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9. On a Collection of Crustacea, Decapoda and Isopoda, chiefly from South America, with descriptions of new Genera and Species. By EDWARD J. MIERS, F.L.S., F.Z.S., Assistant in the Zoological Department, British Museum.

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(Plates LXVI.—LXIX.)

The greater number of the Crustacea described in the following paper were collected in Peru, Guiana, Cayenne and Martinique, and were sent by Professor A. Wrzesniowsky, of the University of Warsaw, to Dr. Günther, by whom they were intrusted to me for determination and description. The collection contained also a few Old-World species from various localities, which are described separately at the end of the paper. I have also added descriptions of species belonging to the same genera in the collection of the British Museum, which have hitherto been unrecorded, or known only from names without descriptions applied to them by A. White, in the 'List of Crustacea of the British Museum,' 1847.

In all, 37 species are noticed, of which 27 are from the New, and 10 from the Old World, viz. *Brachyura* 5 species, *Anomura* 7, *Macrura* 5, *Isopoda* 20. Of these 22 appear to have been hitherto undescribed, viz. *Brachyura* 1 species, *Anomura* 6, *Macrura* 2, *Isopoda* 13.

I have carefully noted such variations as I have observed between individuals of the same species—the nomenclature having often been needlessly encumbered by the description of nominal species, based only upon sexual or other differences, which the examination of a good series of specimens would have shown to be insufficient. I have also endeavoured to compare the species described with their allies, although in the case of the terrestrial and fluviatile Decapoda and terrestrial Isopoda this has generally been attempted only as far as their congeners inhabiting the same continent are concerned. Many, indeed, of the European Isopoda are only known to me by descriptions so short and superficial as to render their determination a matter of great difficulty, and their comparison with the New-World species described in the following paper impossible.

LIST OF THE SPECIES DESCRIBED.

The names of the species in the collection from Warsaw are in Roman type, those described from specimens in the collection of the British Museum are in italics.

New-world Species.

DECAPODA.

BRACHYURA.

Acanthonyx petiverii, *M.-Edw.* ? Peru. *Hepatus chilensis*, *M.-Edw.* Peru.
Neptunus anceps, *Saussure*. Marti- — *tuberculatus*, *Saussure* (adult).
nique. W. Indies, Cayenne.

ANOMURA.

Clibanarius cayennensis, n.	Cayenne.	<i>Clibanarius lordii</i> , n.	Vancouver Island.
— <i>carlescens</i> , n.	"	— <i>isochirus</i> .	—?
— <i>speciosus</i> , n.	Brazil.	— <i>pilosimanus</i> ,	—?

MACRURA.

Palæmon nattereri, Heller.	Guiana.	Palæmon gaudichaudii, M.-Edw.	Peru.
— brasiliensis,	"	Euryrynchus wrzesniowski, n.	"
— jelskii, n.	"	Cayenne.	"

ISOPODA.

Armadillidium caelatum, n.	Cayenne.	Porcellio (Porcelloides) flavo-vittata, n.	Cayenne.
Armadillo vulgaris, Latr.	"	— (—) aztecus, Saussure.	Peru.
Cubaris affinis, n.	"	Philougria nitida, n.	Peru, Guiana.
— <i>gigas</i> , n.	Nicaragua.	Lygia baudiniana, M.-Edw.	Cayenne.
Porcellio cayennensis, n.	Cayenne.	Cymothoa æstrum, L.	Peru.
— (Porcelloides) jelskii, n.	Peru, Guiana.	Anilocra lævis, n.	Martinique, Peru.

Old-world Species.

DECAPODA.

BRACHYURA.

Acanthonyx elongatus, Red Sea.

ANOMURA.

Clibanarius misanthropus, Risso.

ISOPODA.

Tylos latreillei, Audouin.	Odessa.	Porcellio hispida, n.	Mongolia.
— <i>granulatus</i> , n.	Japan, Borneo.	Lironeca daurica, n.	Dauria.
Armadillidium pustulatum, Dum.	Moldavia.	Lironeca laticauda, n.	Mantchuria.
Porcellio swammerdamii, Audouin,	Egypt.	Anilocra trichiura,	Mauritius.

New-world Species.

DECAPODA.

BRACHYURA.

ACANTHONYX, Latreille.

ACANTHONYX PETIVERII?

Cancer muricatus compressus, Petiver, Pterigraphia Americana, pl. xx. fig. 8.

Acanthonyx petiverii, M.-Edw. Hist. Nat. Crust. i. p. 543 (1834); Dana, U.S. Expl. Exp. xiii. Crust. (part i.), p. 128, pl. v. fig. 6 (1852); Guérin-Méneville in Ramon de la Sagra, Histoire de l'Isle de Cuba, Crust. p. xxvii (1857); v. Martens, Archiv f. Nat. xxxviii. p. 85 (1872).

Hab. Peru.

In all the specimens the teeth of the lateral margins are clothed with tufts of short hairs. In one or two specimens there are two small tufts upon the gastric region; in the others these are entirely absent. The median tooth of the lateral margin is always much nearer to the posterior than to the anterior tooth; the anterior tooth is somewhat less prominent in the youngest specimens. In the males

the hands are very large, compressed, and slightly cristate; in the females they are small but compressed.

There are eight males and three females in the collection. Length of adult male 1 inch 2 lines, breadth 9 lines.

This species, if the determinations of authors are correct, is one of the few that are common to the eastern and western shores of the American continent. It has been recorded by Milne-Edwards, Guérin-Méneville and v. Martens from the West Indies, by Professor Bell from the Galapagos and Brazil, and by Dana from the coast of Chili. Only a single young specimen from the West Indies is in the collection of the British Museum; but this does not seem to differ specifically from examples from the eastern coast.

The original specimen of Pctiver was from the West Indies; but his figure is not sufficiently accurate to be available for specific comparison.

This species very closely resembles the European *A. lunulatus*, Risso, but may be distinguished from it by its narrower and less deeply emarginate front, the form of the hands, which are slightly cristate above, and by the shorter, broader, and more dilated penultimate joints of the ambulatory legs.

Acanthonyx debilis, Dana, U.S. Expl. Exp. xiii. Crust. i. p. 125, pl. v. fig. 5 (1852), from Valparaiso, differs in the non-cristate wrist and small hands of the males. *A. concamerata*, Kinahan, Journ. Roy. Dublin Soc. i. p. 334, pl. xiv. fig. 1 (1858), from the North Cinchas Island, Peru, has, if the figure be correct, the anterior lateral angles of the carapace rounded and far less prominent. *A. emarginatus*, M.-Edw. and Lucas, in D'Orbigny, Voy. Amér. Mérid. p. 9, pl. v. fig. 2, from Peru, has also the first tooth or antero-lateral lobe far less prominent, the anterior margin of the carapace straight, and the hands more strongly cristate.

NEPTUNUS, De Haan.

NEPTUNUS ANCEPS.

Lupea anceps, De Saussure, Rev. et Mag. Zool. (sér. 2) ix. p. 502 (1857); Mém. Soc. Phys. et Hist. Nat. Genève, xiv. (part 2) p. 434, pl. ii. fig. 11 (1858).

Neptunus anceps, A. M.-Edw. Nouv. Archiv. Mus. Hist. Nat. x. p. 328 (1861).

Hab. Martinique.

The length of the single specimen in the collection (a male), is 7 lines, the breadth at base of epibranchial spine 10 lines.

The specimen from Martinique differs in some few particulars from De Saussure's description, which was founded upon a very small example. He says that there *ten* spines upon the antero-lateral margin; only *nine* are shown in the figure, including the external orbital spine. In very young specimens of this genus, however, it is not uncommon to find one or two additional spines upon the antero-lateral margins. There is, according to De Saussure, a second spine at the distal extremity of the superior margin of the hand;

this is scarcely apparent in the larger specimen from Martinique, and may also be due to the immaturity of the specimen examined by him. *N. anceps* is nearly allied to *N. hastatus*, from the Mediterranean, from which it differs in the shorter, more obtuse median frontal teeth, &c., and to *N. laevis*, A. Milne-Edwards, from the Indian Ocean, in which the carapace is nearly smooth, and the median teeth of the front slightly prominent and acute.

Lupea exasperata, Gerstaecker, Archiv f. Nat. xxii. p. 129 (1856), from Puerto Cabello, has the median teeth of the front separated by a deeper fissure, and the last spine of the antero-lateral margins but little longer than the preceding. *L. pudica*, Gerst. l. c. p. 130, from the coast of Brazil, has the upper surface of the carapace nearly smooth, and glabrous; the arm blunt and without a spine at the distal extremity of its posterior margin.

This species has been united by von Martens, Archiv f. Nat. xxxviii. p. 95 (1872), with *Lupea forceps*, Fabricius, on the authority of a large series of specimens from Cuba, in which von Martens observed a great increase of length in the anterior legs as the animal increased in age. I believe it to be quite impossible that *L. anceps* can be identical with *L. forceps*, as described and figured by Leach, Zool. Miscell. i. pl. liv. (1814), and Alph. Milne-Edwards, Arch. Mus. Hist. Nat. x. p. 352, pl. xxviii. fig. 1 (1861). In Leach's typical specimen of *L. forceps* in the British-Museum collection, not only are the fingers very slender and more than three times the length of the palm, but the carapace is strongly granulated, the frontal teeth acute and separated at base by wide intervening spaces; there is a very deep fissure in the middle of the upper orbital margin (a mere notch in *L. anceps*), five spines upon the anterior margin of the arm in *N. anceps*, seven in *L. forceps*, the meros joint of the fifth pair of legs without spines in *L. anceps*, with two spines in *L. forceps*, &c.

Lupa bellicosa, Stimpson, quoted by M. A. Milne-Edwards, l. c., as a synonym of this species, is the *Callinectes bellicosus* of Ordway, and has probably nothing to do with *N. anceps*.

HEPATUS, Latreille.

HEPATUS CHILENSIS.

Hepatus chilensis, M.-Edwards, Hist. Nat. Crust. ii. p. 117 (1837).

Hepatus chilensis, M.-Edwards and Lucas, in D'Orbigny, Voy. Amérique mérid. vi. part i. Crust. p. 28, pl. xiv. fig. 1 (1843); Nicolet, in Gay, Historia de Chile, Zool. iii. Crust. p. 174 (1849); Dana, U.S. Explor. Exped. xiii. Crust. part i. p. 395, pl. xxv. fig. 3 (1852); Kinahan, Journ. Roy. Dublin Soc. i. p. 345 (1858); Heller, Reise der Novara, Crust. p. 70 (1865).

Hab. Peru (*Jelski*).

Two specimens (male and female) are in the collection.

This species appears to be subject to considerable variation in the sculpture of the antero-lateral margins and the coloration of the

carapace. M. Milne-Edwards says of it, "*les bords latéro-antérieurs sont uniformément dentelés sans être crénelés; couleur rouge, uniforme.*" The remarks upon this species in Gay's 'Historia de Chile,' coincide with this description.

The specimens described by Dana, collected at Valparaiso, were of "a yellowish or ochreous base closely covered with a brownish-purple reticulation;" and this is nearly the colour of the figure of MM. Milne-Edwards and Lucas in D'Orbigny's 'Voyage dans l'Amérique méridionale,' and of a specimen (dry) in the collection of the British Museum. Other specimens (dry) in the Museum collection are of a nearly uniform pink colour, with narrow sinuated light-yellow spots and lines; and this also is the colour of the specimens from Peru, in spirits.

The broad truncate teeth of the antero-lateral margin are more or less crenulated in all the specimens that I have seen; and Milne-Edwards's description is certainly inaccurate in this respect, as was first noted by M. Herklots, in his comparison of this species with his *H. van benedeni* (itself the *H. decorus* of Herbst), Bijdragen tot Dierkundige. Abh. v. p. 35 (1852)¹.

ANOMURA.

CLIBANARIUS, Dana.

CLIBANARIUS CAYENNENSIS, sp. n. (Plate LXVI. fig. 1).

Carapace flattened; anterior margin more prominent and straight at the bases of the eyes, oblique on each side at bases of external antennæ, with a small median frontal tubercle, and with a transverse nearly semicircular suture behind the anterior margin. Eye-peduncles very slender, and nearly as long as the anterior margin of the carapace, their basal scales short and denticulated on their antero-external margins; basal scale of the external antennæ about reaching to the extremity of the penultimate joint of the peduncle. Anterior legs stout, the right the largest, hands rather finely granulated and clothed towards the tips with short stiff hairs, the palms somewhat swollen at base, the fingers excavated, with black corneous tips, and opening horizontally (as in all the species of the genus). Tarsi of the second and third pairs of legs longer than the penultimate joint, subcylindrical, slightly curved, with a small, black, terminal nail, and thinly clothed with short brown hairs. Fifth pair of legs much more slender than the fourth. Colour uniform yellowish-brown.

Hab. Cayenne.

¹ *Hepatus tuberculatus* of Saussure, from Guadeloupe, is evidently founded upon an immature example; the transverse tuberculated ridges mentioned in his description are generally prominent in the young of other species, as for example, *H. angustatus*, Fabricius, of which there is a large series in the national collection, from Brazil. Specimens of a species from the West Indies and Cayenne, in the British-Museum collection, which I think may be the adult *H. tuberculatus*, are very closely allied to the *H. angustatus*, being in fact only distinguished from it by the coloration: in *H. angustatus* the markings form brownish-pink spots and blotches; in the specimens I refer to *H. tuberculatus* they consist of purplish-pink spots, usually forming more or less continuous transverse lines.

This species, of which unfortunately but a single specimen exists, in bad condition, is distinguished by the unequal-sized hands and the coloration (there being no trace whatever of banded markings on the legs) from the other American species of the genus. The abdomen is imperfect. In the form of the hands it most nearly resembles *C. vittatus*, Bosc, of which specimens from Charleston Bay, Carolina, are in the national collection, presented by the Smithsonian Institution.

The following American species of this genus in the collection of the British Museum are apparently undescribed.

CLIBANARIUS CARNESCENS, sp. n. (Plate LXVI. fig. 2.)

Carapace with the frontal median tooth very small, acute. Eye-peduncles slender, and a little shorter than the anterior margin of the carapace, their basal scales small, and denticulated on their external margins. External antennæ with their basal scales denticulated on their inner margins, and ciliated towards their apex, reaching very little beyond the extremity of the penultimate joint. Anterior legs with the hands very small, oblong-oval, and not broader than the wrists, with strong scattered granules, and tufts of short hairs. Ambulatory legs with the tarsi very long, curved, not compressed, much longer than the penultimate joints, with tufts of short hairs. Colour orange-pink, with 4 broad alternating vittæ of darker colour on the legs. Length to base of abdomen 9 lines.

Hab. Cayenne. (Coll. Brit. Mus.)

CLIBANARIUS SPECIOSUS, sp. n. (Plate LXVI. fig. 3.)

Carapace with a very small acute median frontal tooth, and with the anterior margin but slightly oblique at the bases of the external antennæ, postfrontal suture nearly obsolete. Eye-peduncles slender, and about as long as the frontal margin of the carapace, with their basal scales small, narrow, and denticulated on their inner margins toward the apex. External antennæ with the last joint of the peduncle more than twice as long as the penultimate, and with the basal scale slender, reaching a little beyond the extremity of the penultimate joint. Anterior legs with the hands oblong-oval, equal, rather closely and finely granulated, and clothed with short hairs. Tarsi of the second and third pairs of legs longer than the penultimate joint, with longitudinally-seriate close-set tufts of rather long hairs. Colour grey, or chocolate-brown (in dried specimens); ambulatory legs with eight longitudinal whitish narrow vittæ. Length of carapace 1 inch.

Hab. Brazil. (Coll. Brit. Mus.)

It differs from *C. brasiliensis*, Dana, U.S. Expl. Exp. Crust. p. 467, pl. xxix. fig. 7, in the much longer tarsi.

CLIBANARIUS LORDI, sp. n. (Plate LXVI. fig. 4.)

Resembles the preceding species in coloration &c. The ophthalmic scales, however, are very small, ovate-acute, and entire; the basal scales of the external antennæ very short, not reaching to the ex-

tremity of the penultimate joint of the peduncle; the hands narrow oblong-oval, with small spiniform tubercles. The sides of the carapace, legs, and basal scales of the external antennæ clothed with long light fulvous hairs. Length of carapace about 1 inch.

Hab. British Columbia, Vancouver Island. (Coll. Brit. Mus.)

A single specimen presented by J. K. Lord, Esq., is in the national collection. It is labelled "*Clibanarius lineatus*," but is certainly not the species described under that name by Milne-Edwards, Ann. Sci. Nat. (ser. 3) v. p. 62 (1848), and figured by Dana, U.S. Expl. Exp. Crust. i. p. 462, pl. xxix. fig. 2 (1852), from the Samoan Islands¹.

PAGURUS? sp.

With *C. cayennensis* a specimen was sent that, I think, must be referred to the restricted genus *Pagurus*, on account of the short, thick eye-peduncles; but as the anterior legs are both wanting, it cannot be referred with absolute certainty to any one of the genera of the family Paguridæ. I cannot identify it at present with any species known to me, and refrain from giving it a distinct specific designation, on account of its mutilated condition. The eye-peduncles are much shorter than the anterior margin of the carapace, their basal scales small, ovate-acute, and entire. The basal scale of the external antennæ is long, slender, nearly as long as the peduncle of the external antennæ, and longer than the eyes. The second and third legs have the antepenultimate and penultimate joints short, subequal, shorter than the tarsi, granulous or even spinose on their upper margin, tarsi long, twisted and channelled. This species somewhat resembles *Eupagurus obesocarpus*, Dana (U.S. Expl. Exp. xiii. Crust. i. p. 445, pl. xxvii. fig. 5), from Valparaiso (?), but differs in the shorter eyes and much longer acicle of the external antennæ.

Hab. Cayenne.

MACRURA.

PALEMÓN, Fabricius.

The species of this genus are very numerous and are found in all parts of the world, inhabiting both salt, brackish, and fresh water. Their determination is a matter of great difficulty, on account of the changes which the animal undergoes as it increases in age. The

¹ The *Pagurus isochirus*, named but not described by White (List Crust. Brit. Mus. p. 59, 1847), belongs to this genus, and is founded upon a single specimen of unknown locality in the British-Museum collection. This specimen generally resembles *C. carnescens*, but is of a uniform light-yellow colour, without spots or vittæ, inclining to orange at the extremity of the tarsi. Length nearly 1 inch.

Pagurus pilosimanus, White (*l. c.* p. 60), also founded upon a single specimen of unknown habitat, belongs, I think, to this genus, but is in too mutilated a condition for detailed description. It is, however, remarkable for the great length of the eye-peduncles, which are about once and a half the length of the anterior margin of the carapace, with a small spiniform basal scale, and a broad crimson vitta. The anterior legs are now wanting in this specimen. Length about 1 inch.

teeth of the rostrum are variable in number in different examples of the same species; and even the comparative length of the joints of the second pair of legs (which affords excellent specific characters when taken from adult animals) is less trustworthy in younger specimens.

After having examined a considerable number of species of this genus, I may express my belief that some of them—perhaps some even of those included in the present paper—will, upon comparison of larger series of specimens than we at present possess, be found to represent merely different stages of growth of the same animal. Dr. von Martens, in two papers in the *Archiv f. Naturgeschichte*, xxxiv. p. 34 (1868), and xxxv. p. 32 (1869), has done good service toward elucidating this difficult genus by exhibiting in a tabulated form the diagnostic characters of the species inhabiting the Eastern-Asiatic Region, and South Brazil.

PALÆMON NATTERERI.

Palæmon nattereri, Heller, Kais. Akad. Wissensch. Sitzungsber. xiv. Abth. i. p. 414, pl. ii. fig. 36, 37 (1862); von Martens, *Archiv f. Naturg.* xxxv. p. 32 (1869).

Hab. Guiana (river St. Laurent) (*Jelski*).

This species was described by Heller from specimens collected by Natterer in the Rio Negro, Brazil. It is distinguished from its congeners from the American continent by the elongated, strong, second pair of legs, which are closely spinulose, and of rather unequal size; the palm is much longer than the wrist; the upper (mobile) finger has two, the lower a single strong tooth on its inner margin. The sides of the carapace below the hepatic spine are very rough and scabrous to the touch. Two specimens are in the collection, which I refer to this species: in the larger (length to anterior margin of carapace 2 inches) the rostrum is imperfect; in the smaller the rostrum $\frac{1}{4}$ is toothed. In the smaller specimens; as is always the case in the species of the genus *Palæmon*, the distinctive characters are far less strongly marked.

PALÆMON BRASILIENSIS.

Palæmon brasiliensis, Heller, Kais. Akad. Wissensch. Sitzungsber. xiv. Abth. i. p. 419, pl. ii. fig. 46 (1862); von Martens, *Archiv f. Naturg.* xxxv. p. 32 (1869).

Hab. Guiana (R. St. Laurent) (*Jelski*).

Three specimens of this species are in the collection; the length of the largest is 1 inch 10 lines to tip of rostrum. Two specimens agree well with the figure and description of Dr. Heller, whose specimens were collected by Natterer in a brook at Camarocös, in Brazil. It is to be noted, however, that the second pair of legs, which he describes as unequal, are, in the specimens from Guiana, very nearly of equal length.

This species was found *in the same stream with the preceding*. The legs are not so robust, and more minutely spinulose, the palm

but little longer than the wrist; fingers slender, without strong teeth on their inner margins; the sides of the carapace, below the lateral hepatic spine, are nearly smooth.

The third and smallest specimen (length to tip of rostrum 1 inch 5 lines) differs from the preceding in having thirteen teeth on the upper margin of the rostrum, the three apical teeth being somewhat smaller and more crowded, as in *P. montezumæ*, Saussure, from the Gulf of Mexico; the wrist of the second pair of legs is not, however, shorter than the palm, as in that species. This I regard merely as a variety of *P. brasiliensis*.

Although it may be well, in the present state of our knowledge, to maintain *P. nattereri* and *P. brasiliensis* as distinct species, the differences existing between them are very slight, scarcely sufficient for specific distinction, if regard be had to the identity of locality and the variations that are known to exist in individuals of a single species.

This and the preceding species are omitted by Smith in his list of the known species of Brazilian Decapoda (Trans. Conn. Acad. ii. p. 40, 1870).

PALEMÓN JELSKII, sp. n. (Plate LXVII. fig. 1.)

Slender, smooth, with the lateral margins of the segments of the abdomen straight. Rostrum very long and slender, reaching beyond the end of the basal scale of the external antennæ, at base rising considerably above the dorsal surface of the carapace, apex slightly directed upward; upper margin with 6-7 teeth towards the base, and three small and crowded at apex, lower margin with 7 teeth. Eyes large. Antennules with the peduncles reaching considerably beyond their basal scales, but not to the extremity of the basal scale of the antennæ; longest flagella very slender, about as long as the animal; antennæ with the peduncles short, not reaching halfway to extremity of basal scale; flagella extremely long and slender, longer than the animal. Second pair of legs filiform, no thicker than the rest, and not much longer than the carapace and rostrum; wrist very long and slender, about twice as long as the hand, which has the palm and fingers equal, fingers hairy. Length about 1 inch 8 lines.

Hab. Guiana (Oyapok) (*Jelski*).

This species is evidently very nearly allied to *P. amazonicus*, Heller, Sitzungsber. l. c. p. 418, pl. ii. fig. 4, 5 (1862); but it differs in the fewer teeth upon the lower margin of the rostrum, which is less raised at the extremity, and the far longer wrist of the second pair of legs.

In the form of the rostrum it slightly resembles *Palæmon ensiculatus*, Smith, Trans. Connect. Acad. ii. p. 26, pl. i. fig. 2 (1869), but differs in the number of the teeth and in the form and proportion of the joints of the second pair of legs.

Two specimens are in the collection.

PALEMÓN GAUDICHAUDII.

Palæmon gaudichaudii, M.-Edwards, Hist. Nat. Crust. ii. p. 400

(1837); Nicolet, in Gay, Historia de Chile, Zool. tom. iii. Crust. p. 218 (1849); Semper, P. Z. S. p. 586 (1868).

Macrobrachium africanum, Spence Bate, P. Z. S. p. 366, pl. xxxi. fig. 3 (1868).

Hab. Peru (Lima) (*Jelski*). Also found in Chili.

Dr. Semper is undoubtedly right in quoting *M. africanum*, S. Bate, as a synonym of this common American species. The rostrum has generally two or three teeth on the lower margin; but in the variety described by Poeppig under the name of *P. cementarius* the rostrum is *entire below*. The synonyms of this variety will run as follows:—

Var. CÆMENTARIUS.

Palæmon cementarius, Pöppig, Archiv f. Naturg. ii. p. 143 (1836); Nicolet, in Gay, Historia de Chile, Zool. iii. Crust. p. 219 (1849).

Palæmon gaudichaudii, M.-Edw. & Lucas, in D'Orbigny, Voy. Amér. Mérid. Zool. vi. Crust. p. 37, pl. xvii. fig. 2 (1843).

Bithynis longimana, Philippi, Wiegm. Arch. f. Nat. xxvi. p. 161 (1860).

Hab. Chili.

EURYRHYNCHUS, gen. nov.

Body not depressed. Rostrum triangular, broad at base, acute, very short, barely reaching the extremity of the eyes. Anterior margin of the carapace with a small spine between the eyes and the rostrum, and another below the point of insertion of the peduncle of the antennæ. Antennæ with a small basal scale. Antennules with three flagella. Outer maxillipeds slender. Second pair of legs nearly as in *Anchistia*. Tarsi of the last three pairs of legs nearly straight, acute.

This genus is distinguished from others of the family *Palæmonidae* with three flagella to the antennules by the very short broad rostrum. It is perhaps most nearly allied to the genus *Harpilius*, Dana, but differs in the form of the rostrum, and the basal scale of the antennæ is much shorter.

EURYRHYNCHUS WRZESNIOWSKII, sp. n. (Plate LXVII. fig. 2.)

Slender; second segment of the abdomen considerably dilated on the sides; third to fifth segments with the postero-lateral angles subacute, directed backward; terminal segment longer than broad, with the sides straight, rounded at the end, and, as well as the appendages of the penultimate segment, ciliated at the extremity. Antennules with the first exposed joint of the peduncle as long as the two succeeding. Antennæ with basal scale acute, rather longer than the peduncle; flagellum very slender. Anterior legs very slender; hand not as long as wrist, palm about equalling fingers in length. Second pair of legs about twice as long as carapace; arm about as long as wrist, hand about twice as long as wrist, palm compressed, fingers about as long as palm, straight, and closely meeting along their inner edges. Length about $7\frac{1}{2}$ lines.

Hab. Cayenne.

Of this small species but two specimens, in an imperfect condition, are in the collection ; and although I dissected the mouth-organs of one specimen, I failed to extract them in a sufficiently perfect condition to admit of their description. The specimens were found in a well.

ISOPODA.

The species of Isopoda described in the present paper belong to the terrestrial or subaquatic *Armadillidæ* and *Oniscidæ*, and the parasitic *Cymothoidæ*. The species of the two former families have been comparatively neglected by modern carcinologists, and many of the continental species are known only from the short and insufficient descriptions of Brandt, Koch, and other authors, based mainly upon differences of colour, which is often a very variable characteristic in individuals of a single species, and, taken alone, will not always suffice to identify the animals of this group. Probably better characters are to be found in the punctulation and granulation of the body, and the form of the antero-lateral lobes of the head and of the segments of the body, and uropoda.

On account of the brevity of many of the earlier descriptions, it is very difficult, or even impossible, to institute comparisons between the different species ; and, as stated above, I have only attempted to do this, in the case of the American species, with others of the same genera inhabiting the American continent.

The mouth-organs, which in the *Amphipoda* afford very valuable characters for the distinction of genera, in the Isopoda (at least in the terrestrial members of the order) do not present any marked peculiarities of structure. M. Lereboullet, one of the best authorities on the subject, has, in the abstract of his valuable memoir on the *Oniscidæ* of the environs of Strasbourg (*Comptes Rendus*, xx. p. 346, 1849), even stated it as his opinion that they are in no case available for characterizing the genera and species.

Family ARMADILLIDÆ.

Subfamily ARMADILLINÆ.

Professor Brandt, in his subdivisions of this family, which are very natural, and were adopted almost without modification by M. Milne-Edwards in the 'Histoire naturelle des Crustacés,' makes two sub-families—(a) *Armadillidia*, containing only his genus *Armadillidium*, and (b) *Cubaridea*, including the genera *Cubaris*, *Armadillo*, and *Diploexochus*. Unfortunately he restricts the genus *Armadillo* to the single species *A. officinalis*, Duméril, which had not been described when Latreille founded the genus, and does not mention at all the earlier *A. vulgaris* of Latreille, which, as described by Milne-Edwards, Lereboullet, and other authors, belongs to his genus *Armadillidium*.

I therefore retain the name of *Armadillo* for those species in which the terminal segment of the abdomen is *truncate at the ex-*

tremity, with the posterior margin straight, transverse. The genus, thus restricted, will correspond to the section β of Brandt, and § 2 of Milne-Edwards in the genus *Armadillidium*, and will include the *Armadillo vulgaris*¹ of Latreille. The genus *Armadillidium* will then be restricted to section α of Brandt, and § 1 of Milne-Edwards in the same genus; while the *A. officinalis*, Duméril, and allied species will constitute a distinct genus, which I propose to designate *Orthonus*², characterized by the straight posterior margins of the segments, which are never revolute.

The following is a tabulated arrangement of the genera to which the species described in the present paper are referred:—

I. ARMADILLIDIA.

Armadillidia, Brandt, Bull. Soc. Nat. Mosc. vi. p. 184 (1833).

Apical joint of the uropoda usually large, inserted at the apex of the basal joint.

ARMADILLIDIUM, Brandt (section α), Bull. Soc. Nat. Mosc. vi. p. 185 (1833); Milne-Edwards (§ 1), Hist. Nat. Crust. iii. p. 181 (1840).

Terminal segment triangular, acute at the extremity.

ARMADILLO, Latr. (part), Hist. Nat. Crust. et Ins. vii. p. 47 (1804).

Terminal segment quadrangular, truncate at the extremity.

II. CUBARIDEA.

Cubaridea, Brandt, Bull. Soc. Nat. Mosc. vi. p. 189 (1833).

Apical joint of the uropoda very small, inserted in the middle of the inner lateral margin of the produced basal joint.

CUBARIS, Brandt, Bull. Soc. Nat. Mosc. Hist. vi. p. 189 (1833).

Armadillo (§ 2), Milne-Edwards, Hist. Nat. Crust. iii. p. 179 (1840).

Posterior margins of the first two or three, or even of all the segments of the body with the posterior margins angulate-excavate on the sides; lateral margins often somewhat revolute. Terminal segment with the posterior margin straight.

ORTHONUS³, gen. nov.

Armadillo, Brandt, *l. c.* p. 191 (1833); nec Latr.

Armadillo (§ 1), M.-Edwards, Hist. Nat. Crust. iii. p. 178 (1840).

Posterior margins of all the segments straight. Lateral margins never revolute.

¹ Messrs. S. Bate and Westwood, in the 'British Sessile-eyed Crustacea,' also use the name *Armadillo* for *A. vulgaris*.

² ὀρθός, straight; ὕψος, wood-louse.

³ The *Armadillo inconspicuous*, from New Zealand, described by me (Cat. New-Zeal. Crust. p. 95, pl. ii. fig. 4, 1876) belongs to this genus.

ARMADILLIDIUM, Brandt.

ARMADILLIDIUM CÆLATUM, sp. n. (Plate LXVII. fig. 3.)

Convex, very finely and closely punctulated and pubescent. Head transverse-oblong, closely encased in the first segment of the body, with the anterior margin reflexed, more prominent in the centre, and slightly sinuated toward the antero-lateral angles, which are not prominent. Eyes minute, placed close to the antero-lateral angles. First segment of the body somewhat larger on the sides than the rest, with the postero-lateral angles acute, the posterior margin slightly excavate; following segments with the posterior margins nearly straight. Segments of the tail short; third to fifth bent backward on the sides; terminal segment broader than long, triangular. Terminal joints of the uropoda transverse when viewed from above. External antennæ with the last two joints (flagellum) together about as long as, but more slender than, the preceding joint, the penultimate much shorter than the terminal joint. Colour generally dark brown. Length about 4 lines, breadth 2 lines.

Hab. Cayenne.

ARMADILLO, Latr.

ARMADILLO VULGARIS.

Oniscus armadillo, Linn. Syst. Nat. (ed. xii.) p. 1062 (1766).

Armadillo vulgaris, Latr. Hist. Nat. Crust. et Ins. vii. p. 48 (1804); Leach, Trans. Linn. Soc. xi. p. 376 (1815); Spence Bate and Westwood, Hist. Brit. Sessile-eyed Crust. ii. p. 492 (1868).

Armadillidium vulgare, M.-Edw. Hist. Nat. Crust. iii. p. 184 (1840); Kinahan, Nat.-Hist. Rev. iv. p. 276, pl. xxi. figs. 3, 9-13 (1857).

Hab. Cayenne.

There are in the collection several examples of a species of *Armadillo* purporting to have been collected at Cayenne, in which, after a careful comparison with specimens of the common British *Armadillo vulgaris*, in the British-Museum collection, I am unable to detect any distinctive peculiarity whatever. They agree in size, punctulation of the body, coloration, &c. With these specimens was sent a single example of a Myriopod, which to the inexperienced eye of a collector might, upon mere superficial examination, be easily mistaken for the same species as the *Armadillo*. My friend and colleague in the Zoological Department, Mr. A. G. Butler, informs me that this is certainly the European *Glomeris marginata*, Olivier. It appears very probable that here (as in the case of *Cymothoa castrum*) the locality of the specimen has been wrongly given. It is difficult to see how, in the case of the *Armadillidii* (terrestrial Isopoda living under stones, in moist earth, &c.), the same species could inhabit Europe and South America.

This species is evidently very closely allied to the *Armadillo pilularis* of Say (Journ. Acad. Nat. Sci. Phil. i. p. 432, 1818), from North America, of which a single specimen, presented by Say, is in the British-Museum collection. In this specimen the terminal

segment is imperfect, and cannot be compared with that of *A. vulgaris*; it is, however, rather more coarsely punctulated, and of a darker colour, variegated with bright yellow markings.

CUBARIS, Brandt.

CUBARIS AFFINIS, sp. n. (Plate LXVII. fig. 4.)

Oblong-oval, convex, with the segments very finely and closely granulated, with a transverse series of much larger granules on each segment of the body, on each side of the middle line. Head transverse-oblong, anterior margin straight, reflexed, and level with the strongly reflexed lateral margins of the first segment of the body. Eyes small, granulated, and placed close to the lateral margins of the head. First three segments of the body with the segments angularly bent backwards on the sides, the angulation being most conspicuous in the first segment. Segments of the tail short, with the upper surface plane, or even slightly concave on the sides, towards the lateral margin. Terminal segment concave above, and with the lateral margins excavated, very nearly as wide at the straight posterior as at the anterior margin. Antennæ with the two terminal joints (flagellum) short, together not as long as the antepenultimate joint; penultimate about one third the length of terminal joint. Inner (terminal) joint of the uropoda minute, inserted upon the inner margin of the longitudinal oblong penultimate joint. Colour dark-brown in spirit; when dry the specimens are white. Length $\frac{1}{3}$ inch, breadth $\frac{1}{6}$ inch.

Hab. Cayenne.

Specimens from Jamaica belonging to this species are in the British-Museum collection.

C. affinis is very nearly allied to *C. cubensis* (*Armadillo cubensis*, De Saussure, Mém. Soc. Phys. et Hist. Nat. Genève, xiv. (?) pl. 481, pl. v. fig. 42, 1858), which, however, has the terminal segment longer in proportion to its width, and the posterior margin of each segment of the body is marked with a transverse groove, which is reflexed and continued along the latero-inferior margin, and is strongly marked on the anterior segments. *A. cacahuamilpensis*, Bilimek (Verh. zool.-bot. Gesellsch. xvii. p. 907, 1867) from Mexico, which is also, I believe, a *Cubaris*, is distinguished by the great breadth of the first segment of the body, &c.

Another American species of this genus, in the British-Museum collection, may be characterized as follows:—

CUBARIS GIGAS, sp. n. (Plate LXVIII. fig. 1.)

Convex oblong-oval, nearly smooth, surface only very minutely granulated, and with only obscure indications of larger tubercles on each side of the middle line. Head transverse, with the anterior margin straight, reflexed at a right angle (as seen in a lateral view) with the upper surface of the head, and (as seen in a dorsal view) also forming a right angle with the lateral margins; antero-lateral lobes wanting. First segment of the body very concave on the sides, with the lateral margins strongly reflexed; all the segments distinctly

flexed backward on the sides, with the posterior margins angulate-excavate. Terminal segment of the tail about as broad as long, with the sides excavated; upper surface flat, with a shallow depression on each side, and a small median pit near the base. Antennæ with the flagellum much shorter than the last joint of the peduncle, with the first joint the shortest. Basal joint of the uropoda (viewed from above) oblong, terminal (apparent lateral) joint quite minute. Colour light grey. Length $10\frac{1}{2}$ lines.

Hab. Nicaragua, S. Juan (*Sullé*). (Coll. Brit. Mus.)

This species is remarkable for its large size; it is larger than any other species of the genus in the British-Museum collection. In the prominent anterior margin of the head, beneath which the antennæ are partly concealed, it resembles the genus *Pyrgoniscus*, Kinahan, which, I may add, is wrongly referred by Dr. Kinahan to the *Porcellionidæ*, and belongs certainly to the *Armadillidæ*, and is nearly allied to *Cubaris*.

Family ONISCIDÆ.

Subfamily ONISCINÆ.

PORCELLIO, Latreille.

De Saussure (*Mém. Soc. Phys. et Hist. Nat. Genève*, xiv. pp. 477, 480), has based the characters of his primary sections of this genus on the form of the segments of the body. These appear to me at once so natural and characteristic, that I adopt them as subgeneric divisions.

Subgenus PORCELLIO.

Postero-lateral angles of all the segments of the body acute, and produced backward.

PORCELLIO CAYENNENSIS, sp. n. (Plate LXVIII. fig. 2.)

Moderately convex, with the segments somewhat laterally produced, and separated from one another toward the lateral margins, everywhere closely and finely granulated, with larger granules, not extending far toward the lateral margins on each segment. Head small, transverse-oblong, deeply encased in the first segment, strongly granulated, with the antero-lateral lobes very prominent, concave above, and subacute at the extremity. Eyes small. All the segments of the body with the antero-lateral angles rounded; the posterior margins excavated on the sides towards the postero-lateral angle, which is acute and produced backward; seventh segment with the posterior margin regularly excavate. Segments of the tail short, with the lateral portion angularly flexed backward, the laterally flexed portion in the third segment equalling one third the width of the segment; terminal segment somewhat T-shaped, longer than broad, subacute at the extremity, and produced beyond the extremity of the basal joint of the uropoda. Antennæ wanting. Colour light-yellow and brown variegated. Length $\frac{1}{2}$ inch, breadth $\frac{1}{4}$ inch.

Hab. Cayenne.

In neither of the two specimens in the collection is the terminal

joint of the uropoda *in situ*. One, which is loose in the tube, and almost certainly belongs to this species, is short, barely twice the length of the basal joint.

As the external antennæ are wanting, it must be a matter of uncertainty whether this species is to be referred to this genus or *Oniscus*.

The *Porcellio spinicornis* and *Porcellio nigra* of Say (Journ. Ac Nat. Sci. Phil. i. pp. 431, 432, 1818), from the United States, belong to this subgenus, as specimens in the British-Museum collection presented by Say, prove. In both species the body is more closely articulated, and the terminal segment more triangular and shorter than in *P. cayennensis*.

Subgenus PORCELLIONIDES.

Postero-lateral angles of the first four segments of the body not acute and not produced backward.

a. *Depressed, with the antero-lateral portion of the head small.*

PORCELLIO JELSKII, sp. n. (Plate LXVIII. fig. 3.)

Oblong-oval, depressed, very finely and closely punctulated, and with scattered but faintly indicated granules, tending to a transverse arrangement on each segment. Head small, transverse; antero-lateral lobes very small, nearly obsolete. Eyes small, black. First four segments of the body with the posterior margins straight, and forming nearly a right angle with the lateral margins; remaining segments with the posterior margins becoming successively slightly more excavated and with the postero-lateral angles subacute. Tail short; third to fifth segments with the posterior margins straight to within a short distance of the postero-lateral angle, which is acute, and directed backwards; terminal segment triangular, rather broader than long, with a slight depression above, with the lateral margins a little excavated, subacute at the extremity, and projecting but very slightly beyond the basal joint of the uropoda. Antennæ slender, with the two terminal joints (flagellum) together about as long as the preceding, the terminal a very little shorter than the penultimate joint. Uropoda with the terminal joint two or three times as long as the preceding, narrow-lanceolate, acute at the extremity. Colour light purplish-brown, variegated with irregular narrow pale markings; lateral margins of the segments without broad yellow bands. Length 5 lines, breadth 2 lines.

Hab. Peru; Guiana.

A large series of specimens of this species, which appears to be common, is in the collection.

This species differs from *P. chilensis*, Dana (nec Gay), in the joints of the flagellum of the external antennæ (in that species the first is nearly twice the length of the second joint), the more deeply concave seventh segment of the body, and the longer rami of the uropoda—from *P. cubensis* and *P. sumichrasti*, De Saussure, from Cuba (which it somewhat resembles in the form of the terminal

segment), in the much smaller antero-lateral lobes of the head—from *P. granarus* and *P. liliputanus*, Gay, from Chili, in the nearly equal joints of the flagellum of the external antennæ, &c.

In a single specimen from Peru, the terminal segment is transverse-triangular, nearly of the form of that of *P. poeyi*, De Saussure, from Cuba; but as this exactly agrees with the other specimens of the same series in other particulars, I do not regard this as more than an individual peculiarity.

PORCELLIO FLAVO-VITTATA, sp. n. (Plate LXVIII. fig. 4.)

More oblong in form, and a little more convex than the preceding species, with the granulations upon the body more distinctly marked, the sides of the body straighter. Colour blackish brown, variegated as in the preceding species. Lateral margins of the segments of the body with a marginal yellow band. Length 4 lines, breadth nearly 2 lines.

Hab. Cayenne.

This species is very nearly allied to the preceding; yet the differences above mentioned appear generally constant. In one specimen only, without antennæ and uropoda, and which might, if in better condition, have proved distinct, is the lateral marginal yellow band entirely absent.

All the specimens are unfortunately much mutilated.

b. *Convex, with the antero-lateral lobes of the head prominent.*

PORCELLIO AZTECUS.

Porcellio aztecus, De Saussure, Mém. Soc. Phys. et Hist. Nat. Genève, xiv. (part 2) p. 479, pl. v. fig. 38 (1858).

Porcellio mexicanus, De Saussure, *l. c.* p. 479, pl. v. figs. 39, 40 (1858).

Hab. Peru (Lima).

In the good series of specimens of this species in the collection, I have observed between younger and fully-matured animals just the differences that are instanced by De Saussure as existing between *P. aztecus* and *P. mexicanus*, which I am therefore inclined to consider different ages of one and the same species, well characterized by its large size, convex, finely and uniformly granulated body, the prominent antero-lateral lobes of the head, the form of the terminal segment, uropoda, etc.

Porcellio interruptus, Heller (Reise der Novara, Crust. p. 136, 1865) from Chili, which, on account of the prominent antero-lateral lobes of the head, probably belongs to this section, differs in having the four anterior segments of the body much narrower than the preceding.

PHILOUGRIA, Kinahan¹.

To this genus I refer a species obtained in Peru and Guiana, and always occurring in the collection in the same tubes with *Porcellio*

¹ According to Messrs. Spence Bate and Westwood = *Itea*, Koch, a name employed by Linnaeus for a genus of plants. I regret that I have not myself had

jelskii. It agrees well with *Philougria* in the transverse front, in which the median and antero-lateral lobes are obsolete, the subulated flagella of the external antennæ, and the exposed uropoda, which have the inner ramus long, more than half the length of the outer.

PHILOUGRIA NITIDA, sp. n. (Plate LXIX. fig. 3.)

Oblong-oval, shining, very convex; segments closely articulated, with minute scattered granules. Head transverse, with the anterior margin straight, without antero-lateral lobes. Eyes black, granulated, and extending along the whole length of the lateral margins. Segments of the body subequal, lateral margins with a raised marginal line; posterior margins of the first three segments straight, and forming a right angle with the lateral margins; last four segments slightly excavate on the sides, postero-lateral angles acute. Third, fourth, and fifth (exposed) segments of the tail with the lateral part bent backward, almost at a right angle to the median portion of the segment. Terminal segment much broader than long, obtusely triangular, with a well-marked depression between the bases of the uropoda (which, however, is more conspicuous in some specimens than in others). Antennæ shorter than the body, very slender; flagellum three-jointed, and terminating in a long slender transparent filament. Legs very slender, with short hairs on the last three joints. Basal joints of the uropoda very short, terminal joint more than three times as long as the basal joint, acute. Colour purplish-brown; with irregular yellow spots and patches. Length $\frac{1}{3}$ inch, breadth $\frac{1}{5}$ inch.

Hab. Peru, Guiana.

Distinguished by its convex, shining appearance, the form of the head and of the terminal segment, and of the far longer slender terminal filament of the flagella of the external antennæ, from the known species of the genus.

The specimens from Guiana generally appear rather more coarsely granulated.

Subfamily *LIGINÆ*.

LIGIA, Fabricius.

LIGIA BAUDINIANA?

? *Ligia baudiniana*, Milne-Edw. Hist. Nat. Crust. iii. p. 155 (1840).

Hab. Cayenne.

As this species is only known to me by the short description of Milne-Edwards in the 'Histoire naturelle des Crustacés,' I subjoin the following description of the specimens from Cayenne.

an opportunity of consulting Koch's account of the German species of *Oniscidae*, either in his 'Continuation' of Panzer's 'Deutschlands Insecten,' or in his 'Deutschlands Crustaceen.'

Dr. von Martens (Zool. Record for 1868, p. 522), points out that the name *Philougria* should be spelt *Philygria*. As, however, the term *Philygria* was used in 1843 by Stenhammar for a genus of Dipterous insects, I retain the designation *Philougria*, albeit etymologically incorrect.

Body narrow-oblong, or slightly oblong-oval, with scattered granules, which are disposed in transverse series, only upon the posterior margin of each segment. Head transverse. Eyes large, black, of considerable width, and occupying the whole length of the lateral margin. First three or four segments of the body with the posterior margins straight, the succeeding segments with the posterior margins becoming gradually more concave, and the postero-lateral angles more acute. Segments of the tail with the postero-lateral angles long, narrow, acute, and flexed backwards; terminal segment transverse-oblong, posterior margin tridentate, nearly straight to within a short distance of the postero-lateral angle, then slightly sinuated, postero-lateral angle prominent, triangular, acute. Peduncle of the external antennæ with the terminal very little longer than the penultimate joint, flagellum 32-36-jointed. Rami of the uropoda a little unequal, longer than the peduncle, inner with a small slender terminal appendage. Length nearly 1 inch, breadth 5 lines.

The specimens in the collection have longer antennæ than those described by Milne-Edwards, reaching in one nearly, in another quite, to the extremity of the body. The length of the antennæ cannot, however, always be depended upon as a constant specific character; and the number of joints is sometimes variable. The slender styli-form appendage to the inner ramus of the uropoda is found in other species of the genus, as, for example, the typical *L. aquatica*, where it is quite minute. It is absent in many specimens, and is probably very easily disarticulated and lost.

This species resembles the Californian *L. occidentalis*, Dana, U.S. Expl. Exp. xiv. Crust. ii. p. 742, pl. xlix. f. 7 (1853); but the teeth of the terminal segment are more prominent; the antennæ are also much longer.

The *Ligia stimpsoni*¹, from California, is at once distinguished by its very broad flat body.

De Saussure (Mém. Soc. Phys. et Hist. Nat. Genève, p. 476) found specimens in Cuba which, he says, are not to be distinguished from *L. baudiniana*; and specimens collected at Rio Janeiro by Dr. Cunningham are referred by Mr. Spence Bate to this species (Ann. & Mag. Nat. Hist. i. p. 443, 446, 1868). Specimens from Rio de Janeiro are also in the British-Museum collection.

Family CYMOTHOIDÆ,

CYMOTHOA, Fabricius.

CYMOTHOA ŒSTRUM.

? *Oniscus œstrum*, Linn. Syst. Nat. ed. xii. p. 1059 (1766); Fab. Syst. Ent. p. 294 (1775).

Cymothoa œstrum, Fab. Ent. Syst. ii. p. 505 (1793)?; Leach, Trans. Linn. Soc. xi. p. 372 (1815); Desm. Consid. Crust. p. 307,

¹ I propose this name for the *Ligia dilatata* of Stimpson (Proc. Boston Soc. Nat. Hist. vi. p. 88, 1856-59; and Journ. Boston Soc. Nat. Hist. vi. p. 507, pl. xxii. fig. 8, 1857), the name *Ligia dilatata* having been preoccupied by Brandt for a South-African species of the genus (Bull. Mose. vi. p. 172, 1833).

pl. xlvii. figs. 6, 7 (1825); M.-Edw. Hist. Nat. Crust. iii. p. 269 (1840); Règne Animal de Cuvier (éd. Crochard), Crust. pl. lxxv. fig. 1; Spence Bate and Westwood, Hist. Brit. Sessile-eyed Crust. ii. p. 274, footnote (1868).

Hab. Peru.

To this species I refer two specimens in the collection, numbered as coming from Peru (the largest an adult female, length 1 inch 5 lines), which agree in every respect with the specimens in the British-Museum collection, described by Leach as *Cymothoa astrum*, from European seas. Like these specimens they have the anterior lobes of the first segment of the body broad, subtruncate, and produced to a level with the anterior margin of the head, which appears straight in a dorsal view, but is inflexed, and conceals the bases of the superior antennæ; the joints of the peduncle slender, not dilated; the thigh-joint of the fourth pair of legs produced in the form of an acute tubercle, which is most prominent in the younger animal, the same joint of the following legs greatly dilated posteriorly; the terminal segment transverse, the rami of the uropoda very small, subequal, &c. It is very improbable that the same species should inhabit the seas of Peru and Europe; and I think it safer to conclude, as there are some species in the collection avowedly from the Mediterranean, that the label in this instance, as in the case of *Armadillo vulgaris*, has been misplaced, and that the true habitat of these specimens is European. No particulars are given of the fish on which they were parasitic.

The West-Indian *C. dufresnii*, Leach, is very nearly allied to this species; but the anterior lobes of the first segment of the body are not quite so squarely truncate, and the lobe of the thigh-joint of the fourth pair of legs is somewhat less prominent and acute.

ANILOCRA, Leach.

ANILOCRA LÆVIS, sp. n. (Plate LXVIII. fig. 6.)

Body regularly convex, oval; first six segments of the tail of equal width, terminal segment considerably broader. Head small, narrowed anteriorly, front narrowed, rounded, inflexed, and concealing the bases of the inner antennæ. Eyes black, oblong. First segment of the body with the antero-lateral angles not at all prominent, postero-lateral angles rounded and entire; second to sixth segments with the posterior margins nearly straight; seventh segment with the posterior margin regularly excavate, the postero-lateral angle broad, obtuse and rounded. Segments of the tail rounded on the sides, terminal segment with the posterior margin rounded. Epimeræ or coxæ small, of the second, third, and fourth segments obtuse, of the fifth to seventh segments subacute and somewhat spiniform. Superior (inner) antennæ nearly reaching to the anterior margin of the first segment of the body, eight-jointed; first three joints (peduncle) larger than the succeeding. Inferior antennæ 9-jointed, nearly reaching to the posterior margin of the first segment of the body, peduncle five-jointed, the fifth joint the longest. Rami of the

uropoda lamellate, compressed, oval, the inner slightly the larger. Length 1 inch 7 lines, breadth $7\frac{1}{2}$ lines.

Hab. Martinique; Peru.

A specimen from each locality is in the collection.

This species appears to be nearly allied to, but distinct from *A. laticauda*, Milne-Edwards (Hist. Nat. Crust. iii. p. 259, 1840), from the West Indies, and *A. mexicana*, De Saussure (Mém. Soc. Phys. et Hist. Nat. Genève, xiv. part 2, p. 484, 1858), from the Gulf of Mexico. From the latter species it differs in the form of the first segment of the body, which in *A. mexicana* has the latero-anterior margins provided with a small tubercle, and the latero-posterior margins notched (the epimeræ also, in this species are uniform), from *A. laticauda* in the much longer internal antennæ and in the length of the rami of the uropoda, the inner being equal to or shorter than the outer in *A. laticauda*.

Old-world Species.

DECAPODA.

ACANTHONYX, Latr.

The following is a species hitherto only known by the name (without description) applied to it by White in the 'List of Crustacea in the Collection of the British Museum,' p. 11 (1847).

ACANTHONYX ELONGATUS. (Plate LXIX. fig. 1.)

Carapace smooth, without hairs. Gastric and genital regions convex, gastric region with two strong tubercles, lateral margins slightly excavated, with the median tooth obscure and nearly equidistant from the prominent obtuse anterior and the obtusely triangular posterior tooth. Front and rostrum obliquely deflexed, with the supraocular and rostral spines prominent. Anterior legs (in the male) very much enlarged, wrist obscurely ridged, hand compressed, fingers, when closed, meeting only at tips. Ambulatory legs wanting. Abdomen (of male) narrow, six-jointed, the fourth and fifth joints coalescent. Length to end of rostrum, 1 inch 1 line.

Hab. Red Sea.

A single specimen is in the British-Museum collection.

ANOMURA.

CLIBANARIUS, Dana.

CLIBANARIUS MISANTHROPUS.

Pagurus misanthropus, Risso, Crust. des Environs de Nice, p. 56 (1816); Hist. Nat. Eur. mérid. v. p. 41 (1826); Roux, Crust. de la Méditerranée, 3^e livr. pl. xiv. fig. 1, 2 (1828); M.-Edw. Hist. Nat. Crust. ii. p. 228 (1837).

Pagurus labillardieri, Audouin, Expl. d. Planches de Savigny, Egypte, Crust. pl. ix. fig. 2, p. 89 (1809).

Hab. —?

A good series of specimens is in the collection.

I am in some doubt whether this species be the *C. misanthropus* of Risso and of M. Milne-Edwards, who apparently copied Risso's description; but it is almost certainly the species figured under this name by Roux. It differs only in having the tarsi striped with red upon a white instead of a blue ground; but this latter colour is in all probability evanescent; indeed in one or two specimens from the Spanish coast in the collection of the British Museum, some very faint traces of the blue coloration are still discernible.

Clibanarius oculatus, Fabricius, as described by M. Milne-Edwards, appears to differ in having the tarsi much shorter than the penultimate joint. They are coloured with longitudinal red and yellow lines.

ISOPODA.

ARMADILLIDÆ.

Subfamily TYLOSINÆ.

TYLOS, Latreille.

TYLOS LATREILLEI.

Tylos latreillei, Audouin, Expl. d. planches de Savigny, Egypte, Crust. pl. xiii. fig. 1, p. 96 (1809); M.-Edw. Hist. Crust. iii. p. 188 (1840); Règne Animal de Cuvier, Crust. pl. lxx. bis, fig. 2; Heller, Reise der Novara, Crust. p. 137 (1865); Verh. zool.-bot. Gesellsch. Wien, xvi. p. 732 (1866).

Tylos armadillo, Latr. Règne Animal de Cuvier, iv. p. 142 (1829); Guérin-Méneville, Iconogr. Règne Animal, Crust. p. 35. pl. xxxvi. fig. 4.

Hab. Odessa.

The colour of the specimens in the collection is light brown, length $6\frac{1}{2}$ lines, breadth 3 lines. The lateral margins of the coxæ and segments of the tail are fringed with very short hairs. This species appears to be common in the Mediterranean region, having been recorded from Egypt, Algeria, Gibraltar, Lesina, &c.

The specimens I refer to *Tylos latreillei* differ from specimens of *T. capensis*, Krauss, in the British-Museum collection, from Simon's Bay, South Africa, in their much smaller size (the largest specimen of *T. capensis* is one inch in length), and in the form of the epimeral piece or coxa of the sixth pair of legs; in *T. latreillei* the postero-lateral angle of this joint is rounded; in *T. capensis* the posterior margin is straight, and forms a right angle with the posterior margin. Moreover in *T. capensis* the segments are nearly smooth, or only very finely granulated; in *T. latreillei* they are rather strongly punctulated and rugose. In both species the postero-lateral angle of the coxa of the last pair of legs is acute.

TYLOS GRANULATUS, sp. n. (Plate LXIX. fig. 2.)

Convex, coarsely granulated, the granules on the dorsal surface of the body separated by linear smooth intervening spaces; the process of the epistoma separating the basal joints of the antennæ, and the peduncles of the antennæ themselves, very strongly granulated. Postero-lateral angles of the first segment of the body strongly flexed backward and acute. Terminal segment of the tail trans-

versely oblong, very much broader than long, and with a slightly reflexed posterior margin. Last four joints of the legs clothed with very stiff short hairs; the epimeral piece or coxa of the last pair of legs with the postero-lateral angle obtuse. Length of largest specimen about $\frac{3}{4}$ inch.

Hab. Kiogo, Japan; and Borneo. (Coll. Brit. Mus.)

This species is distinguished by the granulated body and the obtuse postero-lateral angle of the epimera of the last pair of legs.

Tylos spinulosus, Dana, from Fuegia, differs, as its name imports, in its spinulous body from all the foregoing species.

Subfamily ARMADILLINÆ.

ARMADILLIDIUM, Brandt.

ARMADILLIDIUM PUSTULATUM.

Armadillo pustulatus, Duméril, Dict. Sci. Nat. iii. p. 117 (1816); Desmarest, Consid. gén. des Crust. p. 325, pl. xlix. fig. 6 (1825).

Armadillidium pustulatum, M.-Edw. Hist. Nat. des Crust. iii. p. 181 (1840).

Armadillidium brunneum, Brandt, Conspect. Monogr. Onisc. p. 185 (1832).

? *Armadillidium zenckeri*, Brandt, l. c. p. 185 (1832).

? *Armadillidium pictum*, Brandt, l. c. p. 186 (1832).

Hab. Moldavia.

The two specimens in the collection which I refer to this species are convex, oblong-oval, very closely and finely punctulated, and with distinct scattered granules, of which there is a transverse series on the posterior margin of each segment, the granules showing elsewhere a tendency to a similar arrangement. Head transverse-oblong; eyes small, black, granulated; channels for the reception of the bases of the external antennæ deep and well defined. First two segments of the body with the posterior margins angulated on the sides; first segment with the postero-lateral angles subacute. Segments of the tail short, lateral margins straight and forming nearly a right angle with the posterior margins; terminal segment longer than broad, triangular, with the sides straight, subacute at the extremity, flat above. Antennæ with the two terminal joints (flagellum) together not as long as the antepenultimate joint, subequal. Uropoda, when viewed from above, with the basal joint very small, scarcely visible; terminal joint almost completely filling the space between the terminal and penultimate segments. Colour steel gray, variegated with yellowish white; all the segments with narrow pale margins. Length $10\frac{1}{2}$ lines, breadth about 5 lines.

This species is distinguished by its large size, closely punctulated and distinctly granulated body, and by the form of the terminal segment. Specimens, between which I cannot find differences sufficient to warrant their specific separation, are in the British Museum, from France, Tunis, Tangiers, Malta, and Sardinia.

The species figured by Guérin-Meneville as *A. pustulatum* (Iconogr. R. A. pl. xxxi. fig. 9) is a species of the restricted genus *Armadillo*, perhaps *A. vulgaris*.

PORCELLIO, Latr.

PORCELLIO SWAMMERDAMII.

Porcellio swammerdamii, Audouin, Explic. des Planches de Savigny, Egypte, Crust. pl. xiii. fig. 6, p. 98 (1809).

Porcellio alexandrinus, Brandt, Conspectus Monogr. Onisc. p. 180 (1832); M.-Edw. Hist. Nat. Crust. iii. p. 172 (1840).

Hab. Egypt.

In the single adult example (length nearly 5 lines) the colour is deep blackish-brown; in this specimen the flagella of the external antennæ are missing. The other specimens are much smaller, and of a much lighter brown colour. They agree well with Savigny's figure of the species, except that the granules are less strongly marked.

Subgenus PORCELLIONIDES.

PORCELLIO HISPIDA, sp. n. (Plate LXVIII. fig. 5.)

Convex, elongate, oval-oblong, everywhere closely covered with minute stiff hairs (which under a low magnifying-power might be mistaken for granules). Head small, transverse, antero-lateral lobes broad, prominent, rounded, and obtuse. Segments of the body all rounded at the junction of the anterior and lateral margins, postero-lateral angles of the first three segments of the body obtuse and rounded, of the remaining segments subacute; posterior margin of the seventh segment concave, and slightly sinuated on the sides. Segments of the tail short and bent backwards on the sides, postero-lateral angles acute; terminal segment triangular, with the sides slightly concave, subacute at the extremity. Antennæ short, the last two joints (flagellum) together shorter than the antepenultimate joint, the terminal joint a little longer than the penultimate joint. Uropoda short; the terminal about twice the length of the penultimate joint, and projecting for about half its length beyond the terminal segment. Colour light brown and light yellow variegated. Length $5\frac{1}{2}$ lines, breadth $2\frac{1}{2}$ lines.

Hab. Mongolia.

This species is remarkable for the minute stiff hairs which clothe the narrow oblong body, the small size of the rami of the uropoda, &c.

Family CYMOTHOIDE.

LIRONECA, Leach.

LIRONECA DAURICA, sp. n. (Plate LXIX. fig. 4.)

Broadly ovate, depressed. Head very small; front prominent, rounded, and concealing the bases of the antennæ, but not inflexed. Eyes small, red. First segment of the body rather the longest, anterior margin concave, with scarcely any trace of antero-lateral lobes. Following segments with the coxæ small, and inserted in front of the antero-lateral angle of the segment, postero-lateral angles of all the segments rounded; last segment very short, and almost semicircularly excavated. Tail small, of equal width throughout, not half the width of the third segment of the body; terminal segment but little broader than long, smooth, with the posterior margin

rounded. Rami of the uropoda subequal, narrow, oblong-oval, and about reaching to the posterior margin of the terminal segment. Antennæ very slender; superior about half as long as the inferior, which just reach to the anterior margin of the first segment of the body. These latter are eight-jointed, the third joint appearing twice as long as the preceding, as if consisting of two coalescent joints, superior antennæ eight-jointed. All the legs with the thigh-joints oblong, and very little dilated posteriorly, the last four pairs with the postero-superior margins slightly produced and carinated. Length about 1 inch, breadth $7\frac{1}{2}$ lines.

Hab. Dauria, R. Onon.

A single specimen (female with ova) is in the collection.

In this species the coxæ are inserted in the angles between the segments of the body, in front of the anterior margin of each segment, not exterior to the lateral margin of the segment, as is usually the case.

It is at once distinguished from the *Cymothou amurensis*, Gerstaecker, Mém. Acad. Imp. Sci. St.-Petersbourg, viii. p. 278 (1859) by the slender femora, non-inflexed front, &c.

LIRONECA LATICAUDA, sp. n. (Plate LXIX. fig. 5.)

Ovate, slightly gibbous, moderately convex. Head small, front inflexed, and concealing the bases of the antennæ. First segment of the body with the anterior margin deeply excavate, antero-lateral lobes prominent and obtuse. Coxæ of the following segments oblong and inserted externally to the lateral margin of the segment; in the first, second, and third segments the lateral margin is straight; in the fourth to seventh it is excavated. Terminal segment transverse, with the posterior margin rounded. Rami of the uropoda short, ovate, the outer twice as large as the inner, but not reaching halfway to the posterior margin of the segment. Length nearly 1 inch 3 lines.

Hab. Manchuria.

(Coll. Brit. Mus.)

This species cannot be confounded with the foregoing. It is far more closely allied to the *Lironeca novæ-zealandiæ*, described by me (Cat. New-Zeal Crust. p. 106, pl. iii. fig. 2, 1876), which it altogether resembles in external appearance; in that species, however, the epimeræ are longer in proportion to their width, and the rami of the uropoda subequal. In both *L. laticauda* and *L. novæ-zealandiæ* the posterior margin of the thigh-joint of the last four pairs of legs is produced at its proximal extremity and forms a strong tubercle. In *L. emarginata*, Bleeker, Act. Soc. Indo-Néerl. ii. p. 27, pl. i. fig. 5 (1857), from Batavia, another nearly allied species, the front is produced beyond the bases of the antennæ, and the posterior margin of the thigh-joints of the legs is straight.

ANILOCRA, Leach.

ANILOCRA TRICHIURA. (Plate LXIX. fig. 6.)

Anilocra trichiura, List Crust. Brit. Mus. p. 108 (1847), sine descr. Narrow-oblong, oval, convex. Head small, with the anterior

margin inflexed, appearing nearly straight in a dorsal view; posterior margin with a small, median, rounded lobe received into a corresponding emargination in the anterior margin of the first segment of the body. First segment of the body longer than the succeeding. Last segment of the tail longer than broad, narrowed to its extremity, which is subacute. Coxæ transverse and obtuse at their posterior extremity. Legs short, with the thigh-joints not dilated. Uropoda very slender; outer ramus very long, more than twice the length of the inner. Length 1 inch.

Hab. Mauritius (R. Templeton). (Coll. Brit. Mus.)

This species is at once distinguished by the form of the rami of the uropoda. The habitat, which is given as "Indian Ocean," in the 'List of Crustacea,' *l. c.*, is marked "Mauritius" on the label attached to the specimen.

EXPLANATION OF THE PLATES.

PLATE LXVI.

- Fig. 1. *Clibanarius cayennensis*, p. 657, natural size.
 2. ——— *carnescens*, p. 658, natural size.
 3. Carapace, frontal region, eyes and antennæ of *Clibanarius speciosus*, p. 658, magnified about twice the natural size.
 3 a. Hand of the same, magnified twice natural size.
 4. *Clibanarius lordi*, p. 658, natural size.
 4 a. Carapace, frontal region, eyes and antennæ of the same, magnified twice the natural size.

PLATE LXVII.

- Fig. 1. *Palaemon jelskii*, p. 661, lateral view, magnified about twice the natural size.
 1 a. Carapace, frontal and antennal region of the same, dorsal view, magnified twice the natural size.
 1 b. Terminal segment and uropoda, magnified.
 2. *Euryrhynchus wrzesniowskii*, p. 662, lateral view, magnified four times the natural size.
 2 a. Carapace, frontal and antennal region of the same, magnified four times the natural size.
 2 b. Terminal segment and uropoda, magnified.
 3. *Armadillidium celatum*, p. 665, dorsal view, magnified twice the natural size.
 3 a. Dorsal view of head.
 3 b. Dorsal view of tail-segments of the same, further magnified.
 4. *Cubaris affinis*, p. 666, lateral view, magnified twice the natural size.
 4 a. Dorsal view of head.
 4 b. Dorsal view of tail-segments of the same, further magnified.

PLATE LXVIII.

- Fig. 1. *Cubaris gigas*, p. 666, lateral view, natural size.
 1 a. Head viewed from above.
 1 b. Head viewed from below, showing position of the antennæ.
 1 c. Segments of the tail, dorsal view, all further magnified.
 2. *Porcellio cayennensis*, p. 667, dorsal view, magnified twice the natural size.
 2 a. Front view of head.
 2 b. Segments of the tail, dorsal view, further magnified.
 3. *Porcellio jelskii*, p. 668, dorsal view, magnified twice the natural size.

- Fig. 3 *a*. Head and antennæ of the same, dorsal view.
 3 *b*. Tail-segments of the same, dorsal view, both further magnified.
 4. *Porcellio flavo-vittata*, p. 669, dorsal view, magnified twice the natural size.
 4 *a*. Head and antennæ of the same, inferior view.
 4 *b*. Segments of the tail, dorsal view, both further magnified.
 5. *Porcellio hispidus*, p. 676, dorsal view, magnified twice the natural size.
 5 *a*. Tail-segments of the same, further magnified.
 6. *Anilocra levis*, p. 672, natural size.
 6 *a*. Front and antennæ, magnified.
 6 *b*. One of the legs of the last pair.
 6 *c*. Uropoda, further magnified.

PLATE LXIX.

- Fig. 1. *Acanthonyx elongatus*, p. 673, natural size.
 2. *Tylos granulatus*, p. 674, lateral view, natural size.
 2 *a*. Head and antennæ, dorsal view.
 2 *b*. Segments of the tail, dorsal view, both further magnified.
 3. *Philougria nitida*, p. 670, dorsal view, magnified twice the natural size.
 3 *a*. Head and antennæ, dorsal view.
 3 *b*. Tail-segments, dorsal view, both further magnified.
 4. *Lironeca daurica*, p. 676, dorsal view, natural size.
 4 *a*. Head and antennæ, dorsal view.
 4 *b*. One of the legs of the first pair.
 4 *c*. Uropod: all further magnified.
 5. *Lironeca laticauda*, p. 677, dorsal view, natural size.
 5 *a*. Head and antennæ, inferior view.
 5 *b*. One of the legs of the first pair.
 5 *c*. Uropod: all further magnified.
 6. *Anilocra trichiura*, p. 677, dorsal view, natural size.
 6 *a*. One of the legs of the first pair, magnified.

November 6th, 1877.

Arthur Grote, Esq., V.P., in the Chair.

The Secretary read the following reports on the additions to the Society's Menagerie during the months of June, July, August, and September 1877:—

The total number of registered additions to the Society's Menagerie during the month of June was 166, of which 87 were by birth, 35 by presentation, 25 by purchase, 1 by exchange, and 18 were received on deposit. The total number of departures during the same period by death and removals was 92.

The most noticeable additions during the month of June were as follows:—

1. A White-cheeked Gibbon (*Hylobates leucogenys*), presented by W. H. Newman, Esq., H.B.M. Consul, Siam, Bangkok, June 2nd, and kindly brought to this country under the care of Mr. A. R. Houghton in the steamship 'Agamemnon.' The White-cheeked Gibbon was described many years ago in the Society's 'Proceedings' (P. Z. S. 1840, p. 20) by the late Mr. Ogilby, upon an animal which had been living in the Society's Menagerie, and of which the exact habitat was unknown. The typical specimen is now in the British

Museum. So far as I know, no second individual of this well-marked species of *Hylobates* has since occurred; it is therefore of the greatest interest to have obtained a specimen from a distinct locality¹. Our present individual, which is a young male, seems to agree in every respect with Mr. Martin's description and figure (Nat. Hist. of Man and Monk. p. 445).

Mr. Smit's figure (Plate LXX.) will, I trust, serve to make this interesting species better known.

2. A Tibetan Partridge (*Perdix hodgsoniæ*, Gould)², presented by Monsieur J. M. Cornély, of Tours, C.M.Z.S., on the 16th June, being, so far as I am aware, the first example of this fine representative of this well-known species that has been received by the Society. A second specimen of the same bird has since been purchased from Mr. W. Jamrach, from whom, I believe, M. Cornély obtained his specimen.

3. A young male Hippopotamus, received June 20th, having been purchased of the Royal Zoological Society of Amsterdam for the sum of £800.

The original pair of Hippopotamuses, obtained from the Viceroy of Egypt (the male in 1851, and the female in 1854), being both now well advanced in years and having ceased to breed, the Council thought that it would not be right to miss an opportunity of obtaining a mate for the Society's young female of this species, born in the Gardens on the 5th November, 1872.

The Council accordingly entered into an agreement with the sister Society at Amsterdam for the acquisition of the young male Hippopotamus, which was born in their gardens on the 3rd of August, 1876, and which arrived safely in this country under the care of Mr. Hegt, the subdirector of their Gardens, on the 20th June last. The young animal, which now measures about 2 feet 6 inches in height, has hitherto been fed nearly exclusively on Goat's milk, but is now beginning to take more substantial diet, and appears to be in every way thriving.

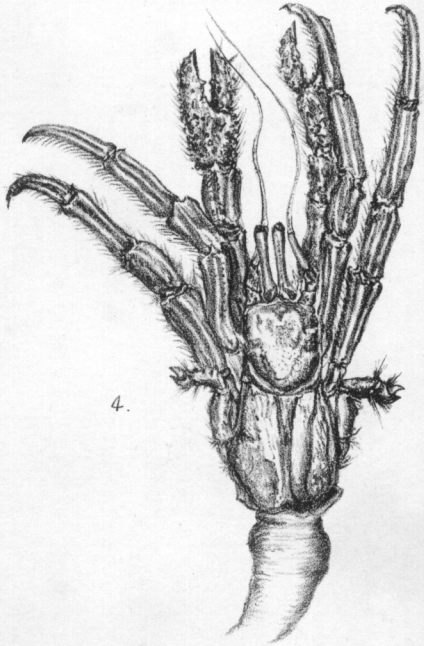
4. A fine example of the black variety of the common Leopard (*Felis pardus*), from Lahore, Malay peninsula, presented by Sir Harry St. George Ord, C.B., F.Z.S.

5. Twenty Common Boas (*Boa constrictor*), produced alive by one of the Boas in the Society's Gardens on the 30th June. This is the first occasion in which this Serpent has bred in the Society's Gardens; and, so far as I am aware, the fact of the Boa producing living ones was not certainly known. The young Boas are about 15 inches in length, and are lively and active, threatening to bite if touched. They are already beginning to feed; and we have good hopes that some of them, at least, may be reared³.

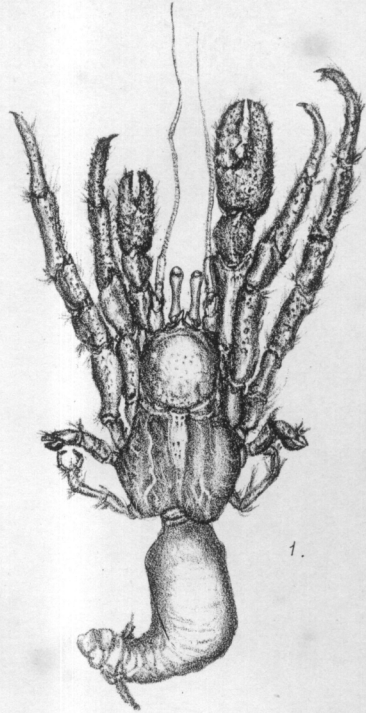
¹ The notice given by Mr. Blyth (P. Z. S. 1841, p. 63) of the supposed occurrence of this species on the Ghauts of Malabar is, no doubt, founded on some error.

² See Gould's 'Birds of Asia,' pt. ix. May 1, 1857, for a figure of this species.

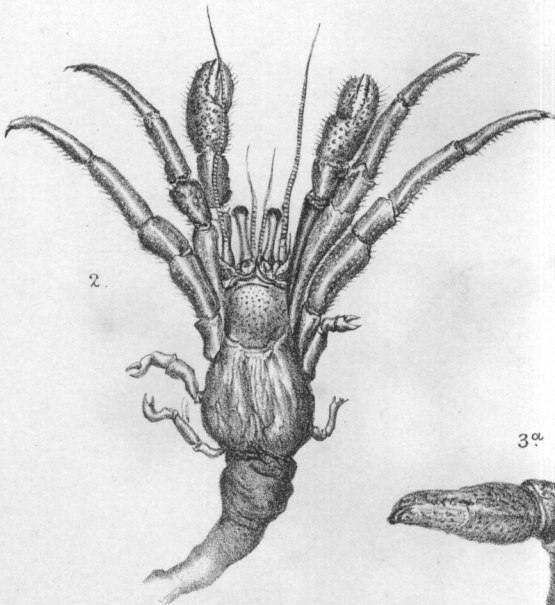
³ P.S. (November 6th).—All of these Boas, except one, are still alive and in good condition.



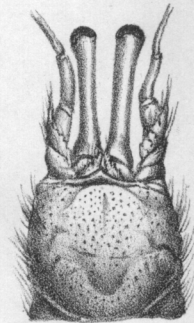
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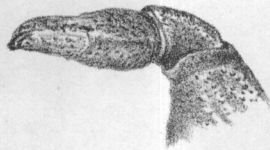
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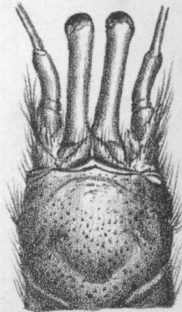
2.



3.



3^a



4^a

J. Casey del. et lith.

Mintern Bro^r imp.

NEW SPECIES OF CLIBANARIUS.

