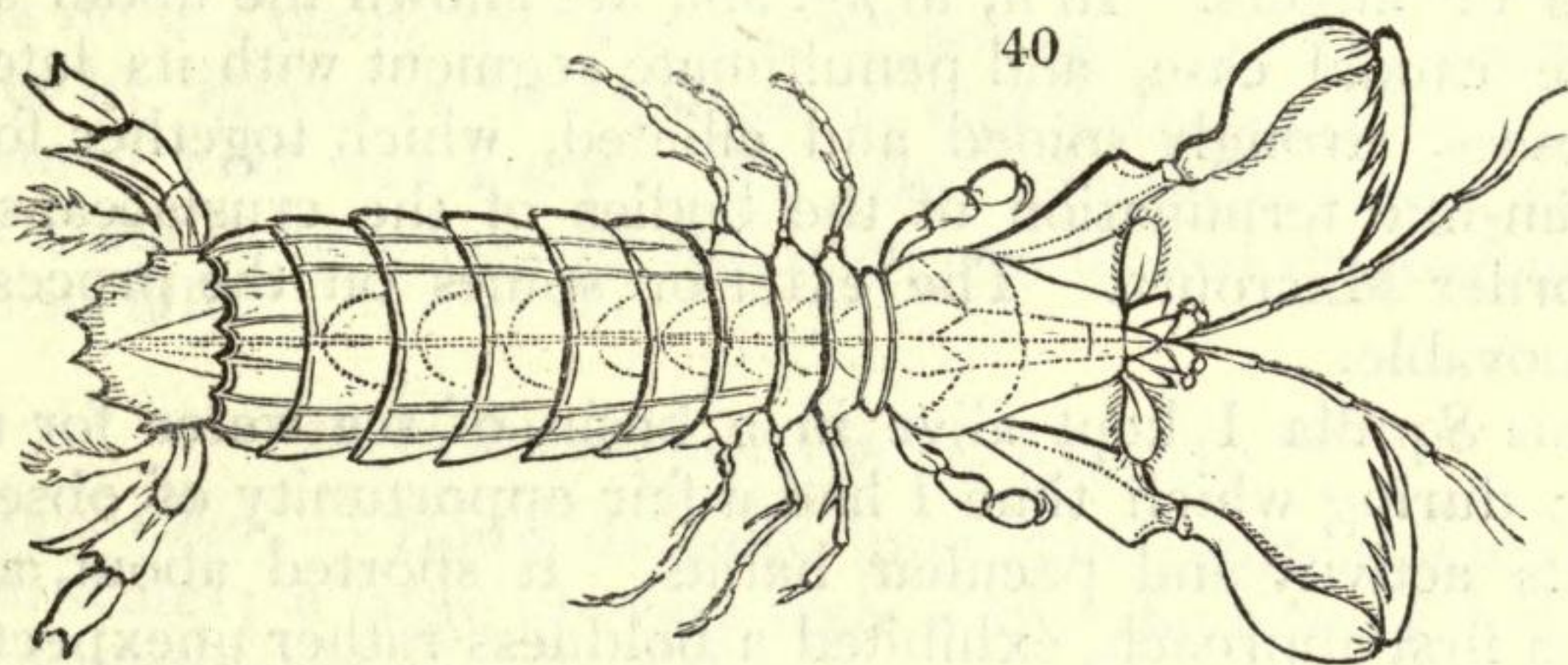
Class Crustàcea, Division Stomapòdia *Cuvier*, Legion Podophthálma, Order Macroúra, Genus *Squilla*, Species *Desmaréstii* Risso. (*figs.* 39. and 40.)



I send a representation (*fig.* 39.) of a species of *Squilla*, of which I possess a specimen, and which appears to me to be the same as that noticed by W. Yarrell, Esq., in an interest-

ing communication in VI. 230, 231., from one of two individuals captured on the coast of Cornwall by Mr. Couch of Polperro. I have preferred giving a lateral view (*fig. 39.*), in order to exhibit the various legs and processes beneath the body, and the animal's usual appearance when in the water.

In comparing my representation (*fig. 39.*) with that published in VI. 230., in illustration of Mr. Yarrell's communication, some differences will be seen, arising, perhaps, from inadvertence on the part of the engraver. [We here repeat (*fig.*



40.) the illustration published in VI. 230., and state that we happen to know that it had been delineated from a dead and dried specimen.] My specimen is full 3 in. long, which, I believe, is something longer than those from Cornwall. [*Fig. 40.* is, Mr. Yarrell has stated in VI. 230., "the exact size of the specimen, and measures 2 in. 4 lines in length."] Colour greenish brown, mixed with yellow, somewhat transparent, like a prawn.

The four thoracic segments have on each side an oblate depression close to the recurved margin. The abdominal segments have two depressions on each side, divided by a ridge: these become spinous on the fifth segment. In the penultimate, the marginal line, or ridge, unites with the inter-medial, curves over the base of the processes, and forms the lower of the two *lateral spines* of that segment. There are also two dorsal spines, making the number six on this segment. It is in *this segment* [in *fig. 40.*, and in the description in VI. 231., it is represented to be from the caudal one] that the articulated processes *take their origin*, which form, with the caudal case, the fan-like termination of the bodies of the crustaceans of the order Macroúra. The caudal case is terminated by six spines, and is serrated in the spaces intervening these, and is surmounted by a single dorsal ridge ending abruptly on the upper side; this ridge has a slight indenture near the base, observable in all the species of this family. *b, c,* in *fig. 39.*, represent the anterior arms, grooved on one side,

so as to receive the next adjoining part: much in the same manner as the blade of a clasp knife is received into the handle. The pectinated joint is inserted into the first groove on the inside, and seems protected by a finely serrated edge on the outer side of the arm. In this groove each spine [of the pectinated joint] has a separate cavity to receive it; and when it is closed, the animal elevates three movable spines, which lie on the inner edge of the second joint in front, which in some measure supply the place of the closed hand, and are used as hooks or fingers. In *d*, in *fig. 39.*, are shown the under side of the caudal case, and penultimate segment with its lateral processes, strongly spined and ciliated, which together form the fan-like termination of the bodies of the crustaceans of the order Macroúra. The exterior spines on the processes are movable.

This *Squilla* I kept alive in a basin of sea water for two days; during which time I had a fair opportunity of observing its activity and peculiar habits. It sported about, and, after a first approach, exhibited a boldness rather unexpected. When first alarmed, it sprang backwards with great velocity; after which it placed itself in a menacing attitude, which would rather have excited the fear of exposing the hand to it. The prominent appearance of the eyes, their brilliancy and attentive watching, the feeling power of the long antennæ, evinced quick apprehension and instinct. I brought a silver teaspoon near them, which was struck out of my hand with a suddenness and force comparable to an electric shock: this blow was effected by the large arms, which were closed, and projected in an instant with the quickness of lightning. An apparent anxiety to keep the head and claws in front made me suspect that the animal lodges its hinder part in holes or recesses, from which it can strike at its prey or other passing objects. The attitude represented in the figure (*fig. 39.*) was maintained during my observations; and I did not see any inclination to close its tail in a more compacted form.

In 1820, I mentioned the existence of this genus on our coast to M. Latreille; who remarked, *en passant*, “Oui, je les ai vus sur nos côtes:” but I suspect that this celebrated naturalist alluded to the Mediterranean coast, as I have not heard of their appearance on the Atlantic side of France.

I doubt not that that described by W. Yarrell, Esq., VI., 230., from Cornwall, will prove, on examination, to be the same as mine; although the caudal case and spines, the shape of the processes, and the want of feelers in the exterior antennæ, denote some differences. The publication of this notice may lead to clearing up the doubt. — *Guernsey, May, 1835.*

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