

smaller; but the differences are scarcely sufficient to necessitate the bestowal of a separate specific name.

#### EXPLANATION OF PLATE XVI.

- Fig. 1.* *Paratymolus bituberculatus*, magnified about 4 diameters.  
*Fig. 2.* First pair of legs of the same, magnified 7 diameters.  
*Fig. 3.* *Paratymolus latipes*, magnified 4 diameters.  
*Fig. 4.* Abdomen of the same.  
*Fig. 5.* Under view of the anterior portion of the body of the same, magnified 8 diameters.

XXX.—*On a Collection of Crustacea from the Malaysian Region.*—Part II. *Telphusidea, Catometopa, and Oxystomata.* By EDWARD J. MIERS, F.L.S., F.Z.S.

[Plate XIV.]

[Continued from p. 239.]

#### *TELPHUSIDEA.*

##### *Telphusa Larnaudii*, A. M.-Edwards.

Indo-Malayan seas. A male is in the collection without special indication of locality. Both this form and *T. denticulata* are so nearly allied to *T. fluviatilis* that I think it is probable that the examination of a sufficiently large series of specimens would show their identity.

##### *Telphusa sumatrensis*, sp. n. (Pl. XIV. figs. 1, 2).

Carapace broader than long, rather convex in its anterior portion, and nearly smooth. Front more than one third the greatest width of the carapace, with the anterior margin straight; its upper surface is punctulated, but not granulated or rugose. Some faintly indicated rugosities are visible on the carapace toward the epibranchial tooth, which is very small—scarcely distinguishable from the granulated line which defines the antero-lateral margins. The postfrontal crest is nearly obsolete, but, although scarcely distinguishable, is interrupted and divided into two median and two lateral portions, nearly as in *T. Larnaudii*. The chelipedes are smooth, not granulated or rugose, but slightly punctulated; the carpus is armed with two spines on its inner margin, of which the anterior is the largest; the fingers of the larger hand (in the male) are slightly arcuated, leaving an hiatus

when closed, and minutely toothed. Ambulatory legs and male postabdomen as in *T. Larnaudii*. Length of largest male 7 lines, breadth 9 lines.

W. Sumatra, Agam (two males and two females).

This species differs from *T. Larnaudii* in the not granulated or rugose carapace and chelipedes and the obsolescence of the postfrontal ridge and lateral epibranchial tooth. If it should prove to be merely a young state, it would throw doubt on the distinctness not only of *T. Larnaudii*, but of several other species of this very difficult genus. *T. philippina*, v. Martens, differs in possessing an epibranchial tooth and in the form of the postabdomen of the male; *T. picta* of the same author, in the form of the spines on the inner margin of the wrist and the denticulation of the fingers.

*Telphusa sinuatifrons*, M.-Edwards?

Carapace very much flattened, much wider at the branchial regions than in its posterior portion, transversely rugose near the antero-lateral margins; lateral epibranchial tooth distinct but not very prominent, the extraorbital angle or tooth not at all prominent and not projecting beyond the level of the front, which is not at all deflexed, about two fifths the greatest breadth of the carapace, with a very slight median and two lateral sinuses in its anterior margin. The postfrontal ridge is interrupted, the two median portions being more advanced than the lateral, which are continued in a nearly straight line to the epibranchial tooth. Length of carapace 1 inch 3 lines, breadth 1 inch 7 lines.

W. Borneo (an adult female).

The anterior legs are unfortunately wanting. Although this species resembles M.-Edwards's figure of *T. sinuatifrons* in the sinuated anterior margin of its front, a character peculiar to that species, the front appears to be relatively broader and the postfrontal line straighter; so that it may after all prove to be distinct.

Besides the foregoing there are two specimens (male and female) of a species belonging to that section of the genus which Stimpson designated *Geotelphusa*, which, on account of their mutilated condition, and the difficulty of determining the specific characters of the species of this section without large series for comparison, I will not designate by a distinct name. The carapace is considerably broader than long, and much inflated over the branchial regions; the postfrontal crest is indicated only by two well-marked prominences on either side of the middle line. The extraorbital angle is much depressed, so that there is no extraorbital tooth; the

epibranchial tooth is very small; and the antero-lateral margins of the carapace are defined by a distinct line. The front is less than one third the greatest width of the carapace; and its anterior margin is marked with a shallow median sinus. One (probably the larger) chelipede is absent in each specimen; the remaining one is slender; the carpus is armed with two strong spines, of which the anterior is the larger, on its inner margin; hand nearly smooth; fingers slender, straight, and minutely denticulated. Postabdomen of male somewhat constricted in the middle; the terminal joint longer than broad.

This species is apparently allied to *T. picta*, v. Martens, but differs in the spines of the wrist and probably in the form of the postabdomen of the male. No locality was preserved with the specimens.

*Paratelphusa tridentata*.

*Paratelphusa tridentata*, M.-Edwards, Ann. Sci. Nat. (sér. 3) Zool. xx. p. 213 (1853); Arch. Mus. Hist. Nat. vii. p. 171, pl. xiii. fig. 1 (1854); De Man, Notes from Leyden Museum, no. xix. p. 62 (1879).

Bali (an adult female); Java (a young male with *P. convexa*). An adult male and female are in the collection without definite locality.

This species, as Mr. de Man has pointed out, may always be distinguished by the form of the posterior epibranchial tooth and the absence of spines on the meropodal joints of the legs.

*Paratelphusa convexa*.

*Paratelphusa convexa*, De Haan (ined.), De Man, Notes from Leyden Museum, no. xix. p. 63 (1879).

Java (six specimens, including males, females, and young). In three of these specimens the body and legs are spotted or variegated with dark red. Nias (an adult female); Borneo (a young female).

In the young individuals the angular excavation of the inferior wall of the orbit is less marked than in the adult; and I think it possible that the examination of a sufficiently large series might show that *P. maculata* is not specifically distinct.

CATOMETOPA *vel* GRAPSOIDEA.

*Macrophthalmus carinimanus*, M.-Edw.

A male and female, of which the exact locality has not been preserved, are in the Museum collection, which agree

very well with Milne-Edwards's short diagnosis of this species. The eyes, in these specimens, do not reach quite to the antero-lateral angles of the carapace. The arm of the anterior legs has one or two spinules at the distal end of its inner margin; the wrist has a spinule on its inner surface; the hand is slender, granulated on its upper, and slightly on its outer surface; the lower finger is bent downward, so as to form a distinct angle with the inferior margin of the hand; the upper finger (when closed) meets the lower at its apex only; and the two enclose a large triangular space. The inner margin of the hand and arm is clothed with dense hair.

Specimens in the British-Museum collection from Singapore, the Mauritius, Penang, and Australia, which have been referred to *M. carinimanus*, belong to the following species.

*Macrophthalmus convexus*.

*Macrophthalmus convexus*, Stm. Proc. Ac. Nat. Sci. Phil. p. 97 (1858).

The specimen I refer to this species belongs to Milne-Edwards's second section, having the carapace less than twice as broad as long, and the inner surface of the hand unarmed. The carapace is coarsely granulated on the sides; and the branchial regions are sometimes armed with two small granulated prominences, with the antero-lateral angles spiniform and prominent; posterior to these, on the lateral margins, is a second tooth; the front is spatulate; the eye-peduncles do not quite reach to the end of the antero-lateral teeth; the anterior legs (in the male) have the inner margins of the arm and wrist granulated, the hand rounded and finely granulated on its upper margin, with a longitudinal granulated line (not a ridge) on its outer surface close to the lower margin; the lower (immobile) finger is deflexed, but does not form so decided an angle with the lower margin of the hand as in the preceding species; the distal end of the palm and the fingers are hairy on their inner surface; the fingers (when closed) include a much narrower space than in *M. carinimanus*; the ambulatory legs are smooth, not pectinated, scantily fringed with hair, and with a very small spine (which is sometimes obsolete) near the distal end of the upper margin of the merus. Length 7 lines, breadth at second marginal tooth 13 lines.

Indo-Malayan seas (a male).

This species is evidently allied to *M. simplicipes* and *M. affinis*, Guérin, from Bombay, which, however, are represented as having two teeth behind the antero-lateral or extra-

orbital tooth. *M. setosus*, M.-Edw., and *M. japonicus*, De Haan, have the antero-lateral angles much less prominent and acute. *M. inermis*, A. M.-Edwards, which may be identical with this species, is represented as having the upper margin of the hands sharp-edged, not rounded.

*Ocypode ceratophthalma* (Pallas).

Celebes, Macassar (an adult male); Batjan (an adult male).

*Ocypode cordimana* (Latr.).

Celebes, Macassar (a female).

GELASIMUS.

There can be little doubt that many of the numerous species of this large and difficult group have been founded on insufficient characters, and will be reduced to synonyma whenever the comparison of sufficiently large series of specimens of different ages and sexes shall have demonstrated the variability of the denticulation of the inner margins of the fingers of the larger chelipede and of other characters that have been employed in distinguishing the species.

\* *Front narrow between the eyes.*

*Gelasimus vocans* (Linn.).

Three males are in the collection, without definite indication of locality. There is a strong triangular tooth near the distal end of the upper margin of the arm in this species; the hand is strongly granulated externally, and has two very strong granulated ridges on its inner surface; the fingers are robust and laterally compressed; there is always a strong triangular lobe or tooth near the distal extremity of the lower finger, and usually, but not invariably, a second between this and the base.

*Gelasimus Marionis*.

*Gelasimus Marionis*, Desm. Consid. Crust. p. 124, pl. xiii. fig. 1 (1825); M.-Edw. Ann. Sci. Nat. (sér. 3) Zool. xviii. p. 145, pl. iii. fig. 5 (1852); Hoffmann in Recherches faune Madagascar, Cr. p. 15, pl. iii. figs. 16-18 (1874); nec M.-Edw. Hist. Nat. Crust. ii. p. 53 (1837).  
*Gelasimus cultrimanus*, White, P. Z. S. p. 84 (1847); Adams and White, Zool. Samarang, Cr. p. 49 (1848); M.-Edw. Ann. Sci. Nat. l. c. p. 145 (1852).

Batjan (two males).

The principal character that distinguishes this species from *G. vocans* is the absence of prominent lobes on the lower im-

mobile finger; and I regard it as very probable that it is merely a variety of that species. There is, as in *G. vocans*, a strong triangular tooth at the distal end of the upper margin of the arm; the palm is strongly granulated in the middle of its outer surface, and there is a well-marked concavity on the outer surface at base of the lower finger in both forms.

The relative length of the fingers as compared with that of the palm is clearly a character that varies with the age of the individual, the fingers being always shortest in the smallest examples. The upper finger is never longitudinally sulcated, either in *G. vocans* or *G. Marionis*.

*Gelasimus arcuatus*.

*Gelasimus arcuatus*, De Haan, Faun. Japon. Crust. pp. 53, 261, pl. vii. fig. 2 (1835).

*Gelasimus tenuimanus*, White, List Crust. Brit. Mus. p. 35 (1847), sine descr.

Borneo (an adult male).

In what I regard as the typical condition of this species, the fingers of the larger hand are greatly elongated and without prominent lobes on their inner margins. They are often nearly three times the length of the hand.

*Gelasimus arcuatus*, var. *forcipatus*.

*Gelasimus forcipatus*, Ad. & White, Zool. Samarang, Crust. p. 50 (1848); M.-Edw. Ann. Sci. Nat. (sér. 3) Zool. xviii. p. 147 (1852).

? *Gelasimus brevipes*, M.-Edw. *l. c.* p. 146, pl. iii. fig. 7 (1852).

? *Gelasimus rubripes*, M.-Edw. *l. c.* p. 148 (1852); Jacq. & Lucas, Voy. Pôle Sud, Zool. iii. Cr. p. 66, pl. vi. fig. 2 (1853).

Batjan (seven males, of different sizes).

In all the specimens I refer to this variety the fingers are shorter, not exceeding twice the length of the palm, and nearly always lobed or toothed on their inner margins. In the smaller examples the length of the fingers is relatively less; and in the smallest they are not half the length of the palm.

In the largest of the specimens from Batjan there is (besides the granulations with which the inner margins of the fingers are always armed) a single tooth on the lower finger; in three others, one on the upper and none on the lower; in two others, two on the upper and one on the lower; while in the smallest the teeth are obsolete. The width of the merus of the ambulatory legs also appears to vary somewhat in this species.

*G. arcuatus* may always be distinguished from *G. vocans* by the absence of the strong triangular tooth at the distal end of the arm, its place being taken by a series of granules; the

hand, moreover, is very coarsely granulated on the whole of its outer surface, and is of a reddish tinge in its lower half, which is not so markedly concave as in *G. vocans*; and the upper finger is sulcated on its outer surface.

\*\* *Front broad between the eyes.*

*Gelasimus annulipes*, M.-Edw.

A male from Batjan and two specimens without definite locality are in the collection. Although the denticulations of the fingers vary considerably in this species, there is nearly always a strong triangular subterminal tooth on the lower immobile finger.

Three small examples of a *Gelasimus* allied to the above are in the collection (one from Batjan), which I will not venture to designate by a distinct specific name. The lateral margins of the carapace converge more rapidly to the posterior margin; and the antero-lateral angles are more produced and acute. The larger chelipede is nearly smooth externally, as in *G. annulipes*; but the upper finger is slenderer toward its distal end, and the lower finger (although denticulated on its inner margin) is without a subterminal tooth. In two of the specimens there is no granulated ridge on the inner surface of the hand near the base of the fingers; in the third specimen this ridge is present; the prominent granulated ridge on the inner surface of the palm, near its infero-proximal angle, is equally developed in all of the specimens. Whether this be the variety designated *albimana* by Kossmann, who founded his description on specimens from the Red Sea, could scarcely be decided without comparison of the types.

*Grapsus pictus* (Latr.).

Amboina (an adult female).

A very constant character distinguishing this species from *G. strigosus* is to be found in the form of the front, which is relatively narrow, with the anterior margin arcuated, in *G. pictus*, whereas in *G. strigosus* it is broader with the anterior margin straight.

*Varuna litterata* (Fabr.).

Bali (two males).

*Pseudograpsus penicilliger* (Latr.).

Batjan (two adult males in fine condition).

The genus *Heterograpsus* of Lucas is so very nearly allied

to *Pseudograpsus* in all structural characters, that I do not know whether it can be maintained as distinct. *Pseudograpsus penicilliger* is merely a more robust, thicker *Heterograpsus* with greatly developed chelipedes.

There are also three adult males of this species from the New Hebrides (Aneiteum) in the Museum collection.

I refer here with doubt a female in mutilated condition in the collection of Dr. Bleeker from Celebes (Macassar).

It resembles the male *P. penicilliger* in all particulars except that the carpus of the anterior leg is armed with a distinct lobe or tooth on its inner margin, and the outer surface of the penultimate joint, which is somewhat rugose, is marked with a longitudinal raised line, which is continued along the outer surface of the lower finger. Further material is needed to show whether these characters are sexual or indicative of a distinct species. As is usual in the females of some allied forms, the chelipedes are entirely devoid of hair. If distinct, this form may be designated *Pseudograpsus dentatus*.

#### *Ptychognathus pilipes?*

? *Gnathograpsus pilipes*, A. M.-Edw. Nouv. Arch. Mus. Hist. Nat. iv. p. 184, pl. xxvii. figs. 6-10 (1868).

I refer to this species with some hesitation a small female example from Batjan. It agrees very well with males and females in the Museum collection from the Philippines (Guimaras). The close affinity of *Gnathograpsus* to *Ptychognathus* was recognized by Prof. A. Milne-Edwards; and I can see no sufficient reason for regarding them as distinct genera. It is worthy of note that neither A. Milne-Edwards, Stimpson, nor Man have noted the common occurrence in the females of this genus of a small tuft or patch of hair near the distal end of the lower (immobile) finger of the chelipedes. This hairy patch exists in the females I refer to *P. pilipes*. It is possible that none of the authors above cited had females before them.

#### *Metopograpsus messor* (Forskål), var. *frontalis*, nov.

Celebes, Macassar. An adult male.

In its coloration this example appears to approach very near to what may be regarded as the typical form of the species, represented by specimens from the Red Sea in the Museum collection.

The front is relatively wider than in most of the specimens of this species in the Museum collection—about three and a



half times the length of the upper orbital margin; and its anterior margin is straight, not at all sinuated in the middle. I have observed, however, some variation in the width of the front in this species.

There is a second male, without definite locality, in the collection, that agrees in every particular with the Celebes example, except that on one side of the carapace there is a distinct tooth behind the extraorbital tooth, and on the other side an indication of a similar tooth, the margin of the carapace being slightly sinuated. This variety appears to mark a transition to *Metopograpsus quadridentatus*, Stimpson, and *M. oceanicus*.

From *M. latifrons*, White, this variety is distinguished by the much less coarsely denticulated front and less accentuated frontal lobes.

#### SESARMA.

\* *Lateral margins of the carapace without any tooth behind the extraorbital tooth.*

#### *Sesarma affinis*, De Haan.

Two specimens (males) are in the collection, without special indication of locality. They agree with De Haan's figure in having two minutely pectinated oblique ridges on the upper surface of the hand, a character which, curiously enough, is mentioned neither by De Haan nor by Mr. de Man in his remarks upon this species (Notes Leyden Museum, ii. (v.) p. 22, 1879). The tubercles of the upper mobile finger are somewhat more numerous than in De Haan's type.

*Sesarma aspera* of Heller, from Ceylon, Madras, and the Nicobars, is either identical with or very nearly allied to this species; the sides of the carapace, however, are represented as nearly parallel, not convergent distally.

#### *Sesarma granosimana*, sp. n. (Pl. XIV. fig. 3.)

Carapace nearly quadrate, with the surface punctulated, but not granulated or rugose; antero-lateral margins without any tooth except the extraorbital tooth. The anterior margin of the carapace is divided into four nearly equal and not very prominent lobes; the front, although nearly vertically deflexed, does not form a marked angle with the anterior margin of the carapace; it is about two thirds the width of the carapace; and its anterior margin is nearly straight, but slightly reflexed on each side of the middle line. The anterior legs (in the male) are short; the arm has a very small tooth at

the distal end of its upper margin; the whole of the outer surface of the wrist is covered with short transverse ridges, which pass into the form of granules on the outer surface of the palm; on the inner surface of the wrist is a spiniform tooth; there are no pectinated crests on the upper surface of the palm; the mobile finger is granulated above at base, and both fingers are denticulated on their inner margins. The merus of the ambulatory legs is considerably dilated, and armed with a small spine near the distal end of its upper margin; the two following joints are marked with longitudinal raised lines; the dactyli are slender. The post-abdomen of the male is rather broad; its terminal joint considerably narrower than the penultimate joint. Length 7 lines, breadth 8 lines.

Indo-Malayan seas (no definite locality). A male and female are in the collection.

*S. granosimana* is nearly allied to *S. Dehaanii*, M.-Edw., but is distinguished by the existence of a tooth on the inner margin of the wrist, the more dilated merus of the ambulatory legs, &c. The legs, in the two specimens I have examined, are not clothed with long hairs as in *S. Dehaanii*.

*S. trapezium*, Dana, which is also apparently allied to this species, is described as having the carapace much narrowed behind, the abdomen of the male narrow, and as having a dense patch of hair near the base of the mobile finger\*.

\*\* *Carapace with a second (epibranchial) tooth behind the extraorbital tooth.*

*Sesarma bidens* (De Haan).

Indo-Malayan seas (one adult male without definite locality).

*Sesarma tæniolata*, White (ined.), Miers.

Borneo (an adult male). In this specimen and in the others in the Museum there exist but few traces of the tufts of hair with which, according to Mr. de Man (Notes Leyden Museum, ii. (v.) p. 26), the carapace is usually covered.

*Sesarma Bocourti*, A. M.-Edwards.

Borneo (two males and a female). The males agree very well with the diagnosis of A. M.-Edwards, and the longer

\* I have not been able to compare *S. granosimana* with the description of *Sesarma chirogona*, Targioni-Tozzetti, "Crostei Brachiuri ed Anomuri," in 'Zoologia della R. pirocorvetta Magenta,' Firenze, 1877, 8vo, as I have not yet had an opportunity of consulting this important work.

and more detailed description of Mr. de Man (*l. c.* p. 28). In the female (which has not as yet been observed) the hand is slender, not dilated and compressed as in the male, and its external surface, although flattened, is less coarsely granulated towards the fingers, which are nearly smooth.

*Sesarma intermedia* (De Haan).

Indo-Malayan seas (a male and female without definite locality).

*Metagrapsus punctatus*, A. M.-Edw.

Indo-Malayan seas (two males).

*Leiolophus abbreviatus* (Dana).

Indo-Malayan seas (one male).

*Pinnotheres obesus*, Dana? (Pl. XIV. fig. 4.)

? *Pinnothera obesa*, Dana, Cr. U.S. Expl. Exp. xiii. p. 380, pl. xxiv. fig. 3 (1852).

I thus designate three specimens of a *Pinnotheres* without locality in the collection. The carapace is subglobose, with the antero-lateral margins regularly rounded and entire, and is nearly naked; the front is very small, and projects slightly; its anterior margin is rounded or subtruncated. The merus of the outer maxillipedes is but little longer than broad, regularly rounded at its distal end (where it is most dilated); its outer margin also is arcuated, and its inner margin straight; its surface near the inner margin is somewhat thinly setose; the antepenultimate and penultimate joints are robust; the latter is fringed with hairs along its outer margin and at its distal end, which is obliquely subtruncated; the slender dactylus is articulated with the penultimate joint at a little before the middle of its inner margin, and does not project beyond its apex. The anterior legs are small and smooth, and present nothing remarkable; the ambulatory legs also are very slender and naked.

All the specimens are females.

This species, in the form of the broadly dilated merus of the outer maxillipedes, appears to differ from all the species figured by Milne-Edwards in his revision of the group in 1853, and others since described. A specimen from Borneo is in the Museum collection. A figure is given of the outer maxillipede, because it is not quite of the form figured by Dana; but I do not think the difference is sufficient to warrant the specific separation of the two forms.

OXYSTOMATA *vel* LEUCOSOIDEA.*Camara calappa* (Linn.).

New Guinea (an adult female); Aroe Islands (an adult female).

*Calappa lophos* (Fabr.).

Celebes, Macassar (a male).

No trace of the characteristic coloration exists in this specimen. The carapace is somewhat more tuberculated, and the denticulation of the antero-lateral margins near the extra-orbital tooth is less marked than in a specimen in the Museum collection from the Indian Ocean, which I refer to the typical *C. lophos*. It is possible that these characters indicate the existence of distinct varieties or species.

*Matuta victrix*, Fabr.

Celebes, Macassar (two males and a female); Bali (an adult female). A female from Batjan also perhaps belongs to this species, in which all trace of the spots or markings have disappeared.

*Matuta circulifera*, sp. n. (Pl. XIV. fig. 5.)

Carapace everywhere rather finely granulated; the granulations rather coarser on the more elevated parts; the tubercles all distinct, but not very prominent. The rostrum is small, obtuse, and subentire, with only a very obscure indication of a median notch. Lateral marginal spine long, acute, and straight. Hand of male nearly as in *M. lunaris* (*M. rubro-lineata*, Miers) and *M. lineifera*. Lines of the carapace forming complete and distinct circles, arranged in three transverse series, *i. e.* a transverse series of three circles on the anterior portion, of four on the median portion, and of three on the posterior portion of the carapace.

Indo-Malayan seas. An adult male is in the collection of this interesting form, which belongs to section A of the genus, and is distinguished from both *M. lunaris* and *M. lineifera* by the strikingly symmetrical coloration and the form of the front.

The coloration has unfortunately much faded in the unique example (preserved in spirit), and, it is to be feared, will soon altogether disappear.

*Matuta Banksii*, Leach.

Celebes (a male); Amboina (a female); New Guinea (an adult male); Bali (a female).

In a fine adult male without locality the granulations of the carapace are somewhat less distinct.

*Matuta obtusifrons*, Miers.

Bali (a female).

This species is easily distinguished by the strongly-marked tubercles and obtuse front from *M. laevidactyla*\*.

*Leucosia pallida*, var. *obscura*.

*Leucosia obscura*, Bell, Trans. Linn. Soc. xxi. p. 285, pl. xxx. fig. 3 (1855).

? *Leucosia moresbiensis*, Haswell, Proc. Linn. Soc. New S. Wales, iv. p. 49 (1879), var.

Indo-Malayan seas (two females without definite locality).

Mr. Haswell, in his excellent description of *L. moresbiensis*, acknowledges its affinity to *L. obscura*. This description, moreover, agrees better than that of Bell with the specimens designated *L. obscura* in the Museum collection. In these specimens there is a distinct row of granules on the inner margin of the hand, and the granulation of the posterior and postero-lateral margins of the carapace and the armature of the fingers are precisely those of *L. moresbiensis*. The only difference that I note is that in *L. obscura* (and *L. pallida*) there are four, not three, large tubercles on the lower margin of the thoracic sinus; but this alone would probably not suffice to distinguish *L. obscura* from *L. moresbiensis*. It is certain, therefore, either that Bell's description and figure are inaccurate, or were based on specimens belonging to a distinct species from the examples labelled *L. obscura* in the Museum collection.

*Leucosia pallida*, Bell, in all structural characteristics is identical with *L. obscura*; it differs only in the lighter coloration, which may possibly be due to the bleaching of the specimens. Among the specimens in the Museum collection are some on which the granulation of the inner margin of the hands is obsolete.

*Myra carinata*, Bell.

Celebes, Macassar (a male).

\* I propose this name for the specimens that I, in my revision of the genus, referred to *M. lunaris* (Herbst). Hilgendorf, who had before him Herbst's typical example, has shown (Monatsb. Ak. Berlin, p. 810, 1878) that the species designated *M. rubrolineata* is really the *lunaris* of Herbst; consequently the specimens I referred to *lunaris* must receive a new appellation. It was impossible, in the case of such nearly allied species, to say, from the figure and description alone, what species Herbst had designated *lunaris*.

It appears to me not improbable that the comparative examination of a sufficient series of specimens would demonstrate that this species and *M. elegans* are founded on half-grown specimens.

*Iphis septemspinosa* (Fabricius).

Celebes, Macassar (a female).

*Arcania novemspinosa* (White), var. *aspera*, n.

A specimen (adult female) without definite locality differs from White's type of *novemspinosa* in the British Museum in the broader and much more closely granulated carapace, and the relatively shorter spines of the posterior and postero-lateral margins. White's specimen is a male. Although the characters distinguishing the genera *Iphis* and *Arcania* are scarcely of generic value, it may be convenient to retain the former name for the Fabrician *septemspinosa*, to which it has long been applied, and which differs somewhat more markedly from the species of *Arcania* than these do among themselves.

*Dorippe sima*, M.-Edw.

Borneo (an adult female).

[To be continued.]

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XXXI.—*On Hypochlorin and the Conditions of its Production in the Plant.* By Prof. PRINGSHEIM\*.

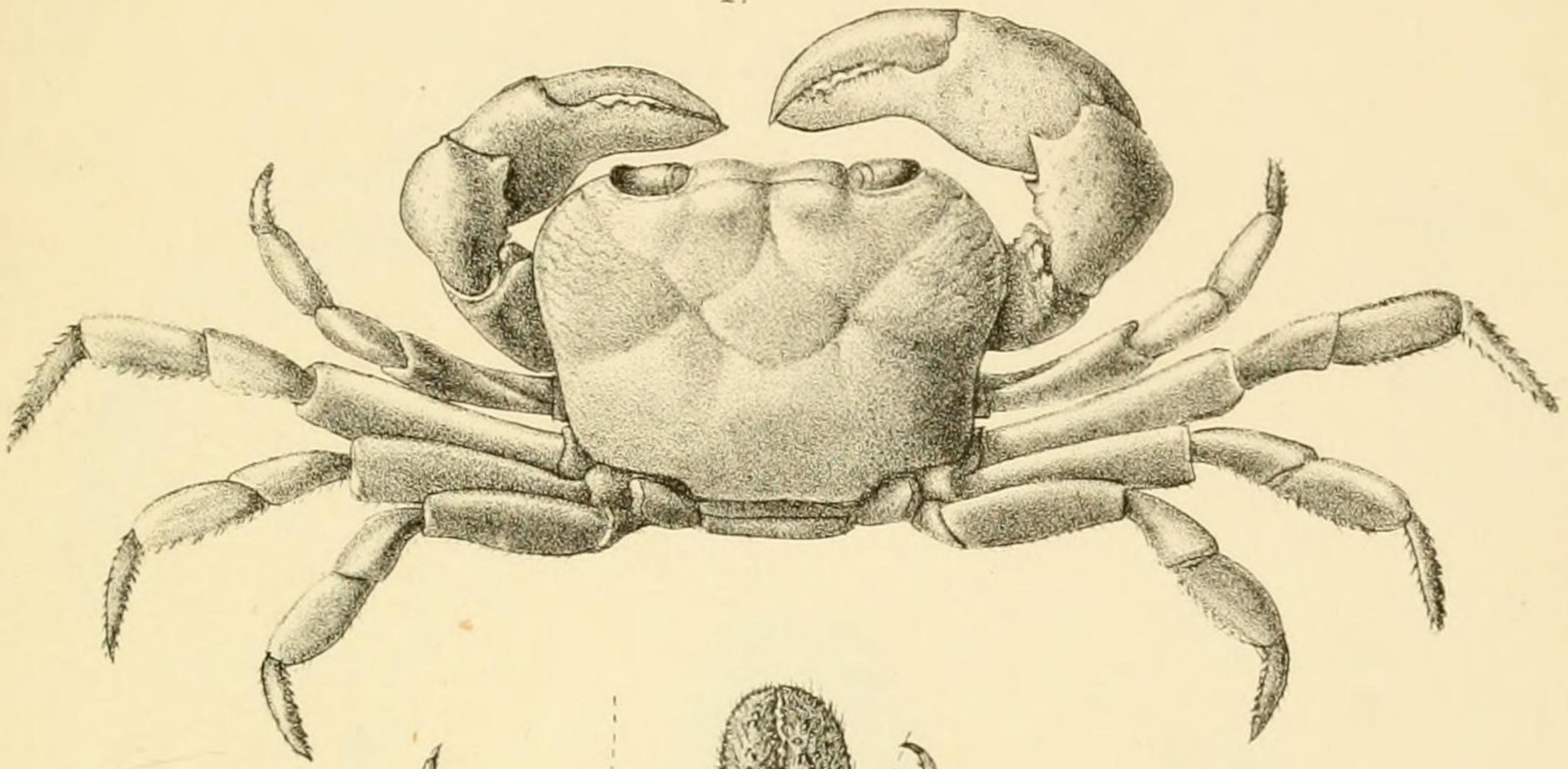
IN a previous communication† I called attention to the existence in green vegetable cells of a body to which I gave the name of "hypochlorin," on account of its close relationship to chlorophyll. I now give some more detailed statements as to its occurrence and microchemical characters, and append thereto some further remarks upon the constitution of the chlorophyll-bodies.

So far as they regard hypochlorin, these statements relate essentially to the behaviour of this body at high temperatures and to the conditions of its production in the seedling plant. With regard to the chlorophyll-bodies, they will at the same

\* Translated by W. S. Dallas, F.L.S., from the 'Monatsbericht der Akademie der Wissenschaften zu Berlin,' November 1879, p. 860.

† Monatsb. Berl. Akad. July 1879; translated in this Journal for January 1880.

1.



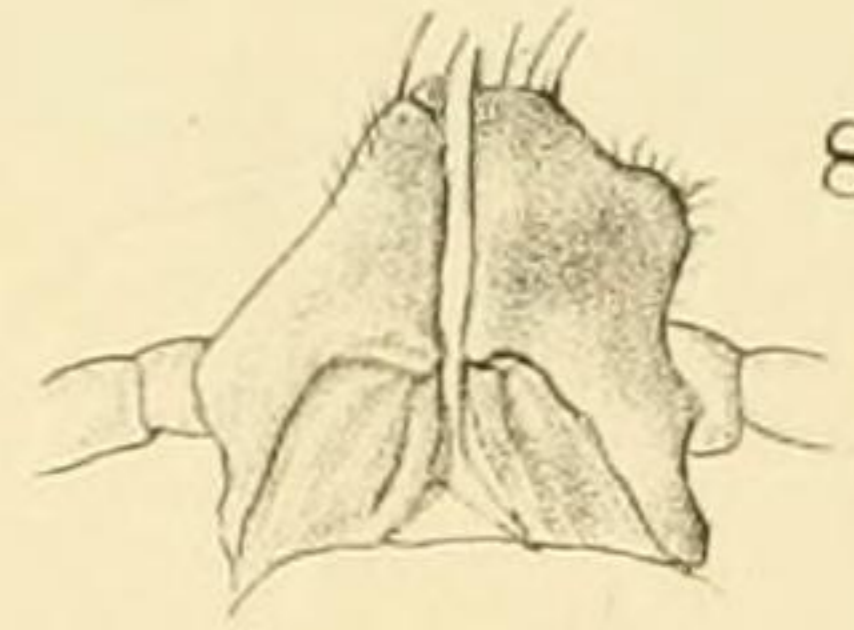
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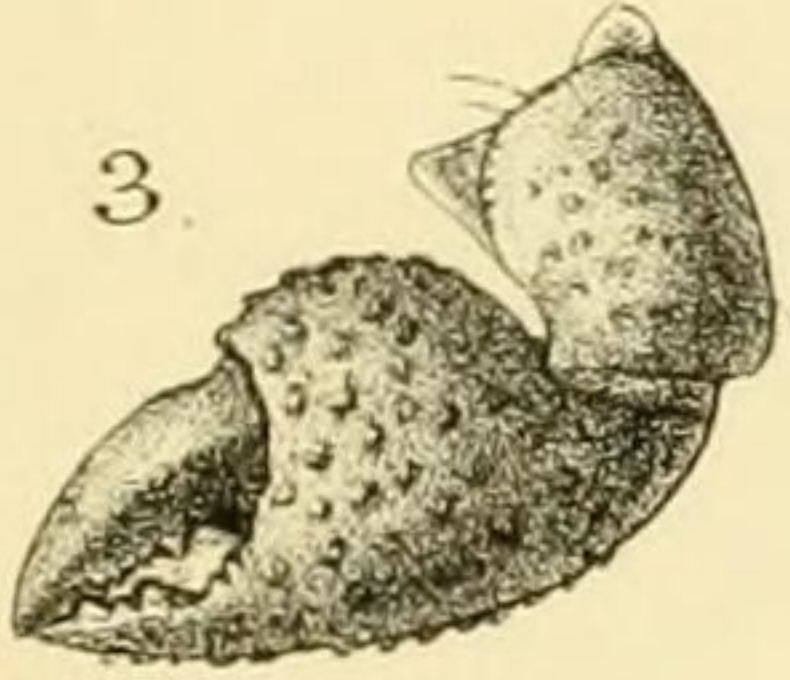
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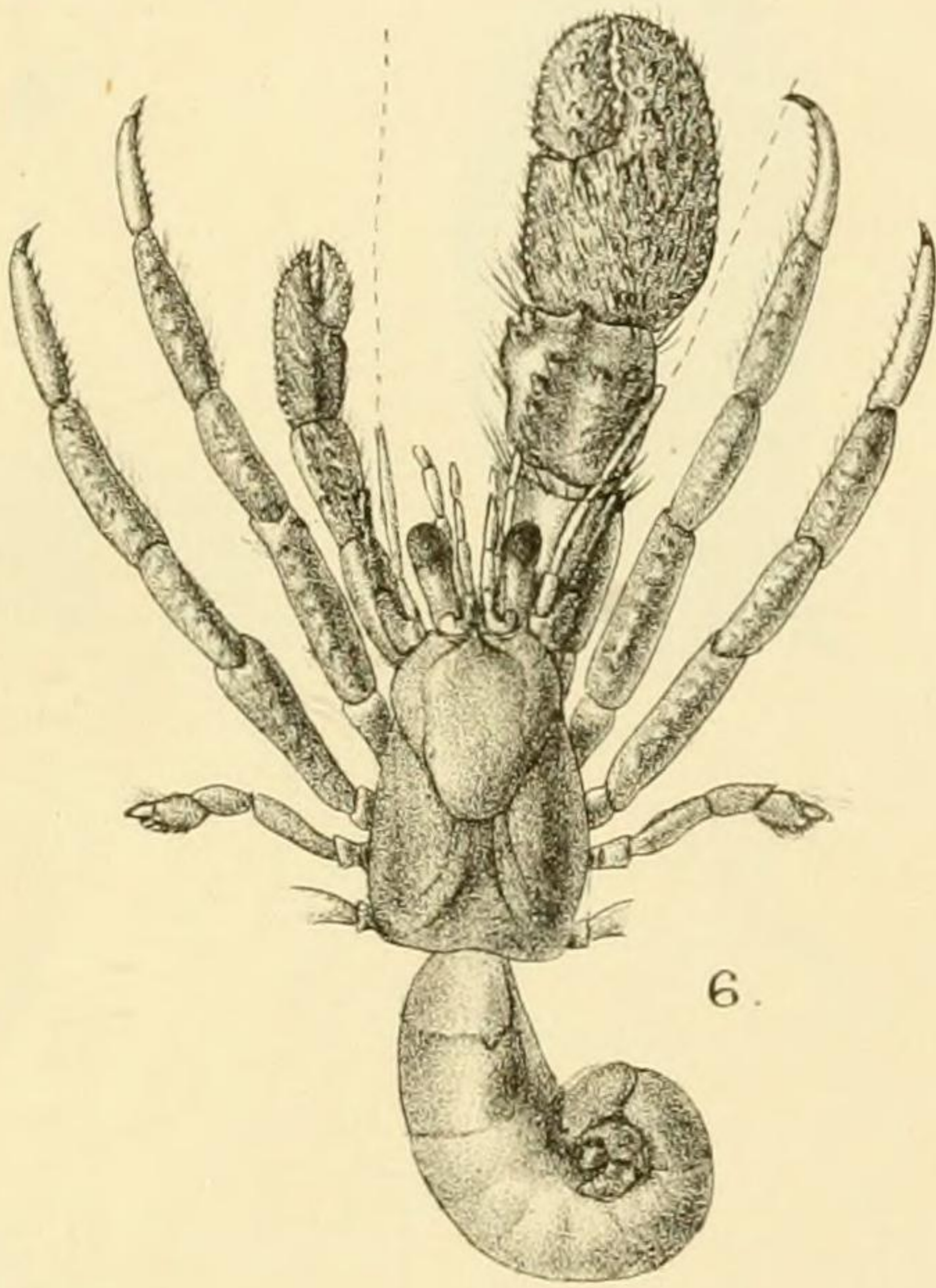
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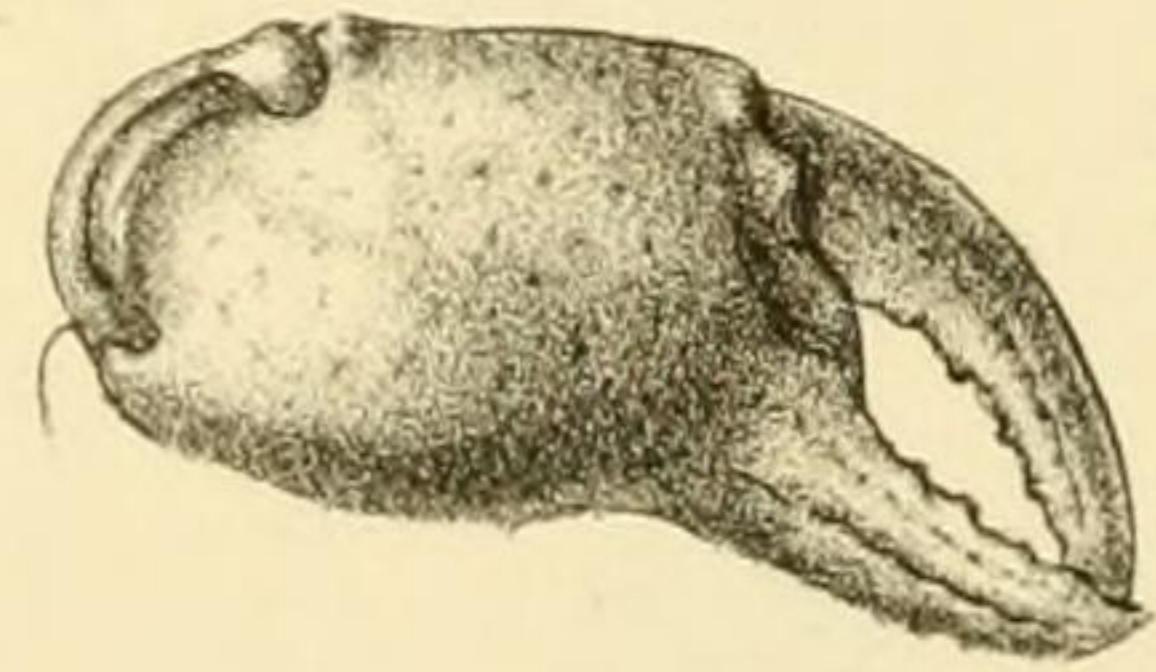
3.



6.



2.



5.

