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IV. *Some Account of the Crustacea of the Coasts of South America, with Descriptions of new Genera and Species: founded principally on the Collections obtained by Mr. Cuming and Mr. Miller.* By THOMAS BELL, Esq., F.R.S., L.S., G.S., & Z.S.

Communicated November 10, 1835.

THE rich acquisitions which have accrued to science from the indefatigable exertions of Mr. Cuming have already furnished matter for numerous communications to the Zoological Society, which have hitherto been principally devoted to the description of new species of *Mollusca*, or to the anatomical structure of animals of the same great group. The collection of *Crustacea* procured by the same gentleman, amounting to about one hundred and fifty species, promised to afford many new forms; and it was at first my intention to content myself with the description of such new genera and species as were contained in that collection. Finding, however, that in some particular genera the new species were either so numerous, or so interesting and important in their characters, as to throw an entirely new light upon the character of the groups to which they belonged, and having these means of information enlarged by the kindness of my friend Mr. Miller, who has, with his usual liberality, presented me with the whole of a small collection made by him principally on the coast of Brazil, I have been induced to extend my original plan, by embodying an account of the whole of the species collected by these gentlemen; and offering, in a few instances, monographs of such genera as require an entirely new arrangement, or new distinctive characters, in consequence of these acquisitions. In furtherance of this object I have already communicated to the Zoological Society, a monograph of the restricted genus *Cancer*, enriched by no less than three new and highly interesting species<sup>1</sup>; and I now proceed to offer the further detail of the contents of these collections in a systematic form, commencing with the *Oxyrhynchi*.

The arrangement which I have adopted is generally that of Dr. Milne Edwards, whose work on the natural history of *Crustacea* is not only by far the most complete that has ever appeared, but offers a classification which, though not free from some inconsiderable objections, yet, as being founded upon structural rather than mere formal characters, must be allowed to constitute the nearest approach hitherto made to a natural arrangement.

<sup>1</sup> Trans. Zool. Soc., vol. 1., p. 335.

Classis CRUSTACEA.

Subclassis DECAPODA.

Ordo BRACHYURA.

Tribus OXYRHYNCHI.

Familia LEPTOPODIADÆ, *Bell.*

Genus LEPTOPODIA, *Leach.*

LEPTOPODIA SAGITTARIA, *Leach.*

Mus. Soc. Zool., *Bell.*

Found by Mr. Cuming at Valparaiso.

Genus EURYPODIUS, *Guér.*

EURYPODIUS LATREILLII, *Guér.*

Mus. Soc. Zool., *Bell.*

Found at Valparaiso by Mr. Cuming, and at Rio Janeiro by Mr. Miller.

Those procured from the latter locality were more than twice as large as those from the former place.

Familia MAIADÆ (MAIENS, *Edw.*).

Genus MICRORHYNCHUS.

*Testa* subtriangularis, posticè rotundata, anticè rostro brevissimo terminata.

*Oculi* pedunculo elongato multò crassiores, retractiles.

*Orbita* suprâ unifissa, extrorsùm unidentata.

*Antennæ exteriores* ad latera rostri insertæ, articulo basilari rostro paullò brevior.

*Antennæ interiores* in fossulâ integrâ, anticè apertâ, et ad apicem rostri ferè attinente, locatæ.

*Pedipalpi externi* caulis interni articulo secundo cordiformi, anticè emarginato.

*Pedes antichi* MARIS corpore vix longiores, reliquis multo crassiores, digitis arcuatis ;

FÆMINÆ minimi : *pedes octo posteriores* subconsimiles, corpore ferè duplò longiores, unguibus leviter curvis.

*Abdomen* MARIS 7- FÆMINÆ 5-articulatum (hujus articulis tribus ultimis conjunctis).

The genus thus characterized agrees in several remarkable and important relations with *Camposcia* : a comparison, however, of its structure with the essential characters of the latter genus, will warrant the step I have taken in forming a new genus for the two beautiful and very peculiar species about to be described, especially as they both agree in all the most striking and obvious characters in which each of them differs from *Camposcia*. The exact situation of the present genus it is perhaps not easy to ascertain.

From the characters of the feet, and the form of the body, as well as some other characters, it might probably be placed between *Camposcia* and *Inachus*, without any considerable violation of its affinities. There are, however, some indications about the structure of the external pedipalps, and the form of the *abdomen*, especially of the female, which would seem to intimate some not very obscure relations to a group remote from those genera.

## MICRORHYNCHUS GIBBOSUS.

## Tab. VIII. Fig. 1.

*Micr. testá gibbosá, rostro bifido.*

*Hab.* ad Insulas Gallapagos dictas.

♂ Mus. Soc. Zool.

The carapax is broadly pyriform, gibbous, rounded; the regions elevated, and separated by rather deep furrows; the surface covered, particularly on each branchial region, with numerous distinct rounded tubercles resembling very minute pearls. The *rostrum* is very small and bifid. The orbits are wide, and have a hollow at the outer side for the lodgment of the eyes when at rest, though not deep enough to conceal them entirely. A small fissure divides the upper margin of the orbit from the *rostrum*, and another externally from the tooth of its outer angle. The eyes are larger than their peduncles.

The external *antennæ* are half as long as the body, the basilar joint as long as the *rostrum*, with a tooth at the outer angle. The internal *antennæ* are lodged in a single cavity, open in front, bounded above by the *rostrum*, and on each side by the basilar joint of the external *antennæ*. The pedipalps resemble those of *Camposcia*, excepting that the second joint of the inner footstalk is more heart-shaped, and deeply notched for the attachment of the moveable palp, which is long and greatly developed.

The *abdomen* of the male (the only sex yet observed) has seven joints, each of which has an elevation in the centre: the first, which is wholly apparent when the animal is viewed from above, is somewhat quadrate, with a small tubercular tooth in the centre; the second very short; the third much broader than the rest, and the remainder abruptly narrower.

The first pair of legs are thicker than, but not much more than half as long as, the others; the surface granulated; the hand rounded, and terminated by arched fingers which meet only at the *apex*, where they are denticulated. The four posterior pairs of legs are on the average nearly twice the length of the body, diminishing in the order 3 . 4 . 2 . 5. They are cylindrical and hairy; and the nails are long, slender, and but slightly arched.

The general colour of the specimen is yellowish white.

Length of the carapax 6 lines; breadth 5 lines.

One specimen only, a male, was obtained by Mr. Cuming at the Gallapagos Islands, in sandy mud at six fathoms depth.

## MICRORHYNCHUS DEPRESSUS.

## Tab. VIII. Fig. 2.

*Micr. testá depressá, granulátá; rostro minuto, triangulari, integro.*

*Hab. cum Micr. gibboso, ad Insulas Gallapagos dictas.*

♀ Mus. Soc. Zool.

This very singular species differs greatly in general form and aspect, no less than in more minute detail, from the former. The carapax is much broader, suborbicular, very depressed, although the specimen is a female, and the regions, though sufficiently distinct, are but little elevated. The surface is covered with numerous minute granular elevations, with here and there a few larger ones. The orbits resemble those of *Micr. gibbosus*, excepting in being much larger, as are also the eyes. The *rostrum* is very small, triangular, and entire, the margins minutely granulated.

The tooth of the basilar joint of the external *antennæ* is incurved at the point. The internal *antennæ* resemble those of the former species, but their cell is still more open. The first joint of the inner footstalk of the external pedipalps is longitudinally channelled; the second joint cordiform, but less deeply notched than in *Micr. gibbosus*.

The sternal disc (in the female) is almost orbicular, and not nearly covered by the *abdomen*, which is five-jointed. The first joint is somewhat bell-shaped, with a long central tooth or spine projecting directly backwards; the second, third and fourth, extremely short; and the fifth, consisting of a perfect union of the last three joints, forms a flat orbicular disc, having a broad, depressed, longitudinal elevation.

The first pair of legs is, in this sex, extremely small; the arms much curved; the fingers very slightly arched, and minutely toothed towards the extremity. The remaining legs are similar to those of the former species.

Colour nearly white, but with a very slight pinkish tinge.

Length of the carapax 6 lines; breadth the same.

Of this species one specimen only, a female, was procured by Mr. Cuming with the former.

GENUS LIBINIA, *Leach.*

## LIBINIA ROSTRATA.

## Tab. VIII. Fig. 3.

*Lib. rostro producto, valido, bidentato, dentibus compressis, acutis, divergentibus.*

*Hab. ad oras Peruvix.*

♂ Mus. Soc. Zool.

The whole of the body and legs are covered with close short hair, the surface beneath the hair being minutely punctate. Carapax almost globose, the regions much elevated,

with numerous strong spines and tubercles, one longer than the rest standing out horizontally on each branchial region. Latero-anterior margin with three spines, and a fourth behind them which forms the commencement of a flattened ridge extending backwards to the posterior margin. Orbits with a strong spine over the inner *canthus*. *Rostrum* very prominent, flattened, terminating in two strong diverging teeth.

Exterior *antennæ* cylindrical, inserted at the side of the *rostrum*, and not at all concealed by it. The pedipalps similar to those of the other species of the genus.

The *abdomen* of the male formed of seven distinct joints, each elevated in the centre, so as to form a longitudinal *carina*. The divisions of the *sternum* very distinct.

The anterior pair of legs twice the length of the body; the arms furnished with numerous obtuse spines: the hands granulated, and without spines: the fingers touch each other only at the points, which are rather acute. The four posterior pairs of legs diminish regularly from the second to the fifth; they are wholly without spines, considerably thickened at the joints, and terminate in a strong curved nail.

The colour of the hair which covers the whole animal is a light brown; the body itself paler.

Length of the carapax, including the *rostrum*, 2 inches 8 lines; breadth 2 inches 3 lines.

A single male specimen only was found by Mr. Cuming on the Peruvian coast, in soft mud, at the depth of five fathoms.

This species differs from all others previously known in the genus, in a character which, unless a new genus were formed for its reception, requires the revision and alteration of the generic character as hitherto assigned to it. The *rostrum*, instead of being extremely small, and merely notched at the extremity, is broad, projecting, and terminates in two strong, diverging teeth. The other characters of the species, and its general habit and form, are, however, so essentially those of the genus *Libinia*, that I cannot but consider it as belonging to the same natural group.

#### GENUS RHODIA.

*Testa* pyriformis, in rostrum parvum, bidentatum anticè producta.

*Oculi* retractiles, globosi, pedunculo crassiores.

*Orbita* fissurâ magnâ, supernè apertâ.

*Antennæ interiores* in foveolis profundis, lunatis, anticè separatis receptæ.

*Antennæ exteriores* rostro duplò longiores, articulo basilari bidentato, reliquis cylindricis, ad rostri latera insertæ.

*Pedum par anticum* MARIS (immaturi) reliquis brevius; digitis minutissimè serratis: *paria quatuor posteriora* testâ longiora, à secundo ad quintum sensim paullò breviora.

*Abdomen* MARIS 7-articulatum. FŒMINÆ?

This genus is allied to *Herbstia*, from which, however, it differs remarkably in the structure of the anterior feet. The fingers in *Rhodia* meet throughout their whole length and the margins are minutely serrated: in *Herbstia* they meet only at their

points, and are furnished with rounded tubercles. In the present genus the anterior legs are shorter than the posterior, and very slender; in *Herbstia* they are much longer than the others and very robust. One species only is known of the genus, of which but a single specimen exists in the collection formed by Mr. Cuming.

RHODIA PYRIFORMIS.

Tab. IX. Fig. 1.

*Hab.* ad Insulas Gallapagos dictas.

♂. Mus. Soc. Zool.

Carapax pyriform, somewhat depressed, the regions slightly and evenly elevated: *rostrum* about as broad as it is long, small, consisting of two pointed teeth: lateral margin with four distant, minute teeth: posterior margin produced. Orbits large, with a triangular hiatus above, and a tooth at the outer and inner *canthus*. Eyes large, globose, fixed on very short peduncles, which are small at their junction with the eyes, but larger at their insertion into the orbit.

Internal *antennæ* lying in deep, circumscribed, longitudinal, somewhat lunulate cavities. External *antennæ* twice as long as the *rostrum*, the basilar joint broad, bidentate, the outer tooth being the shortest, and placed further back, at the inner *canthus* of the orbit. The pedipalps were so much injured in the specimen as not to admit of description.

*Abdomen* of the male seven-jointed, decreasing in breadth from the third joint to the last.

The anterior pair of feet rather thicker but shorter than the others; the arm and wrist hairy and beset with small spines; the hand hairy above, but without spines: the fingers are slender, and are in contact throughout their whole length, and the margin is very minutely serrated. The remaining feet are longer than the carapax, the second pair by nearly one third; the remainder diminishing gradually to the fifth. They are nearly cylindrical, hairy but without spines or tubercles, and terminate in a small, slightly curved claw.

The colour of the only specimen known is pink, the hairs brown; the legs are whitish with pink *annuli* or bands; but as the specimen is considerably bleached and injured, it is impossible to judge of the natural colour.

Length of the carapax 8 lines; breadth 6 lines.

A single male specimen only, probably immature, was procured by Mr. Cuming, at the depth of six fathoms, on coral sand. It had evidently been long dead.

Genus PELIA.

*Testa* pyriformis, rotundata, anticè rostro elongato, apice bifido, terminata.

*Orbita* suprà fornicata, externè unifissa, infrà emarginata.



*Oculi* retractiles, globosi, pedunculo crassiores.

*Antennæ interiores* in basin rostri insertæ.

*Antennæ exteriores* rostro haud multò longiores, articulo basilari longissimo, ad medium rostri attinente, extùs uni-denticulato; articulis secundo et tertio cylindricis; reliquis setaceis gracilibus.

*Pedipalpi externi* caule externo semifusiformi; caulis interni articulo primo elongato-rhomboideo, secundo trapezoideo, margine integro.

*Pedum par anticum* reliquis paullò crassius, secundo brevius; digitis apicem versus serrulatis, digito immobili ad medium excavato, tuberculum unicum digiti mobilis recipiente: *paria quatuor posteriora* gracilia, compressa, pilosa.

*Abdomen* MARIS 7-articulatum.

Amongst the *Crustacea* brought by Mr. Cuming from the western coast of South America, there occurs a single specimen of a very small species, which, with some characters allied to those of *Herbstia*, and some by which it is related to *Pisa*, offers certain peculiarities which appear to me to establish it as the type of a distinct genus. From the foregoing account of its characters, the relations which I have mentioned will probably be recognised; but the structure of the anterior feet, of the exterior *antennæ*, and of the pedipalps, is very peculiar. The fingers of the first pair of feet, when closed, are in contact throughout their whole length; the apical half of each is minutely serrated, and there is a single tubercle about the middle of the immoveable finger, received into a corresponding cavity in the moveable one. This is a combination of the serrated with the tuberculated form of finger, which at least is not common; and the accurate closing of a broad tubercle into a corresponding excavation in the other finger, is a structure which I have not observed in any other species. The extension of the basilar joint of the exterior *antennæ* so far beyond the line of the orbit as to be exposed above through nearly its whole length, is also a peculiarity which I believe belongs to no other genus of this section. These characters, with the peculiar form of the external pedipalps, appear to constitute the essential data for the foundation of a new genus.

PELIA PULCHELLA.

Tab. IX. Fig. 2.

*Hab.* ad Insulas Gallapagos dictas.

♂ Mus. Soc. Zool.

Carapax pyriform, gibbous, rounded, polished, somewhat hairy: the regions elevated, particularly the gastric and cardiac, the latter of which forms a rounded tubercle: lateral margin entire. *Rostrum* straight, much produced, nearly half as long as the rest of the carapax, bifid at the extremity, with a slight groove continued backwards from the bifurcation.

Internal *antennæ* inserted at the base of the *rostrum*: external *antennæ* placed at the

sides of the *rostrum*; the basilar joint reaching to about half its length, almost wholly exposed above, slightly tapering towards its extremity, where there is a small external tooth; the moveable portion setaceous, extending a little beyond the *apex* of the *rostrum*, the second and third joints cylindrical, and much larger than the terminal portion. External pedipalps with the external footstalks semifusiform; the first joint of the internal footstalk elongate, rhomboid; the second joint of an irregular four-sided figure, the margins entire.

*Abdomen* in the male seven-jointed, the joints becoming gradually smaller from the third to the last.

Anterior feet longer than the body; the arm three-sided, having a toothed *carina* above, and two *carinae* beneath, the outer of which is minutely serrated; the hands slightly compressed, smooth: the fingers, when closed, in contact throughout their whole length, the half towards the *apex* being serrated, and a tubercle of the immovable finger received into a corresponding excavation in the moveable one. The remaining feet compressed, carinated and hairy above, the second pair longer than the first, the rest becoming gradually shorter.

Length 4 lines; breadth  $2\frac{1}{2}$  lines.

A single male specimen was taken by Mr. Cuming from sandy mud, at the depth of six fathoms.

#### Genus HERBSTIA, *Edw.*

The genus *Herbstia* was formed by Dr. Milne Edwards on the characters offered by *Cancer condyliatus* of Herbst, and named in honour of that indefatigable carcinologist. That species, which is a native of the Mediterranean, has been successively placed in the genera *Inachus*, *Maia* and *Mithrax*, by Fabricius, Latreille, and M. Risso, and very properly separated from these by the acute naturalist above mentioned. The correctness of this separation receives an interesting confirmation in the discovery of the present species, which may, with peculiar propriety, be dedicated to him who first distinguished the characters of the genus.

#### HERBSTIA EDWARDSII.

##### Tab. IX. Fig. 3.

*Herbst. pedum pare antico inermi.*

*Hab.* ad Insulas Gallapagos dictas.

♂ Mus. Soc. Zool.—♀ Mus. Bell.

The carapax is depressed, much rounded, the post-frontal portion being nearly of a circular form, but rather narrowed forwards. The surface is minutely punctated. The gastric region has four small tubercles placed transversely, and there are several similar ones on other parts, particularly on the branchial regions and the lateral margin. The front is moderately prominent, the *rostrum* very small, bifid, the horns being pointed

and a little flattened, as in *Herbst. condyliata*. The orbits are large, and furnished with a tooth at the upper and inner angle, another at the outer angle, and a third, small and rounded, beneath; between which and the basilar joint of the external *antennæ* is a considerable hiatus. The eyes are scarcely larger than their peduncles, which are of moderate length.

The external *antennæ* have the basilar joint broad and prominent, with a large tooth anteriorly, and a smaller one at the base of the latter: the second and third joints cylindrical, the latter extending a little beyond the *rostrum*. Internal *antennæ* lodged in a circular hollow, having a raised margin, and a tooth in front, directed a little backwards and downwards. External pedipalps with the second joint of the inner footstalk cordate.

*Abdomen* of the male formed of seven joints of nearly equal length, becoming gradually narrower, and the terminal one rounded. The *abdomen* of the female nearly circular. First pair of feet in the male more than twice as long as the post-frontal portion of the carapax, rather robust, and nearly cylindrical; the hand rather larger than the other joints, perfectly smooth; the claws rounded and minutely denticulated at the extremity, slightly hollowed, and having one large strong tooth on the finger and another on the thumb. The remaining pairs decreasing in length from the second to the fifth; the third joint much larger than the others, with a row of small spines above, and sparsely hairy; the nails very slightly curved.

The general colour above is a greyish brown; beneath yellowish; the anterior legs plumbeous, the others somewhat flesh-coloured.

Length of the carapax 7 lines; breadth  $6\frac{1}{2}$  lines.

This species differs from *Herbst. condyliata*, which in most of its characters it much resembles, in its diminutive size, the greater proportional length of the anterior feet, and the absence of tubercles on the hands.

A male and a female specimen were taken by Mr. Cuming at the Gallapagos Islands, in coral sand, at the depth of six fathoms.

#### GENUS THÖE.

*Testa* subtriangularis, depressa, horizontalis, rostro minimo, apice leviter fisso terminata.

*Orbita* edentata, fissuris tribus inconspicuis.

*Oculi* subretractiles, globosi, pedunculo brevi.

*Antennæ interiores* in fossulâ anticè tantùm divisâ insertæ.

*Antennæ exteriores* ad latera rostri insertæ, rostro triplò longiores, extrorsùm pilosæ, articulo basilari latissimo, anticè et posticè producto.

*Pedipalpi externi* introrsùm ciliati, caulis interni articulo primo subrhomboideo, secundo rotundato margine integro.

*Pedes antici* MARIS reliquis longiores, brachiis suprâ et externè serie cellularum erosis;

manibus lævibus, digitis arcuatis, ad apicem tantùm contingentibus: *posteriores* depressi, lateribus pilosis.

*Abdomen* in utroque sexu 7-articulatum.

This genus, founded on a single known species, approaches *Herbstia* in the character of the *antennæ*, the hands, the claws, and some other parts; but it differs materially from that genus in the form of the *rostrum*, the depressed and horizontal form of the body, and from every other genus in the remarkable excavations on the upper and outer sides of the arm. Its natural situation in the system is probably between *Herbstia* and *Hyas*. The genera, however, constituting the *Maiens* of Dr. Milne Edwards, require a thorough examination, in order to ascertain the real value of the characters upon which generic distinctions have hitherto been founded.

#### THOE EROSA.

Tab. IX. Fig. 4.

*Hab.* ad Insulas Gallapagos dictas.

Mus. Soc. Zool., Bell.

Carapax somewhat triangular, longer than it is broad, rounded behind, depressed, horizontal, covered with low tuberosities; the lateral margin without teeth, perpendicular. *Rostrum* minute, tapering to the point, which is slightly divided. Orbits nearly round, without teeth, with three small fissures, one above the inner *canthus*, another at the outer angle, and the third beneath. Eyes subretractile, globose, smaller than the base of the peduncle.

Internal *antennæ* lodged in a *fossa*, which is anteriorly divided by a tooth projecting backwards and longitudinally excavated. External *antennæ* with the basilar joint very broad, produced forwards and backwards, the moveable portion three times as long as the *rostrum*, ciliated on the inner side. External pedipalps with the outer footstalk expanded at the outer margin; first joint of the inner footstalk nearly rhomboidal, with entire margins, ciliated on the inner margin; second joint without any emargination for the insertion of the palp.

*Abdomen* in both sexes seven-jointed. In the male, the third to the sixth joints are scarcely broader than the first and second.

Anterior legs in the male longer and much more robust than the remainder. The arm with a series of quadrilateral excavations on the upper and outer surfaces diminishing backwards. Hands smooth, carinated beneath, the fingers meeting only at the point, not excavated or serrated, but with a single tubercle near the middle of the moveable finger: remaining feet flattened above, longitudinally rugose, the sides furnished with rather long hairs; beneath rounded and smooth.

Colour light yellowish brown above, paler beneath.

Length 6 lines; breadth 5 lines.

Taken by Mr. Cuming at the Gallapagos Islands in sandy mud at the depth of seven fathoms.

Genus HYAS, *Edu.*

HYAS EDWARDSII.

Tab. IX. Fig. 5.

*Hy. testá anticè angustatá, post orbitas haud coarctatá, pilosá; orbitalium dente interno mediocri; abdominis (maris) articulo penultimo utrinque unidenticulato.*

*Hab.* apud Valparaiso et ad Insulas Gallapagos dictas.

Mus. Soc. Zool., Bell.

Carapax pyriform, elevated, posteriorly rounded, anteriorly narrow, but without a distinct contraction behind the orbits; covered with brown hair. *Rostrum* formed of two elongated compressed teeth slightly converging at the *apex*. Orbits spacious, without spines, having a triangular tooth of moderate size at the outer *canthus*. Eyes globular, larger than their peduncles.

Interior *antennæ* lodged in a *fossa* at the base of the *rostrum*, which is open anteriorly, and undivided. Exterior *antennæ* longer than the *rostrum*, very hairy, the basilar joint with raised margins; the second and third less expanded than in the other species of the genus. The pedipalps offer no peculiarity.

*Abdomen* of the male with the penultimate joint with a small tooth on each side.

Anterior legs in the adult male rounded, the hand much thicker than the arm, and terminated by curved fingers, which touch each other only at the *apex*, which is serrated; moveable finger with a single tubercle near the base. In the female the hands are scarcely larger than the arms, the fingers are less curved, and there is no tubercle. The remaining legs are somewhat flattened above, obtusely carinated beneath, and very hairy: the second pair is the longest, and they diminish regularly to the fifth.

Colour reddish brown; the hands red.

In size the specimens from the two localities differ exceedingly. There are adult males from the Gallapagos Islands, of which the length is 6 lines and the breadth 4 lines. From Valparaiso I have examined a specimen of an immature male, as appears by the want of development of the anterior feet, the length of which is 9 lines and the breadth 7 lines. This remarkable discrepancy led me at first to expect that I should discover some specific differences; but the most careful examination has convinced me that they are all of one species.

## Genus PISA, Leach.

## PISA SPINIPES.

## Tab. IX. Fig. 6.

*Pisa testá ovatá; dente articuli basilaris antennæ exterioris dente superorbitali longiore; margine antico-laterali et pedibus omnibus spinosis.*

*Hab.* ad Insulas Gallapagos dictas, et apud Sanctam Elenam.

♂ Mus. Soc. Zool.—♀ Mus. Bell.

This is an elegant little species, bearing considerable resemblance to young specimens of *Pisa tetraodon*, Leach, but differing in many essential particulars from this and every other known species.

The carapax is depressed and granulated: the lateral margin on each side beset with about seven or eight sharp spines, which are much smaller and shorter in the female than in the male. The former sex has a strongly-marked granulated line over the posterior margin, which is much less conspicuous in the male; a circumstance which I have observed in many species, not only of this but of several other genera. The tooth above the orbit, unlike many other species, is shorter than that of the basilar joint of the exterior *antennæ*. The horns of the *rostrum* are separated throughout their length, and are somewhat divergent.

The *abdomen* of the male specimen was lost: that of the female is as broad as it is long, and has a low longitudinal *carina*.

The feet are all furnished with small spines, particularly on the third joint; the anterior pair in the female scarcely larger than the rest: those of the male specimen were lost.

This species differs from all the others, excepting *Pisa Styx*, Latr., in having numerous spines on the legs.

Length 8 lines; breadth 5 lines.

The male specimen was taken by Mr. Cuming at the Gallapagos, at the depth of sixteen fathoms; the female at St. Elena at six fathoms: both on sandy mud.

## PISA ACULEATA.

## Tab. IX. Fig. 7.

*Pisa testá triangulari, dente articuli basilaris antennæ exterioris dente superorbitali brevioris; margine antico-laterali inermi, regione branchiali spinis quatuor armatá; pedibus supra spinosis.*

*Hab.* ad Insulas Gallapagos dictas.

Mus. Soc. Zool., Bell.

Carapax triangular, nearly as broad as it is long: the latero-anterior margin without

spines, but furnished with three subimbricated processes, directed forwards. Branchial regions with about four small spines, of which two are placed near the lateral margin on each side; the rest of the body with small scattered tubercles. *Rostrum* with rather long, diverging, acute teeth. The orbits with a very short tooth over the inner *canthus*.

Exterior *antennæ* with the tooth of the basilar joint very long, acute, slender, and directed forwards and a little outwards. The pedipalps offer no peculiarity.

The penultimate joint of the *abdomen* in the male has a small tooth on each side.

Anterior legs of moderate size and length, the fingers but little curved; the arm with a few short, obtuse, and compressed spines: the remaining feet hairy and spinous above, the nails curved and very acute.

Colour fuscous.

Length 8 lines; breadth 7 lines.

Taken by Mr. Cuming on sandy mud at the Gallapagos Islands, at the depth of seven fathoms.

This and the preceding species belong to the third section of the genus, according to Dr. Edwards's arrangement, with *Pisa Styx*, Latr. They are characterized by the greater length of the basilar tooth of the *antennæ*, compared with that of the orbit.

#### Genus MITHRAX, *Leach*.

##### MITHRAX ROSTRATUS.

##### Tab. X. Fig. 1.

*Mithr. testá spinosá, rostro elongato, bidentato, dentibus divaricatis, ad apicem incurvis, terminatá; pedibus spinosis; manibus lævibus.*

*Hab.*

♂. Mus. Bell.—♀. Mus. Soc. Zool.

Carapax rounded, anteriorly produced, moderately elevated, the regions distinct; surface granulated, tuberculous, and with the margins and outer part of the branchial regions spinous. *Rostrum* much longer than broad, consisting of two strong diverging teeth, the *apices* of which are a little inclined. Orbit nearly circular, surrounded with warty tubercles. Eyes globular, smaller than the base of the peduncles.

Interior *antennæ* lodged in a *fossa*, which is divided only at the anterior half by a projecting tooth-like process. Exterior *antennæ* rather longer than the *rostrum*; the basilar joint with a small tuberculated tooth at the outer edge; second and third joints rather broad, and furnished with long hairs on each side; fourth joint cylindrical and elongated. Pedipalps as in most other species of the genus.

*Abdomen* of the male slightly and obtusely carinated; of the female nearly orbicular.

Anterior feet of the male moderately robust, of the female rather slender; the moveable finger in the former sex with a tubercle near the base; hand smooth, the other joints spinous and tuberculated. Remaining feet spinous and tuberculated, excepting on the last two joints, which, like the others, are hairy. The nails in the male are fur-

nished with a series of small denticulations beneath, as in the genus *Pisa*; the female is without them.

Colour lightish brown; the hands mottled.

Length of the carapax 2 inches 2 lines, including the *rostrum* which is 4 lines long and 2 broad; breadth of the carapax 2 inches nearly.

Two specimens, a male and a female, were obtained by Mr. Cuming.

Notwithstanding the length and spinous form of the *rostrum*, the more elongated form of the carapax, and the moderately developed character of the claws, I cannot but consider this species as belonging to the genus *Mithrax*, as all its essential characters correspond with that group. It may perhaps be considered as offering a step towards the genus *Pisa*, not only in the characters already mentioned, but also in the denticulations on the under surface of the nails in the male; a character which, although considered as essentially distinguishing the last-named genus, can only be ranked as of very secondary importance, as in the present species it constitutes but a sexual distinction, the male possessing it, and the female being wholly destitute of it.

#### MITHRAX URSUS.

Tab. X. Figg. 2, 3.

*Mithr. testá granulátá, verrucoso-tuberculátá, rostri dentibus obtusis, granulosis; tuberculis octo pone rostrum, et sex circum orbitas; manibus lævibus.*

*Junior.* Cancer Ursus, *Herbst*, I. p. 217, t. xiv. f. 86.

*Hab.* ad Insulas Gallapagos dictas.

Mus. Soc. Zool., Bell.

Carapax in the young specimens somewhat pyriform, in the adult nearly orbicular, granulated, and with numerous warty tubercles, of which there are four immediately behind the *rostrum*, forming a square, and four a little behind them similarly disposed. The latero-anterior margin has three or four strong prominent tubercles each with one or two smaller ones at its base. *Rostrum* projecting, formed of two strong rounded teeth, each terminated by a warty tubercle. Orbits with six similar tubercles, of which that over the inner *canthus* is the most prominent. Eyes globose, smaller than the base of the peduncle.

The exterior *antennæ* hairy in the younger specimens; the basilar joint with a large tubercular tooth at its outer angle, the *apex* of which, like all the other tubercles in this species, is granulated or warty. The interior *antennæ*, the external pedipalps, and the *abdomen* do not materially differ from those parts in the other species of the genus.

The anterior pair of feet are, in the female, a little longer and more robust than the others; the arm and wrist covered with prominent tubercles; the hand smooth, the fingers in this sex, and in young males, serrated at the margin, but without a tubercle. (It is probable, that in the adult male the hands are more robust and the fingers fur-



nished with a strong tubercle as in *Mithr. verrucosus*, Edw.) The remaining feet covered with similar tubercles above, and a few very small ones beneath. The nails much hooked and acute.

In the young state, the carapax, the legs, and the *antennæ* are covered with a thick coat of hair, and the tubercles are small and sharp, so that the margin of the shell, the *rostrum*, the orbits, and the legs, may rather be described as spinous than tuberculated.

Colour of the adult a deep purplish brown ; of the young, light brown.

Length of the carapax in the adult female 2 inches ; breadth 2 inches.

Two adult females and several young specimens of both sexes were obtained by Mr. Cuming from sandy mud at the Gallapagos Islands at the depth of six fathoms.

The *Cancer Ursus* of Herbst has not, I believe, been observed since his figure was published. Dr. Edwards suggests that it may be a species of *Paramithrax*, and the erroneous drawing of the anterior feet in Herbst's figure might authorize such a supposition. The examination, however, of several specimens of different ages has enabled me to ascertain that it is a true *Mithrax*, and that the characters of the genus are so imperfectly developed in the young state, that not only in this, but in many other instances such a mistake might readily occur. It was from a specimen about half grown that Herbst's figure was taken, and I now offer a figure of a still younger individual, and one of an adult female, with the assurance that the intermediate states enable me confidently to consider them as the same species. The little spines in the young are everywhere identical with the tubercles in the adult.

The observations which I have here ventured to make, show the importance of examining *Crustacea* in various degrees of development, in order to ascertain the specific and even the generic characters. The parts which differ most in the two sexes, are generally found to be those which undergo the greatest changes by age. And in those genera which, like the present, exhibit a peculiar structure in the hands,—organs which offer the greatest variation in both these circumstances,—it is peculiarly necessary that the structure of these parts in both sexes and at various ages should, if possible, be described.

Herbst gives his own collection as the place where the specimen he figured was deposited, and states the South Sea as its habitat.

#### MITHRAX NODOSUS.

Tab. XI. Fig. 1.

*Mithr. testâ trigono-rotundatâ ; margine tuberculis tribus fortibus, rotundatis, et dente unico ; rostro brevi ; pedipalpis articulo secundo caulis externi irregularitèr lunulato ; manibus lævibus, suprâ carinatis ; brachiis et carpis tuberculatis ; pedibus posterioribus suprâ spinosissimis et pilosis.*

*Hab.* ad Insulas Gallapagos dictas.

Mus. Soc. Zool., Bell.

Carapax somewhat depressed, rounded, slightly triangular, broader than it is long; the surface with broad elevations, which are highest over the gastric region; the latero-anterior margin with three strong rounded tubercles, and a small spine behind them. *Rostrum* very short, rounded and bifid. Orbits with a small round tubercle over the inner *canthus*, and a small fissure above.

Exterior *antennæ* with the basilar joint as prominent as the orbital tubercle, but rather less so than the *rostrum*; second joint somewhat heart-shaped, furnished with a tuft of rather long hair on the inner edge, as is also the remaining portion of the *antennæ*. Pedipalps with the second joint of the inner footstalk of an irregularly semi-lunar form, much broader than it is long, not cordate as in the other species of the genus.

*Abdomen* with the seven joints very distinct.

Anterior legs above covered with tubercles; the hand quite smooth, with a *carina* on the upper edge. The fingers are much curved, and in contact only at the *apex*, which is scarcely denticulated; the moveable one has a strong tooth near its base. The posterior legs are covered on the upper surface with hairs and numerous spines, many of which are furnished with two or three distinct hairs at the point.

The colour above is brown; that of the hands dark plumbeous: it is paler beneath.

Length of the carapax 1 inch; breadth 1 inch 3 lines.

Found by Mr. Cuming in considerable abundance under stones at low water.

This species belongs to the third section of the genus, as divided by Dr. Edwards: his *Mithraces deprimés*.

#### MITHRAX DENTICULATUS.

Tab. XI. Fig. 2.

*Mithr. testá profundè sculptá; margine laterali dentibus quatuor obtusiusculis; pedipalpis articulo secundo caulis interni cordato; manibus lævibus; pedibus posterioribus pilosis, spinosissimis.*

*Hab.* ad Insulas Gallapagos dictas, sub lapidibus.

Mus. Soc. Zool., Bell.

A small species resembling in most of its characters the former one, though differing sufficiently to be distinguished from it at the first glance. The markings on the carapax, though similar in situation, are much more distinctly and deeply incised; the teeth on the lateral margin, though rather obtuse, have not the rounded, tubercular character of the same appendages in *Mithr. nodosus*. The arms and the feet also are more sharply spined. But the character which at once distinguishes them, on a closer inspection, is the form of the second joint of the inner footstalk of the external pedipalp, which in *Mithr. nodosus* is crescent-shaped, and much broader than it is long; and in the present species is cordate, and as long as it is broad.

Colour plumbeous, passing into fuscous.

Length 5 lines ; breadth 6 lines.

Found by Mr. Cuming in considerable numbers with the former.

MITHRAX PYGMÆUS.

Tab. XI. Fig. 3.

*Mithr. testâ depressâ, rotundatâ, lævi ; fronte obtusissimo lato, obsoletè bilobato ; pedibus anticis corpore duplò ferè longioribus ; manibus lævibus.*

*Hab.* ad Panama, Americæ Centralis.

Mus. Soc. Zool., Bell.

Carapax depressed, broad across the branchial regions, contracted forwards, and obtuse in front ; the regions rather distinct ; the surface smooth ; the lateral margin with a few small teeth or spines. Front very obtuse, obscurely bilobed, laminated. Orbits with a minute tooth over the inner *canthus*, and two externally, much excavated beneath. Eyes large, prominent, globular.

External *antennæ* with the basilar joint very broad, anteriorly denticulated, the moveable portion cylindrical, half as long as the body. External pedipalps with the first joint of the inner footstalk nearly quadrate, the second emarginate at the anterior and inner angle.

*Abdomen* of the male seven-jointed, nearly triangular.

Anterior feet nearly twice as long as the carapax ; the arm and wrist with a few minute tubercles ; the hand robust, smooth ; the moveable finger with a small tubercle near the base, the *apex* excavated and serrated at the margin. The remaining feet slender, shorter than the first pair ; having a few tubercles on the first three joints, the remainder smooth.

Colour pale brownish above, reddish beneath ; hands a red brown.

Length nearly 3 lines, breadth the same.

Of this little species Mr. Cuming procured two male specimens at Panama, on sand, at the depth of ten fathoms.

The characters offered by this pygmy *Crab*, are such as to occasion some hesitation whether to consider it as a species of *Mithrax*, or as the type of a new genus. It has certainly many important relations to the genus mentioned, and I have preferred placing it therein to increasing the number of genera upon what may appear to be too slender foundations. The characters in which it differs from the other species, are the smoothness of the carapax and arms, the slenderness and extraordinary length of the anterior feet, the laminated and obtuse form of the *rostrum*, and the length of the external *antennæ*.

GENUS OTHONIA.

*Testa* latè ovata, rostro parvo, brevi, bifido, haud deflexo, terminata.

*Oculi* pedunculo elongato, cylindrico, subcurvo haud crassiores.

*Antennæ interiores* minutissimæ.

*Antennæ exteriores* breviusculæ, articulo basilari lamelloso, extûs dente triangulari armato; secundo compresso cordato, anticè emarginato, et tertio multò majore; reliquis parvis cylindricis.

*Pedipalpi externi* caulis interni articulo secundo triangulari, extrorsum subproducto.

*Pedes* mediocres. *Par anticum* MARIS . . . ? FEMINÆ reliquis minus, digitis minutè serrulatis, digito mobili longiore: *paria quatuor posteriora* ordine 2. 3. 4. 5. gradatim breviora; digitis subtùs minutissimè denticulatis.

*Abdomen* MARIS . . . ? FEMINÆ 7-articulatum.

The relation of this genus to *Micippa*, Leach, and *Paramicippa*, Edw., is very striking. It agrees with them in most of its essential characters, as well as in its general aspect; but is readily distinguished from them by the form of the *rostrum*, which in those genera is large and deflexed, whilst in *Othonia* it is extremely small and horizontal. There are two species in the collection brought from South America by Mr. Cuming, of each of which two female specimens only were found: the characters of the anterior feet and of the *abdomen* must therefore at present be confined to those of that sex.

#### OTHONIA SEX-DENTATA.

Tab. XII. Fig. 1.

*Oth. testæ margine laterali dentibus sex triangularibus acutis.*

*Pitho sexdentata*, Bell, in *Proc. Zool. Soc., Part iii. p. 172.*

*Hab.* ad Insulas Gallapagos dictas.

♀ *Mus. Soc. Zool., Bell.*

Carapax broadly oval, moderately elevated, the surface rough, granulated, and slightly hairy; the lateral margin with six flattened triangular, falciform teeth, the points acute and directed forwards; a ridge of prominent granulations over the posterior margin. *Rostrum* very small, bifid, with a small *sulcus* continued backwards from the division. Orbits with a broad triangular fissure above, the tooth on each side flattened and triangular, the outer one the larger. Eyes not larger than the peduncles, which are elongated, slender, projecting forwards and slightly curved inwards.

Internal *antennæ* extremely minute, and placed far back behind the *rostrum*. External *antennæ* hairy, short, the basilar joint broad and flat, having a triangular external tooth, which extends forwards as far as that of the orbit; second joint flat, cordate, anteriorly emarginate for the insertion of the third joint, which is also compressed, and much smaller than the previous one: the remaining joints are small and cylindrical. External pedipalps with the outer footstalk gradually acuminate: the inner footstalk with the first joint rather broad and rhomboidal; the second triangular with the anterior angles somewhat produced.

*Abdomen* (in the immature female) oval, consisting of seven nearly equal articulations,

obtusely carinated along the centre; each of them delicately ciliated at its anterior margin.

Feet of moderate length: the anterior pair (in the female) considerably smaller than the rest, slender, slightly compressed, and smooth; hand with a small obtuse tooth above and one beneath, at the base; the fingers with the margins minutely serrated. The moveable finger longer than the other, and curved over its extremity. The remaining pairs of feet decreasing in length from the second to the fifth, depressed, and slightly hairy; the antepenultimate joint has a shallow *sulcus* on each side; the terminal joint is minutely toothed beneath.

Of the colour nothing can be said, as both the specimens preserved by Mr. Cuming were bleached.

Length 9 lines; breadth 8 lines.

Found by Mr. Cuming at the Gallapagos Islands in sandy mud, at the depth of six fathoms.

#### OTHONIA QUINQUE-DENTATA.

Tab. XII. Fig. 2.

*Oth. testæ margine laterali dentibus quinque triangularibus acutis armato.*

*Pitho quinquedentata*, Bell, in *Proc. Zool. Soc.*, part iii. p. 172.

*Hab.* cum præcedente, ad Insulas Gallapagos dictas.

♀ Mus. Soc. Zool., Bell.

This species resembles the former one in most of its characters. It differs, however, in the number of teeth on the lateral margin, and very considerably in size. The frontal portion of the carapax is more produced, and the surface more scantily granulated, and without spines. The two specimens of the former species are nearly an inch long, and are both evidently immature, as the *abdomen* is but very little developed. Those of the present species, which are very little more than half an inch in length, have the *abdomen* fully developed, being very prominent, and of a circular form.

The general colour is brown; the feet with alternate rings of reddish and brown.

Two female specimens were found by Mr. Cuming with the former.



#### GENUS TYCHE.

*Testa* oblonga, depressa, angulata, anticè declivis, fronte lato, rostro bidentato piloso terminata; rostri dentes compressi, obtusi, apicem versus internè emarginati.

*Orbita* suprà latissima, in dente prominenti complanato anticè producta, infrà carens.

*Oculi* pedunculo elongato minores.

*Antennæ interiores* in fossulâ ad basin rostri insertæ.

*Antennæ exteriores* rostro longiores, articulo basilari latiusculo, anticè angustiore; articulo tertio secundo abruptè minore; omnibus externè pilosis.

*Pepipalpi externi rugosi, caule exteriori subulato, caulis interioris articulo primo canaliculato, extus profundè emarginato; secundo securiformi, tridentato.*

*Pedes antici graciles, simplices, pari secundo breviores, digitis inermibus; posteriores cylindrici, unguibus acutis, curvis, complanatis terminati.*

*Abdomen* MARIS 7-articulatum. FÆMINÆ . . . ?

This genus offers in its general form and aspect, as well as in its more minute and important characters, several very remarkable peculiarities. The flattened body with its recurved and angular margin, the sloping direction and extraordinary size of the front, the laminated and extended form of the superior margin of the orbits, the absence of any inferior process of those parts, the eyes lengthened so as just to peep out beyond the extraordinary development of the orbits, whilst they are wholly uncovered beneath, the forms of the *antennæ* and pedipalps,—altogether present a very interesting assemblage of characters, which, whilst they indicate a near affinity to the genus *Criocarcinus* Guér., show it to be essentially distinct not only from that but from every other genus of *Crustacea*.

#### TYCHE LAMELLIFRONS.

Tab. XII. Fig. 3.

*Hab.* ad Panama, Americæ Centralis.

♂ Mus. Soc. Zool., Bell.

Carapax depressed, of an oblong irregularly four-sided figure, flattened behind the gastric region, which is considerably elevated and with the lateral and posterior margin forms a hexagonal outline: posterior margin turned up. The lateral margins are parallel, and anteriorly separated by a minute fissure from the superior orbital process, which expands outwards, in a broad and flattened plate, covering the elongated eyes, so as to allow only the extremity of those organs to be seen from above; it is curved forwards in a prominent flattened tooth which extends nearly to the level of the *apex* of the *rostrum*. The orbits are wholly wanting beneath. The *rostrum* is formed of two flattened teeth, separated from each other from its base; they are obtuse, and excavated at the inner margin near the *apex*: both margins are furnished with hooked and clavated hairs. The eyes are smaller than their peduncles, which are elongated, somewhat larger at their base, gradually attenuated towards the *apex*, and wholly exposed from below, though concealed above (excepting at their tips) by the superior orbital plate.

The interior *antennæ* are placed in an excavation at the base of the *rostrum*, which is partially divided by a small process of the anterior margin. Exterior *antennæ* a little longer than the *rostrum*; the basilar joint broad, compressed, becoming rather narrower forwards, and having a very shallow longitudinal *sulcus*: the remaining joints cylindrical, furnished on the outer side with numerous hairs, which are hooked at the extremity; the second joint with a minute tubercle at its base; the third abruptly smaller than the preceding one. External pedipalps with the outer footstalk subulate; the first

joint of the inner footstalk longitudinally channelled, externally deeply emarginate for the articulation of the second joint, which is somewhat securiform, and tridentate at its inner margin.

*Abdomen* consisting of seven joints in the male, the third being longer and broader than the contiguous ones.

Anterior feet simple, slender, smooth, shorter than the second pair; the fingers perfectly simple, and meeting only at their points. The remaining feet cylindrical, slightly hairy above, the hairs being thickened at the points and hooked, as are also those of the *antennæ* and *rostrum*. The nails long, acute, compressed, and curved.

Colour a dull uniform brown, paler beneath.

Length of the carapax, including the *rostrum*, 7 lines; breadth 4 lines.

Two male specimens were found by Mr. Cuming at Panama, on sand at the depth of six to ten fathoms.

#### GENUS PERICERA, Latr.

##### PERICERA VILLOSA.

##### Tab. XII. Fig. 4.

*Per. testâ depressâ, villosâ, regionibus elevatis, sulcis separatis, spinâ obtusâ laterali utrinque; rostri cornibus validis, sublamelliformibus, divergentibus; dente articuli basilaris antennæ externæ dente superorbitali multò longiore; antennis exterioribus sub rostro insertis.*

*Hab.* in Sinu Guayaquil.

♂ ♀ Mus. Bell.—♀ Mus. Soc. Zool.

This species belongs to Dr. Edwards's second section of the genus, in which the tooth of the upper margin of the orbit is much shorter than that of the basilar joint of the external *antennæ*. The general appearance of the carapax, its form, its remarkable sculpture, and its dense villous covering render it one of the most interesting of the genus.

The carapax is irregularly rhomboidal, longer than it is broad, considerably produced anteriorly, the posterior margin obtusely angular. It is generally depressed, but the regions are individually elevated, and separated from each other by deep *sulci*. The whole surface is covered by a dense villous coat. The lateral margin is armed on each side with a long, thick, horizontal spine, somewhat conical, obtuse, and bent a little forwards. The eye is very small, placed on a moderate peduncle, and projects a little beyond the margin of the orbit, which is furnished with a single short obtuse tooth above. The basilar joint of the external *antennæ* is prolonged forwards into a tooth, which projects considerably beyond that of the orbit. The moveable portion of these *antennæ* does not extend to much more than half the length of the *rostrum*, by which they are wholly protected and concealed. The *rostrum* is very broad, and prominent;

consisting of two flattened, rather obtuse, diverging horns, which are nearly as far apart at the *apex* as the distance between the eyes.

The *abdomen* in the male consists of seven segments, each elevated in the centre into a tubercle, forming a sort of interrupted obtuse *carina*: in that of the female the segments, which are also seven, have each three elevations, producing a kind of tessellated appearance of the whole.

The feet are covered with extremely short hair. The anterior pair in the male is rather larger than the others, though less so than in *Per. heptacantha*. The fingers meet only at the extremities, though they approximate throughout their length more nearly than in some other species. The nails of the other feet are robust and somewhat curved.

The colour of the male is a brown red, the latter colour predominating on the outer surface: that of the female is a darker brown without any admixture of red.

Length 1 inch 7 lines; breadth the same, including the lateral spines, each of which measures 3 lines.

Three specimens, an adult male, and an adult and an immature female, were obtained by Mr. Cuming in the bay of Guayaquil, on sandy mud, at the depth of eleven fathoms.

PERICERA OVATA.

Tab. XII. Fig. 5.

*Per. testá elongato-ovatá, spinis viginti ad viginti quatuor armatá; dente superorbitali dente articuli basilaris antennæ externæ longiore.*

*Hab.* ad Insulas Gallapagos dictas.

♀ Mus. Soc. Zool., Bell.

The carapax of this species is oval, longer in proportion to its breadth than in many others, considerably elevated, at least in the female, the only sex as yet observed, sparingly covered with short close hair, and furnished with numerous spines, of various length and size, of which there are four small ones on the median line of the gastric region, three on the cardiac and genital, of which the middle one is the largest, one on the intestinal, a very small one on each hepatic, three on the branchial, and four or five on each lateral margin. The orbit is formed nearly as in the other species, the upper and anterior spine extending much beyond that of the basilar joint of the external *antennæ*. Between this spine and the outer one is a fissure, and below a considerable hiatus bounded by the basilar joint of the *antennæ*. The eyes are rather larger than their peduncles, and extend beyond the margin of the orbit. The *rostrum* is formed of two diverging horns, and has a depression at their base.

The basilar joint of the external *antennæ* is very broad; its outer spine is short and triangular, and there is a very small tooth beneath the insertion of the second joint. The moveable portion is as long as the *rostrum*, and beset with a double series of bristles. The second joint of the internal footstalk of the outer pedipalps is triangular, the anterior margin rounded, and scarcely notched.



The *abdomen* of the female is oval, seven-jointed, and has an obtuse interrupted *carina* running its whole length, formed by a tubercle on the centre of each joint: the first joint has a small tooth.

The legs are without spines, but covered with close hair; the first pair in the female is not larger than the others, and shorter than the second and third, which are the longest of the whole. The hand is simple, naked, and slender; the claw small and furnished with extremely minute teeth.

The colour is a rich, rather light, reddish brown.

Length 1 inch; breadth 6 lines.

Two specimens, both females, were dredged by Mr. Cuming at the Gallapagos Islands on coral sand at the depth of six fathoms.

PERICERA HEPTACANTHA.

Tab. XII. Fig. 6.

*Per. testâ pyriformi, dorso quinque-spinoso, ordine 1—3—1, lateribus utrinque unispinosis; rostri cornibus parvis, acutis.*

*Hab.* ad Americæ Centralis oras. (Puerto Portrero.)

♂ Mus. Soc. Zool.—♀ Bell.

The carapax of this species is broader in proportion to its length than in most others of the genus, contracted forwards, and considerably elevated. It is moderately covered with close short hair, longer towards the fore part, and has seven large spines, of which one is placed on the genital region, one on the cardiac, one on the intestinal, one on each branchial, and one on each side beneath the latter; they thus form a cross, of which that on the cardiac region forms the point of intersection. The two branchial and the intestinal spines are a little recurved. The orbit, as in all the species of this section, is furnished above with a long tooth, which is recurved. The eyes project but little beyond the orbit. The *rostrum* is small, occupying not much more than one third of the distance between the external margins of the orbits; the *cornua* are as long as the breadth of the *rostrum*, acute, styliform, and divergent.

The external *antennæ* have the basilar joint moderately broad, with the external tooth shorter than that above the orbit; there is a small tooth beneath the former, and the tooth which goes to form part of the inferior margin of the orbit is long, acute, and laminated. The moveable portion of the *antennæ* is setaceous, as long as the *rostrum*, and furnished with a few hairs.

The second joint of the inner footstalk of the external pedipalps is quadrate and emarginate at the anterior and inner angle.

The *abdomen* of the male is rather prominent; the second joint has a small central tubercle, the third three slight elevations, the sixth, which is the longest, has a central tubercle, and on each side a minute projection; the seventh is rounded anteriorly. The *abdomen* of the female is broad, rounded, and has a broad obtuse *carina*.

The first pair of feet in the male are much larger and longer than the others: in the female they are the smallest of all. They are covered with scattered granulations, but are without spines. The claw is obtuse, the fingers curved, meeting only at the point, which is obtuse, rounded, and denticulated. The remaining feet are nearly equal, covered with short hair, the nails moderately curved.

Colour light brown, covered with darker hair; the first pair of feet reddish.

Length 1 inch 5 lines; breadth, including the lateral spines, 1 inch 7 lines.

Two specimens, a male and a female, were obtained by Mr. Cuming at Puerto Portrero, in Central America, on sand, at the depth of thirteen fathoms.

GENUS ACANTHONYX, *Latr.*

ACANTHONYX PETIVERII, *Edw.*

Found by Mr. Cuming at the Gallapagos Islands on fine coral sand at the depth of five fathoms; and by Mr. Miller on the coast of Brazil.

GENUS EPIALTUS, *Edw.*

EPIALTUS DENTATUS, *Edw.*

*Ep. rostro bifido; dente minimo utrinque ante orbitam; margine laterali rotundato, haud marginato, dentibus tribus et tuberculo unico.*

Found by Mr. Cuming at Valparaiso in crevices of rocks in deep water.

EPIALTUS MARGINATUS.

Tab. XI. Fig. 4. ♀. Tab. XIII. ♂.

*Ep. rostro bifido; dente minimo utrinque ante orbitam; margine laterali marginato, dentibus duobus anticè et tuberculis duobus ad latera, quorum posterius obsoletum.*

*Hab. ad Insulas Gallapagos dictas, D. Cuming; et ad oras Brasiliæ, D. Miller.*

*Mus. Soc. Zool., Bell.*

The carapax is rounded behind but angular and produced forwards; the surface even, punctate; and the regions divided by impressed lines. The upper and under surfaces are separated by a distinct marginal line, on which are two small tubercles, of which the posterior is obsolete, or marked only by a slight turn in the marginal line. The anterior margin has two acute prominent teeth. The *rostrum* is narrowed forwards and bifid; and there is a small tooth on each side in front of the orbit. The orbits are circular and entire, and the eyes globular, accurately fitting the orbits and scarcely projecting beyond them.

The internal *antennæ* are lodged in a large *fossa*, which is open and undivided anteriorly, but divided from behind forwards by a long narrow spine. The external *antennæ* are concealed by the *rostrum*; the basilar joint broad and much produced forwards; the moveable portion cylindrical, shorter than the *rostrum*. Pedipalps with the outer

footstalk having parallel sides, except at the *apex*, which is triangular; inner footstalk smooth and polished, with the second joint truncated at the inner and posterior angle.

*Abdomen* of both sexes with seven joints.

Anterior feet of the male very robust, nearly twice as long as the carapax, very minutely granulated: the arm with two tubercles above and two beneath: the hand rounded, smooth; the fingers strongly tuberculated through their whole length, meeting only at the points, which are somewhat excavated; the moveable finger longer than the other. Posterior feet cylindrical, the joints tumid: the second pair longer than the hinder ones, which decrease in length to the fifth. A tooth on the inferior side of the penultimate joint, which is hairy at the point: it is smallest on the second pair and longest on the fifth. The last joint is curved, acute, and finely toothed beneath.

Colour of the adult dark brown; of the young female, paler and reddish.

Length of the carapax 4 inches; breadth 3 inches 3 lines.

The large male specimen was found by Mr. Cuming with *Ep. dentatus* at Valparaiso in crevices of rocks. The young female specimen was brought by Mr. Miller from Rio Janeiro.

It is not without considerable hesitation that I have decided on giving to these *Crustacea* the characters of distinct species. I was first led to the opinion that they were so, by comparing with Mr. Cuming's specimens of *Epialtus* one of an immature female which was kindly presented to me by Mr. Miller, and which he had taken at Rio: and a subsequent more particular examination of the former specimens has tended greatly to confirm this view, as the largest and finest of them, a very fine adult male, possesses all the characters which had led me to consider Mr. Miller's specimen as distinct. I have thought it desirable to offer a figure of each of these two individuals, and as they differ from *Ep. dentatus* only in slight characters, which are easily appreciated, it appeared unnecessary to figure that species, especially as it has been described by my friend Dr. Milne Edwards, and will I hope shortly be figured by him.

The characters upon which I have founded this distinction are these. In *Ep. dentatus* the lateral margin is rounded, the sides of the carapax passing off from above to beneath in a continuous rounded surface: in *Ep. marginatus* the upper and under surfaces are separated by a distinct slightly salient margin; the posterior tubercle, which in the former is very distinct, is in the latter only indicated by a very slight degree of prominence in the marginal line; and the lateral spine of the former is in the latter supplied by a tubercle. The very great difference in the size of the anterior feet probably depends on age: but it is worthy of notice that in the rest of the feet the inferior spine near the extremity of the penultimate joint, is much smaller and shorter relatively in *Ep. dentatus* than in *Ep. marginatus*.

## PLATE VIII.

- Fig. 1. MICRORHYNCHUS GIBBOSUS, ♂.  
*a.* Abdomen.  
*b.* Anterior foot.  
*c.* External antenna.
2. MICR. DEPRESSUS, ♀.  
*d.* Under surface of the head and anterior part of the body.  
*e.* Abdomen.  
*f.* Anterior foot.
3. LIBINIA ROSTRATA, ♂.

## PLATE IX.

- Fig. 1. RHODIA PYRIFORMIS, ♂.  
*a.* Under surface of the head.  
*b.* Anterior foot.  
*c.* Abdomen.
2. PELIA PULCHELLA, ♂.  
*d.* Under surface of the head.  
*e.* Anterior foot.  
*f.* Abdomen.
3. HERBSTIA EDWARDSII, ♂.  
*g.* Under surface of the head.  
*h.* Abdomen of the male.  
*i.* Abdomen of the female.
4. THOE EROSA, ♂.  
*k.* Under surface of the head.  
*l.* Anterior foot.  
*m.* Abdomen of the male.  
*n.* Abdomen of the female.  
*o.* Abdomen seen from behind.
5. HYAS EDWARDSII, ♂.  
*p.* Anterior foot.  
*q.* Abdomen of the male.  
*r.* Abdomen of the female.
6. PISA SPINIPES, ♂.  
*s.* Under surface of the head.  
*t.* Anterior foot.  
*u.* Abdomen of the female.
7. PISA ACULEATA, ♀.  
*v.* Abdomen of the male.

## PLATE X.

- Fig. 1. MITHRAX ROSTRATUS, ♂.  
*a.* Abdomen of the male.  
*b.* Abdomen of the female.
2. MITHR. URSUS, ♀ adult.
3. MITHR. URSUS, ♀ young.  
*c.* Abdomen of the young male.  
*d.* Abdomen of the young female.  
*e.* Abdomen of the adult female.

## PLATE XI.

- Fig. 1. MITHRAX NODOSUS, ♂.  
*a.* Under surface of the head.  
*b.* Abdomen.
2. MITHR. DENTICULATUS, ♀.  
*c.* Chela of the anterior foot.  
*d.* External pedipalp, with its inner footstalk.  
*e.* Abdomen.
3. MITHR. PYGMÆUS, ♂.  
*f.* Under surface of the head.  
*g.* Anterior foot.  
*h.* Abdomen.
4. EPIALTUS MARGINATUS, ♀.  
*i.* Under surface of the head.  
*j.* Abdomen of the male.  
*k.* Abdomen of the female.

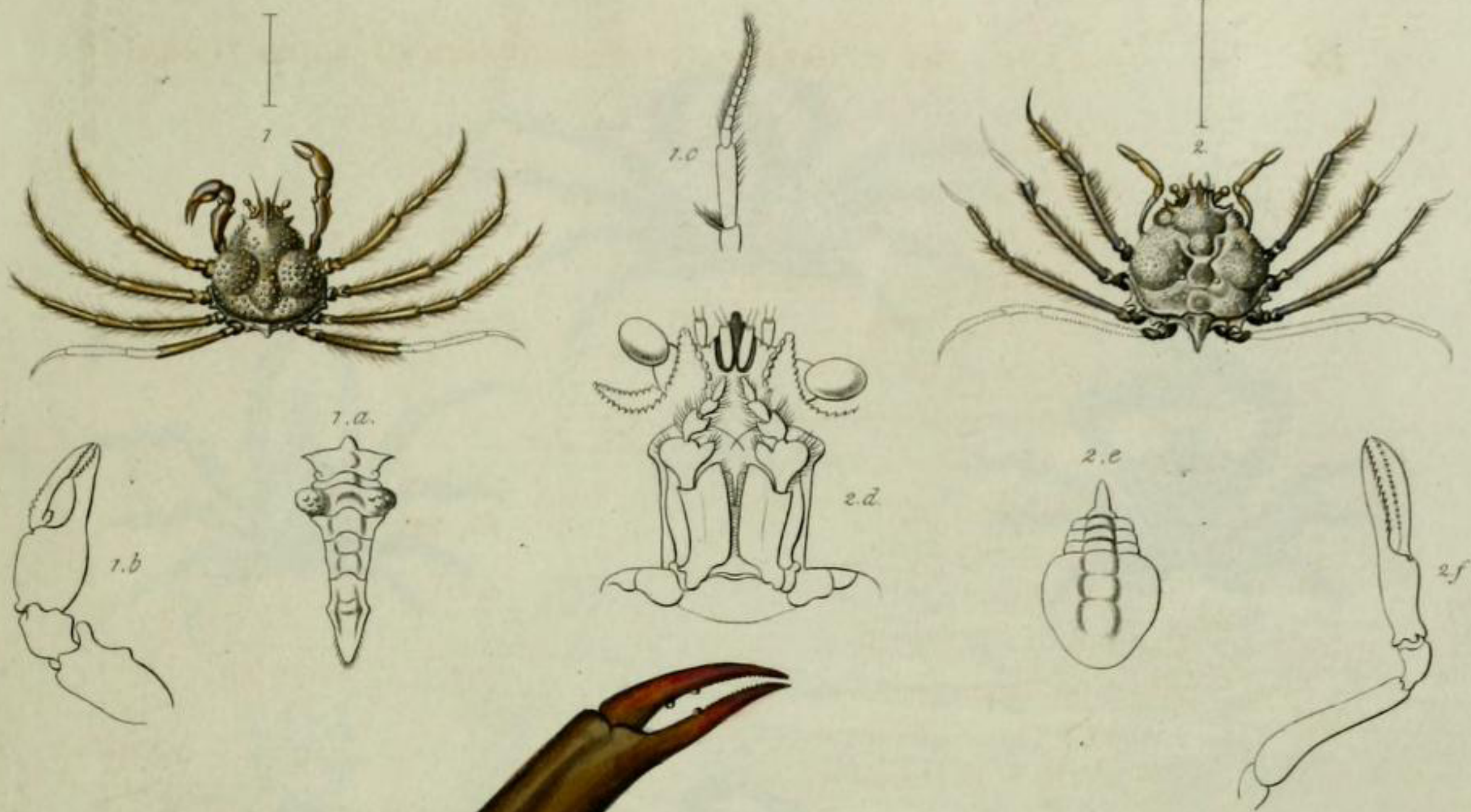
## PLATE XII.

- Fig. 1. OTHONIA SEX-DENTATA, ♀.  
*a.* Under surface of the head.  
*b.* Internal antenna.  
*c.* Anterior foot.  
*d.* Abdomen.
2. OTH. QUINQUE-DENTATA, ♀.  
*e.* Abdomen.
3. TYCHE LAMELLIFRONS, ♂.  
*f.* Under surface of the head.  
*g.* Internal antenna.  
*h.* External pedipalp.

- i.* Anterior foot.
- j.* *Abdomen.*
- 4. PERICERA VILLOSA, ♂.
  - k.* Under surface of the head.
  - l.* External pedipalp.
  - m.* *Abdomen* of the male.
  - n.* *Abdomen* of the female.
- 5. PER. OVATA, ♀.
  - o.* Under surface of the head.
  - p.* External pedipalp.
  - q.* *Abdomen.*
- 6. PER. HEPTACANTHA, ♂.
  - r.* Under surface of the head.
  - s.* External pedipalp.
  - t.* *Abdomen* of the male.
  - u.* *Abdomen* of the female.

## PLATE XIII.

EPIALTUS MARGINATUS, ♂.



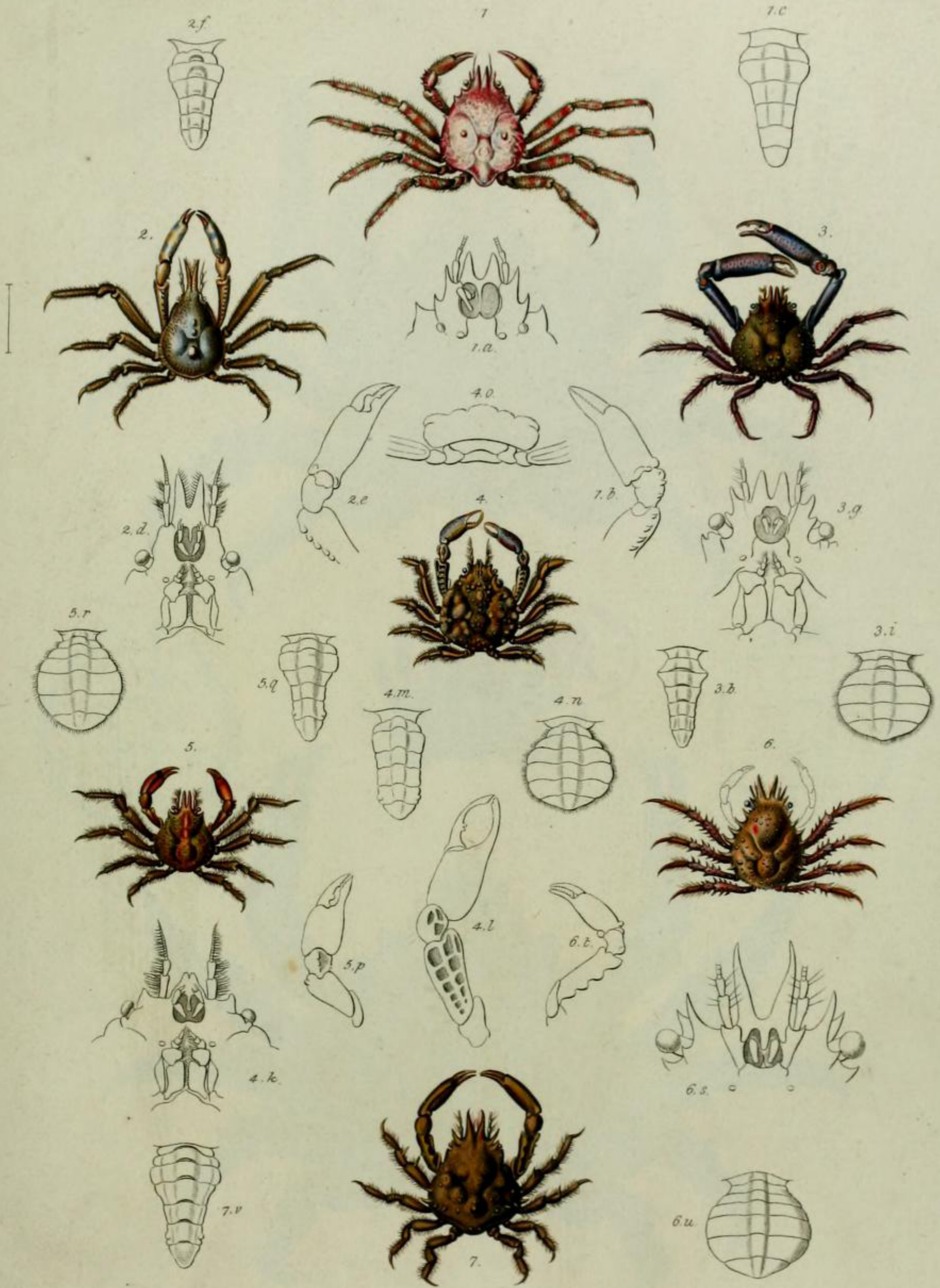
J.O. Westwood, del.

Savaino, sc.

1. *Microhynchus gibbosus*. 2. *Micr. depressus*.  
3. *Sibinia rostrata*.





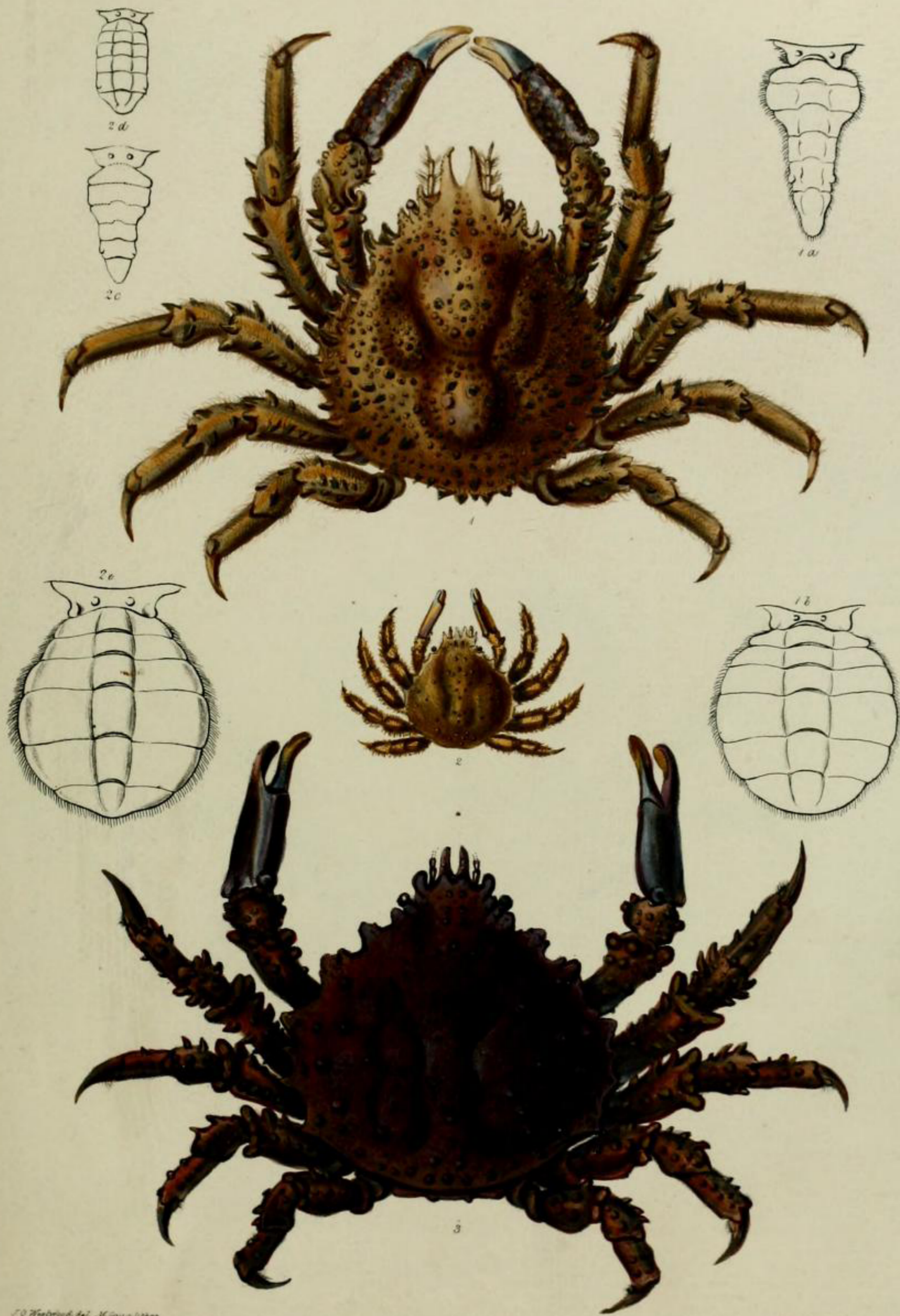


J. O. Westwood, del.

Swaine Sc.

1. *Rhodia pyriformis*. 2. *Peltia pulchella*. 3. *Herbstia Edwardsii*.  
 4. *Thoe crosa*. 5. *Hyas Edwardsii*. 6. *Pisa spinipes*. 7. *Pisa aculeata*.



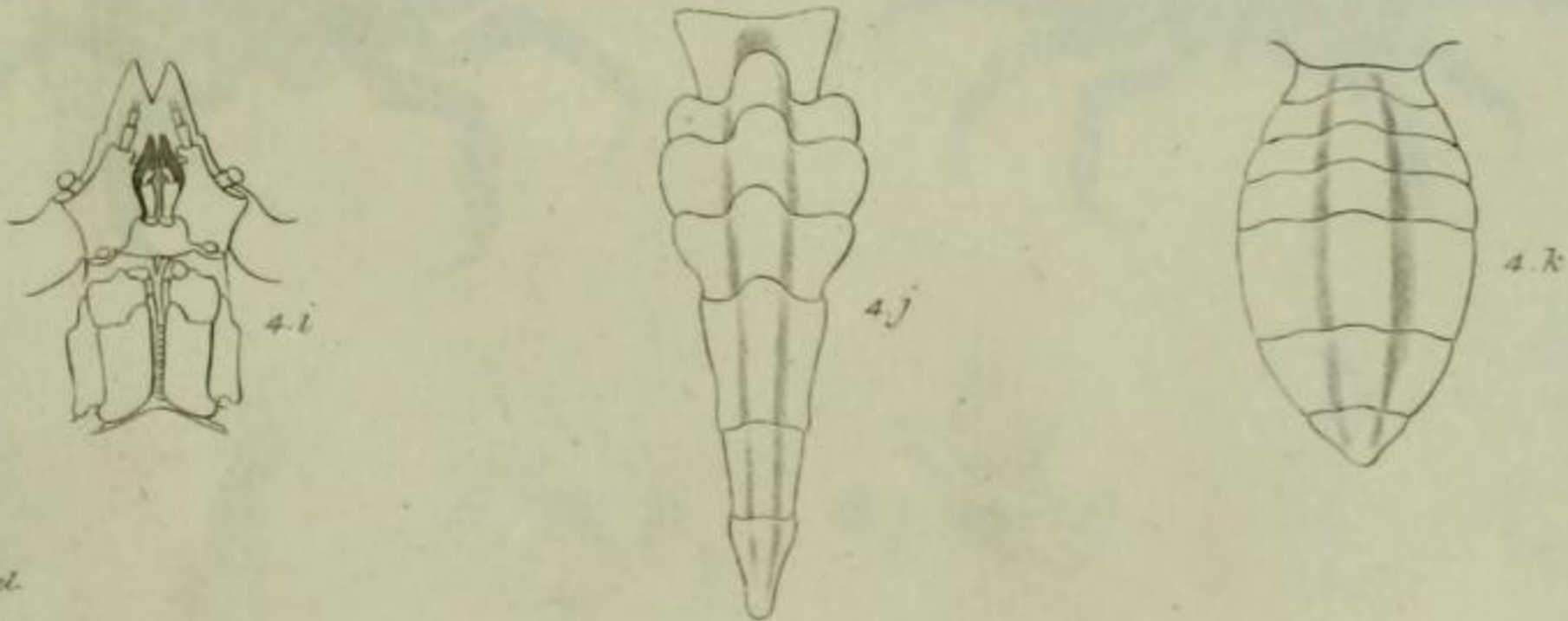
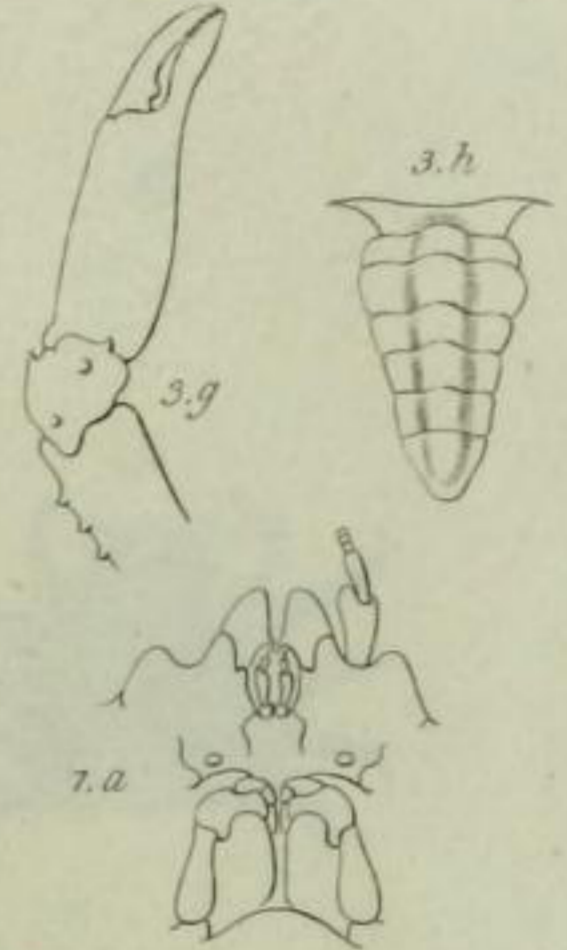
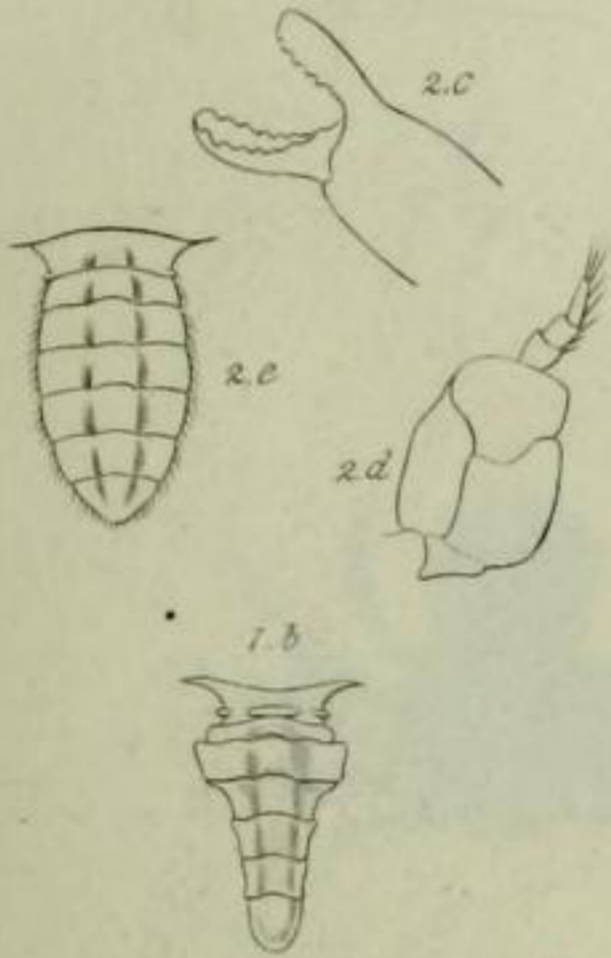


J. O. Westwood del. M. Gussak lithog.

Printed by C. Ballouin del.

1. *Methrac rostratus* 2. 3. *Methr. Ursus*



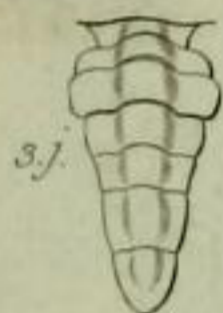
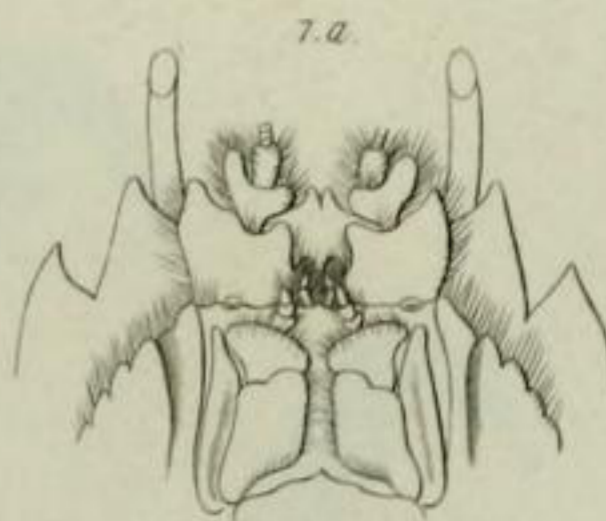
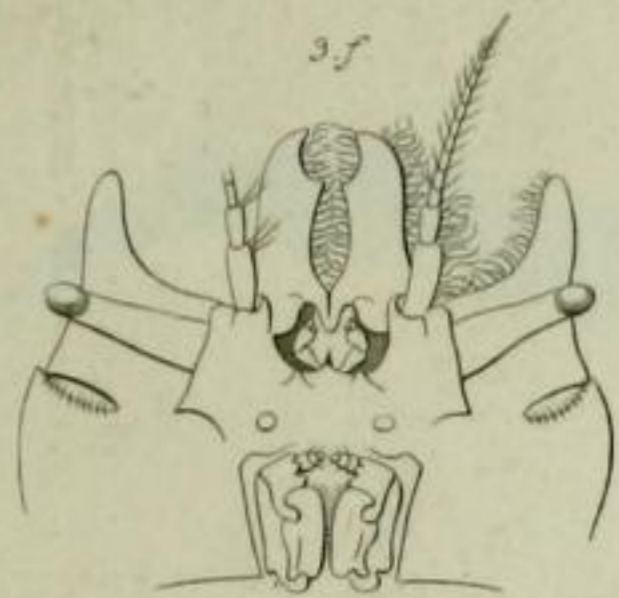


J. O. Westwood, del.

Scamie, Sc.

1. *Mithrax nodosus*. 2. *Mithr. denticulatus*. 3. *Mithr. pygmaeus*.  
4. *Epialtus marginatus*.





6.



J.O. Westwood del.

Swaine Sci.

1. *Othonia sexdentata*. 2. *Oth. quinquedentata*. 3. *Tyche lamellifrons*.  
4. *Pericera villosa*. 5. *Per. ovata*. 6. *Per. heptacantha*.







Printed by C. Shillman.

*Epialtus marginatus*

J. D. Whittier del. J. C. Gussak sculp.

