

venture very far from their habitations. The clicking noise produced by snapping the claws of their larger fore-leg together, when made by many hundreds at a time, may be heard at some considerable distance. On the least alarm they retreat precipitately to their burrows.

### 1. GELASIMUS, *Latreille*.

#### 1. GELASIMUS CULTRIMANUS, *Adams & White*.

*Thorace* lævi; marginibus lateralibus rotundatis, sine carinâ acutâ ab angulo canthi externo.

*Fronte*, inter oculos, lobo parvo rotundato, dilatato; margine canthi inferiore distincte crenulato; chelâ majore digitis latis, finibus extrorsum curvatis; digito inferiore in medio profunde sinuato, lobo lato, prope extremitatem margine serrato-crenulato; digito superiore margine inferiore fere recto.

HAB. Insulas Philippinas.

*Carapace* with the upper surface smooth; the lateral edges rounded, without any sharp keel from the outer orbital angle.

*Front*, between the eyes, with a small dilated rounded lobe; edge of lower orbit very distinctly crenated; fifth joint of fore-legs with the claws wide, both slightly curved outwards at the ends; the lower claw with a very wide sinus in the middle, a wide serrato-crenated lobe on the edge near the end; upper claw with the lower edge very nearly straight.

HAB. Philippine Islands.

#### 2. GELASIMUS CRASSIPES, *Adams & White*.

*Thorace* valde arcuato, postice subito coarctato.

*Fronte* lobo sine pedunculo angusto.

Pedibus posterioribus crassioribus et robustioribus quam in speciebus aliis.

HAB. Insulas Philippinas.

*Carapace* very much arched, suddenly narrowed behind.

*Front* with a lobe, without narrow stalk.

Four hind pairs of legs thicker and stronger than in the other species.

HAB. Philippine Islands.

#### 3. GELASIMUS BELLATOR, *Adams & White*.

*Thorace* antice (prope insertionem canthorum pedunculorum) sinuato.

*Fronte* in lobum rotundatum subdilatatâ; chelis manu digitis perlongis; digito superiore lateribus subparallelis, margine prope ad basin tuberculis duobus vel tribus; digito inferiore infra marginato, acie ad basin sinus superficiali tuberculari, dente robusto lato ad extremitatem.

HAB. Insulas Philippinas.

*Carapace*, in front, just behind the insertion of eye-peduncles, sinuated.

*Front* slightly dilated into a rounded lobe; fifth joint of the larger fore-leg, with the claws very long; the upper, or movable claw, with the sides nearly parallel, two or three larger

tubercles on the edge near the base ; fixed or lower claw margined on the under side ; the cutting edge with a very wide shallow tubercular sinus at the base ; at the end of the sinus, beyond the middle, a strong wide tooth, gradually sloping down to the end, which curves upwards.

HAB Philippine Islands.

4. GELASIMUS PORCELLANUS, *Adams & White.*

*Oculorum pedunculis* perlongis.

*Thorace* parte frontali non coarctatâ ad basin ; parte posteriore longiore quam latera.

*Chelis* digito inferiore ad finem incrassato, marginibus internis digitorum amborum tuberculis magnis quatuor inter parvos crenulos.

HAB. Borneonem.

*Eye-pedicles* very long.

*Frontal* portion of carapace not narrowed at the base ; hind part of carapace much longer than the sides.

*Fore-legs* with the lower claws thickened at the end, the inner margins of both claws with four larger tubercles amongst the small crenules.

HAB. Borneo.

5. GELASIMUS FORCIPATUS, *Adams & White.*

*Thorace* valde postice coarctato.

*Fronte*, inter oculos, lobo dilatato, lineâ acuto-marginatâ, ab angulo canthi externo porrectâ.

*Chelâ* majore digitis æqualibus, dente prope medium, et prope extremitatem, lobo truncato.

HAB. Borneonem.

*Carapace* much narrowed behind.

*Front* with a dilated lobe between the eyes ; from the outer orbital angle a sharp-edged line continued beyond the middle of carapace.

*Fore-legs* with the larger claw nearly equal in size, with a tooth near the middle, and a truncated lobe towards the end ; a rather broad impressed line along the middle of each claw ; upper edge of palmar portion with a slight ridge ; outer side of palm covered with very slight tubercles.

HAB. Borneo.

## VII. GONOPLACIDÆ.

The *Macrophthalmi* inhabit muddy flats along the sea-shores, and, when disturbed, bury themselves quickly in the yielding soil, leaving the ends, however, of their long telescope-eyes above the surface. When taken, they are quite defenceless, not using their fore-legs as organs of aggression, or erecting and snapping them as do the *Gelasimi*. They are numerously distributed throughout the Philippine Archipelago and the islands in the China Sea.

1. MACROPHTHALMUS, *Latreille*.1. MACROPHTHALMUS JAPONICUS, *De Haan*.

*Thorace* lato-quadrato, ad latera obtuse dentato; manibus (marium) latere exteriori lævibus et inermibus, interiore glaberrimis, carinâ superiore granulatis; digitis (in maribus) deorsum inflexis.

Japonice *Suna gani*, i. e., Cancer arenarius, quod se in arenâ abscondere solet.

*Ocyrode* (*Macrophthalmus*) *Japonicus*, De Haan, F. I. p. 54. t. 15. f. 2. (mas) t. 7. f. 1. (femina.)

HAB. Insulas Mëia-co-shimahs et Japoniam.

*Carapace* widely-quadrate, sides obtusely toothed; the fifth joint of fore-legs, in the male, smooth and unarmed on the outer side, very smooth on the inner side, granulated on the upper keel; claws in the male bent downwards.

In Japanese *Suna gani*, i. e., Sand Crab, because it is in the habit of burying itself in the sand.

HAB. Mëia-co-shimah Islands; Adams. Japan; De Haan.

2. MACROPHTHALMUS DEFINITUS, *White*.

*Thorace* anguste-quadrato, lateribus dentibus tribus, angulo canthi incluso, dente secundo latiore, dente tertio parvo.

*Chelis* articulis perlongis vix supra marginatis, digito superiore dente parvo prope basin; digito inferiore sinu valde profundo, manu infra tuberculatâ, interne pilosâ.

HAB. Insulas Philippinas.

*Carapace* narrowly-quadrate; sides with three teeth, including the orbital angle; the second widest, turned up considerably, the third very small.

*Fore-legs* with the joints very long, scarcely margined above; movable or upper claw with a very slight tooth near the base; fixed or under claw with a very deep sinus; fifth joint tuberculated on the under side, hairy on the inside.

HAB. Philippine Islands.

3. MACROPHTHALMUS SERRATUS, *White*.

*Thorace* anguste-quadrato, lateribus antice dentibus tribus robustis, postice carinâ subcrenulatâ.

*Chelis*, manu ab basin interne dilatatâ, longitudinaliter excavatâ; digitis pilis longis densis obsitis; digito superiore, in medio, dente truncato.

Pedibus posterioribus, parte superiore, spinâ prope extremitatem.

HAB. Insulas Philippinas.

*Carapace* narrowly-quadrate, with three strong teeth on the sides in front, succeeded by a slight somewhat crenated keel which margins the rest of the carapace.

*Fore-legs* with the fifth joint dilated on the inside from the base, and longitudinally hollowed out; inside of both claws densely clothed with long hairs; upper or movable claw with a large truncated tooth in the middle.

Hind-legs with a spine on the upper side near the end.

HAB. Philippine Islands.

2. CHASMAGNATHUS, *De Haan*.1. CHASMAGNATHUS CONVEXUS, *De Haan*.

*Thorace* gibbo, granulato, brevi-setoso, dorso subtetragono, lateribus arcuato.

*Fronte* arcuatâ, medio sinuatâ.

HAB. Maria orientalia.

*Octypode* (*Chasmagnathus*) *convexa*, De Haan, F. 1. p. 56. t. 7. f. 5.

*Carapace* gibbose, granulated, shortly-setose, subtetragonal on the back, arched at the sides.

*Front* arcuated, sinuated in the middle.

HAB. Eastern Seas.

## VIII. GRAPSIDÆ.

The *Sesarmæ* are found in various localities, sometimes in fresh-water rivulets, among weeds; sometimes under damp logs and stones at a considerable distance from any water, and most frequently among the roots of mangroves in salt-water swamps. They are active and extremely wary in their habits, and, like the *Grapsi*, very predacious. The *Grapsus plicatus* is a very common species in Borneo, and appears to vary greatly in colour according to the localities in which it is found. The *Grapsi* are fond of rocks, over which they run with surprising agility; they frequently remain stationary for hours, basking in the sun, when the tide has just left the high rocks.

1. UTICA, *White*.

*Pedipalpi externi* articulo tertio externe recto non dilatato.

*Thorace* 8-angulato, depresso, post-medium carinâ transversâ valde distinctâ; margine latero-anteriore dentibus tribus; parte latero-posteriore obliquâ, parte posteriore rectâ.

*Chelis* parvis.

*Pedibus posterioribus* perlongis, tarso vix dilatato subelongato, pilis fimbriato.

*Outer jaw-feet* with the third joint, on the outside, straight, not dilated.

*Carapace* somewhat eight-angled, tabular, a very strong transverse ridge behind the middle; latero-anterior margin with three teeth; latero-posterior part oblique, posteriorly very straight.

*Fore-legs* small.

*Hind-legs* very long, tarsus not particularly dilated, somewhat elongated, fringed with hairs as is the preceding joint.

This genus is nearly allied to *Trichopus*, De Haan, which is synonymous with *Varuna*, M. Edwards.

1. *UTICA GRACILIPES*, *White*. (Pl. XIII. Fig. 6.)

*Fronte* latâ, anteriore margine valde recto, post-frontem ad medium thoracem pertinente, eminentiâ magnâ latâ subtriangulâri, a transversâ carinâ separatâ per altam lunatam depressionem, lineâ subimpressâ a finibus ad latus carinæ porrectâ. *Pedibus* gracillimis, pilis fimbriatis.

HAB. Insulas Philippinas.

*Utica gracilipes*, *White*, *Pro. Zool. Soc.*, May, 1847.

*Front* wide, fore-edge very straight; behind it and extending to the middle of the carapace, a considerable, wide, somewhat three-sided elevation, separated from the transverse ridge by a deep lunated depression, from the ends of which a slight impressed line proceeds to the side of the ridge, where it deepens.

*Hind-legs* very slender, and fringed with hair.

HAB. Philippine Islands.

Mr. Cuming found this species in a fresh-water rivulet among the mountains of the Island of Negros. It was also obtained during the Expedition of the Samarang in the Island of Mindanao, in the deep still muddy fresh-water rivulets near Samboangan, hiding under weeds and rotten wood. When caught, it feigns death, contracting its limbs and rendering them perfectly rigid. Its colour, when alive, is dark-red brown, on the under-surface dark chocolate-brown, lighter on the legs and abdomen, which latter in the female has a yellowish line down the middle.

## IX. LEUCOSIDÆ.

Besides several species of *Leucosia* new to science, a few *Philyræ* were obtained in the Sooloo Sea, and on the coast of Borneo from a rocky stony bottom; among them was the *P. scabriuscula* of Leach, which, when alive, is of a chocolate colour, with red-brown legs; the *Philyra latifrons* (A. & W.), which is of a deep red brown, with orange fore-legs; and another with a dead-white polished carapace, marked with dark olive brown, and the fore-legs banded with the same. The *Philyræ* have much the same habits as the *Leucosiæ*, being slow-moving, torpid Crustaceans, never using their fore-legs for defence, and living in deep water on a clean rocky or stony floor. A pretty species of *Myra* was dredged in the Sooloo Sea of a delicate flesh colour, with two blood-red spots on the carapace. The *Myra fugax*, which is punctulated and dark liver-coloured on the carapace, and a new species with white carapace and pinkish legs, were also procured; they are found usually in about eight or ten fathoms on a muddy bottom; one species is common in the mud of Manila bay. The *Arcaniæ* are usually of a dead-white colour, variously marked with red, with the legs spotted or banded; they prefer deep water and a clear gravelly bottom; several were dredged on the coast of Borneo in twenty-four fathoms. The *Ixæ* inhabit very deep water, and are inert and feeble; when taken they contract their legs and remain perfectly immovable. The *Iphides* are usually found concealed in madrepores and sponges, and live in a coral bottom in from fifteen to twenty fathoms; they are numerous on the coast of China.

1. LEUCOSIA, *Fabricius*.1. LEUCOSIA HÆMATOSTICTA, *Adams & White*. (Tab. XII. Fig. 2.)

*Thorace* trapezoidali supra valde convexo, post angulum latero-anteriorem in-scissurâ profundâ, maculis multis sanguineis rotundatis obsito.

HAB. Maria Orientalia.

*Carapace* trapezoidal, very convex, of a light yellow, covered with numerous small round blood-red spots, fewer posteriorly, and in the middle line a deep notch behind the latero-anterior angle.

*Front* obtuse.

*Fore-legs* with round, scattered, blood-red spots, and a large quadrate mark of the same colour on the outer surface of each claw.

*Hind-legs* with a blood-red band on the upper half of each joint.

HAB. Eastern Seas.

2. OREOPHORUS, *Ruppell*.1. OREOPHORUS RETICULATUS, *Adams & White*. (Tab. VI. Fig. 1.)

*Thorace* subtrigono, reticulato, fossis subdivisis duabus latero-anterioribus, postice fossâ profundâ, in medio tuberculo clypeiformi, regionibus lateralibus valde elevatis.

*Fronte* rotundatâ antice submarginatâ supra exsculptâ.

*Chelis* reticulatis.

HAB. Maria Orientalia.

*Carapace* subtrigonal, covered with a net-work of beaded lines, the intermediate areas finely granulated; a long semilunar, irregularly-shaped cavity extending along the latero-anterior margin on each side, separated by a strong post-frontal septum, each lateral cavity divided in two portions by two over-arching processes, which unite above, leaving a round foramen of communication; the posterior sublongitudinal portion partially divided by a conical projecting process; a small hole in the floor of the hind portion of the latero-anterior fossa; a cavity at the hind part of carapace nearly divided in two by a granulated tongue-shaped tubercle, and bounded posteriorly by two-obtuse tubercles of the hind margin; a solid shield-shaped reticulated process arising out of the hind part of the cavity; a beaded line around the margins of both fossæ; lateral regions convex, elevated into large obtuse prominences; lateral edges coarsely tuberculated.

*Front* thick and rounded, slightly emarginate, rather deeply excavated on the upper surface.

*Fore-legs* covered with coarse reticulations, formed of granulated lines. Upper claw spatulate, slightly curved downwards, flattened above, narrow beneath, a row of pits on the outer and inner margins, under edge tuberculiferous; upper surface with several rows of beaded lines. Under claw horizontally inclined, slightly curved upwards, elongately conical;

upper surface sharp and granular ; under surface thin and tuberculated ; inner surface concave, with two finely granulated parallel lines ; outer surface convex, with two rows of holes, and two series of tuberculated lines.

*Abdomen* (of female) convex, wide, divided into about six pits by strong reticulations formed of granuliferous lines.

HAB. Straits of Sunda.

### 3. IXA, *Leach*.

#### 1. IXA MEGASPIS, *Adams & White*. (Tab. XII. Fig. 1.)

*Thorace* subgranuloso, canaliculis dorsalibus angustis valde profundis, postice lineâ impressâ profundâ transversâ ; lateribus valde productis granulosis retrorsum inclinatis, finibus obtusis, dente terminali parvo curto.

HAB. Borneonem. Insulas Philippinas.

*Carapace* subgranular, the channelled grooves which separate the middle from the lateral regions very deep and narrow, a deep transverse posterior groove, the lateral prolongations granular, inclined backwards, long and slender, the ends obtuse, and slightly curved forwards, the stiliform tooth at their extremities very short and small.

HAB. Borneo (Tampasook) ; Philippines (Bohol).

The species, when alive, has the carapace of a light red colour, with dark crimson in the middle, the lateral prolongations of the carapace being purple, with orange tips : the legs are bright red. It differs from the *Ixa cylindrica* in the lateral prolongations being inclined backwards, more slender and longer, the ends more obtuse, and curving forwards, the terminal spine is much shorter and smaller, the surface of the carapace is less granular, the middle region is not so deeply notched on each side, the dorsal grooves are narrower and deeper, and the hind groove is more transverse.

### 4. HARROVIA, *Adams & White*.

*Thorace* subpentagono, dense tomentoso, lineis duabus elevatis, tuberculisque quatuor obtusis ; marginibus latero anterioribus dentibus tribus obtusis.

*Fronte* valde rectâ in medio emarginatâ, angulo canthi externe prominente dentiformi.

*Chelis* granulosis, brachio supra spinis duabus interne spinâ duplicatâ, carpo tuberculo unico, manu cylindricâ sulcatâ, digito ad basin tuberculo parvo externe.

*Carapace* subpentagonal, densely tomentose, with two transverse raised lines on the upper surface, each ending externally in a prominent blunt tubercle, and two faintly-impressed lines posteriorly ; latero-anterior margins with three obtuse teeth, the anterior small and rounded, the middle large and more prominent, and the posterior strong and conical.

*Front* very straight, emarginate in the middle, the inner angle of the orbits forming a strong tooth in the same line as the front.

*Fore-legs* granulose, twice the length of the carapace; third joint with two spines on the upper edge, and a double spine on the inner edge; fourth joint with a single tubercle above, and an elongated simple lobe externally; fifth joint subcylindrical, with two longitudinal grooves externally, and a single groove internally.

*Claws* short; upper claw curved, with a single small tubercle, externally, near the base, lower edge with numerous teeth; lower claw triangular, grooved externally, the upper edge sharp and dentate.

*Abdomen* (of female) seven-jointed, tomentose, the edges fringed with coarse short hairs.

1. HARROVIA ALBO-LINEATA, *Adams & White*. (Tab. XII. Fig. 5.)

*Thorace* rubro, lineis pallidis.

*Chelis* carmineis, infra rufescente.

HAB. Borneonem et Insulas Philippinas.

*Carapace* of a red colour, with light transverse markings.

*Fore-legs* crimson; under surface of body rufous.

HAB. Borneo. Philippine Islands.

5. IPHIS, *Leach*.

1. IPHIS NOVEM-SPINOSA, *Adams & White*. (Tab. XIII. Fig. 1.)

*Thorace* lævi granuloso, granulis antice aggregatis, postice sparsis, marginibus latero-anterioribus spinis duabus subobtusis prorsum et extrorsum porrectis; marginibus latero-posterioribus spinis duabus retrorsum et extrorsum directis, infra has spinis duabus brevis conicis retrorsum et extrorsum porrectis; margine posteriore, spinâ longâ rectâ in medio retrorsum directâ.

*Fronte* in lobos duos conicales divergentes divisâ.

HAB. Insulas Philippinas.

*Carapace* polished, granular, granules close together in front, more sparsely disposed towards the hinder part; latero-anterior borders with two short, stout, somewhat obtuse spines directed forwards and outwards; latero-posterior borders with two long spines directed backwards and a little outwards, with their ends curving upwards, and below these, nearer the middle line, two short conical spines proceeding backwards and outwards; posterior border with a long straight spine in the middle, projecting directly backwards.

*Front* ending in two conical diverging lobes.

HAB. Philippine Islands (Mindoro).

This species differs from *Iphis septem-spinosa* of Leach, in the general form of the carapace, which is less triangular, more oval, covered with granules, and wants the sharp ridge which extends along the middle of the carapace of *I. septem-spinosa*; in the lateral spines being short and curved; in the possession of two additional spines placed anteriorly to these latter; in the greater comparative size of the upper posterior pair of spines; in the

stouter condition of the prehensile and ambulatory feet ; and in the well-marked peculiarity of the front.

#### 6. IPHICULUS, *Adams & White.*

*Thorax* sublatisior quam longior, denso tomento spongioso obsitus ; marginibus latero-anterioribus spinis quatuor fimbriatis ; marginibus latero-posterioribus tuberculis duobus obtusis, parte coarctatâ lincis impressis duabus longitudinalibus, et sulco transverso, postice tuberculo subelevatusculo.

*Frons* tuberculis duobus depressis, fissâ separatis.

*Chelæ*, manu gibbosâ, digitis perlongis, gracilibus, multis denticulis longis instructis.

*Abdomen* (maris) ad articulum basalem foveâ profundâ sublongitudinali.

*Carapace* rather wider than long, covered with a dense woolly tomentum, resembling fine sponge ; latero-anterior margins with four fringed spines, increasing in size from the front backwards, the fourth spine, forming the latero-anterior angle, being very strong and prominent ; latero-posterior margins with two obtuse tubercles, separated by a sinus ; the coarctate portion of carapace marked by two longitudinal and one transverse groove, and ending in a rounded slightly-elevated tubercle.

*Front* consisting of two very short depressed tubercles, separated by a notch, each tubercle rounded in front ; mouth extending beyond the front.

*Fore-legs* with the fifth joint gibbous ; the claws very long and slender, with numerous fine long sharp teeth.

*Abdomen* (of male) with its basial joint with a deep sublongitudinal fovea.

#### 1. IPHICULUS SPONGIOSUS, *Adams & White.*

*Thorace* fusco, tomento denso spongioso oblecto ; lateribus, anteriore spinis quatuor fimbriatis, posteriore tuberculis duobus.

HAB. Insulas Philippinas.

*Carapace* brown, covered with a thick sponge-like woolly tomentum ; sides with four fringed spines anteriorly, and two tubercles posteriorly.

HAB. Philippine Islands.

This genus should properly follow *Ceratocarcinus*, with which it is closely allied, and should be placed in the same group as that Crustacean ; it appears, among the *Parthenopidæ*, to hold the same place as *Oreophorus* does among the *Leucosidæ*.

#### 7. TLOS, *Adams & White.*

*Thorax* latior quam longior lævis ; regionibus lateralibus valde excavatis, marginibus lateralibus trilobatis, margine posteriore excavato, loliâ bicarinatâ ; multis tuberculis parvis ad basin circumdati.

*Frons* integra rotundata deorsum reflexa.

*Chelæ* branchio triangulare, carpo supra bicarinato, manu carinâ tuberculiferâ, digitis ad fines curvatis.

*Abdomen* (femine) articulis septem, ovale tuberculosum.

*Carapace* much wider than long, smooth, the lateral regions cup-shaped, with raised edges, with an anterior and posterior groove; lateral edges divided into three lobes, the front lobe straight and reflexed backwards, the middle simple and rounded, the posterior elevated and wedge-shaped; the middle region with a strong vertical ridge ending behind in an obtuse tubercle, and on each side with two perpendicular three-sided elevations, truncated at their apices, with a small tubercle at their fore-bases; posterior margin of carapace excavated, with a large projecting lobe flattened above, with two ridges behind, a rounded elevation in front, and numerous small tubercles near the base.

*Front* entire, rounded, reflected backwards, showing a central groove on the under surface.

*Fore-legs* with the third joint triangular, the edges tuberculiferous; the fourth joint with two tubercular ridges on the upper surface; fifth joint with a tubercular keel above; claws slightly curved at the ends.

*Abdomen* (of female) oval, tuberculated, seven-jointed, surrounded by an elevated ridge.

It is interesting to see the analogous armature of the carapace with that of *Xanthasia murigera* (White) amongst the *Pinnotheridæ*. The name *Tlos* is from the town of that name in Lycia, so well described by Sir Charles Fellowes in his *Asia Minor*. It is distinct enough from *Tylos*, another genus of *Crustacea*, so as not to be confounded with it in sound.

1. TLOS MURIGER, *Adams & White*. (Tab. XIII. Fig. 2.)

*Thorace lævi*, regionibus lateralibus valde excavatis; marginibus lateralibus trilobatis; margine posteriore excavato, lobo bicarinato multis parvis tuberculis ad basin.

HAB. Borneonem.

*Carapace* smooth; lateral regions deeply excavated; side-margins with three lobes, hind margin excavated, a two-ridged lobe with numerous small tubercles at the base.

HAB. Borneo.

## X. CORYSTIDÆ.

The genus *Trichocera* is not uncommon among the islands of the Philippine Archipelago, where it is found among the reefs concealed in the coral, or hiding under stones; it has all the habits of the *Xantho* group; the *Corystes* inhabits rather deep water, preferring the same localities as the *Leucosia*, which it likewise resembles in its habits; a species of *Gomezia* was dredged by Mr. Cuming in the Philippines, but the other genera of this family do not appear to be found among the islands of the Eastern Seas.

1. TRICHOCERA, *De Haan*.

1. TRICHOCERA GIBBOSULA, *De Haan*.

Parva, pilosa, thorace dilatato, brevi, setoso, tuberculato, tuberculis mediis planis quinque transversim dispositis; lateribus 10-dentatis; fronte 5-dentatâ.

HAB. Japonian.

*Corystes (Trichocera) gibbosula*, De Haan, Faun. Japon. t. 2. f. 4; t. 13. f. 3.

Small, hairy, the carapace dilated, short, setose, tuberculated, the five middle plane tubercles disposed transversely; sides ten-toothed; front five-toothed.

HAB. China Sea. Japan.

2. TRICHOCERA PORCELLANA, *Adams & White*.

*Thorace* depresso lævi, lineis multis denticulatis transversis obsito; lateribus spinis quinque robustis acutis curvatis.

*Fronte* valde supra sulcatâ, lobis duobus obtusis dente magno externe.

*Chelis* lævibus, lineis transversis denticulatis obsitis; digito superiore supra dentato; digito inferiore tuberculis quatuor supra, lineis duabus longitudinalibus infra.

*Pedibus* posterioribus lævibus, pilis longis finbriatis.

HAB. Insulas Philippinas.

*Carapace* depressed, polished, covered with numerous transverse finely-denticulated lines, some interrupted and some continued into the lateral spines; sides with five sharp strong curved spines, the first and last simple, the others with small spines at their bases.

*Front* deeply grooved above, with two obtuse denticulated lobes, each with a large tooth externally.

*Fore-legs* polished, covered with short finely-denticulated transverse lines; claws long, with the spatulate extremities abruptly curved, upper claw dentated above, with small tubercles below, lower claw with four tubercles above, and two longitudinal denticulated lines externally.

*Hind-legs* dilated, smooth, fringed with long hairs.

HAB. Philippine Islands.

By Professor De Haan, the most able of modern Crustaceologists, this species would be referred to the division which contains *Xantho*, and we must confess that in its general appearance it has some resemblance to the Chilian genus *Parawanthus* of Lucas, of which there are specimens in the British Museum; with the genus *Thia* of the family *Corystidae* it has some considerable analogy, and may be said, in the group *Xantho*, to represent that family. Like the *Cancer (Xantho) integer* of M. De Haan, this species is of a bright yellow brown, with golden hairs (in the dried state), and both species are found in the Philippine Archipelago.

## XI. HIPPIDÆ.

The genera which compose this small but very natural group have, so far as I have observed, very nearly the same habits. They swim by sudden rapid jerks, like the *Galathea*, and appear to prefer the deep pools of the coral ledges; they are pre-eminently swimming Crustaceans, progressing but badly when taken from the water. An interesting addition to

our national collection in the form of *Notopus dorsipes*, De Haan, was obtained by us in the province of Unsang in Borneo, and a new genus (*Cosmonotus*) also rewarded our exertions while examining the same locality.

### 1. COSMONOTUS, *Adams & White*.

*Thorax* ovalis, antice acuminatus, lateribus valde compressis, in lineâ mediâ carinâ prominente, lateribus integris, angulo latero-anteriore spinâ brevi acutâ.

*Frons* profunde incisa, ad latera spina parva acuta.

*Chela* trigonales, interne planæ, externe convexæ.

*Abdomen* (maris) articulis septem, articulo ultimo trigonali.

*Carapace* oval, very much compressed laterally, especially in front, with a distinct prominent keel extending down the middle line, very strongly marked in front, but fainter posteriorly.

*Front* with a very small spine on each side of a deep angular notch, in which are placed the eyes.

*Fore-legs* strong, triangular, the upper claw arched, the lower claw small and dentated on the edge.

*Abdomen* (in the male) seven-jointed.

### 1. COSMONOTUS GRAYII, *Adams & White*. (Tab. XIII. Fig. 3.)

*Thorace* punctis multis depressis obsito.

*Fronte* valde incisâ externe spinâ parvâ acutâ.

*Chelis* trigonalibus brachio infra plano, externe convexo lineis multis transversis interruptis, supra carinato pilis fimbriato, interne concavo, carpo incurvato subcompresso, externe convexo, interne spinâ obtusâ; manu compressâ asperâ, margine superiore arcuato; digito inferiore angusto, elongato dente robusto prope extremitatem, digito inferiore brevissimo incurvato; pedibus posterioribus gracilibus brevibus.

HAB. Borneonem.

*Carapace* about an inch in length and half an inch wide, covered with numerous minute depressed punctures.

*Fore-legs* trigonal, the third joint plane on the under surface, the exterior convex with transverse, interrupted, engraved or impressed lines, the upper angle covered with long thick hairs, the inner surface concave; the fourth joint incurved, sub-compressed, convex externally, less convex internally, ending above and in front in a blunt spine; fifth joint compressed, elevated, with the upper edge arched, but not so sharp as in *Notopus*; the sides convex and covered with asperities or minutely denticulated ridges, interrupted and transverse; upper claw narrow, compressed, elongated, with a sharp apex, and a strong tooth near the distal extremity.

*Feet* short and weak as in *Notopus*; the first tibia bicarinated; the tarsus subquadrate, anteriorly bicarinate, with a scalpel-shaped claw; the second tibia one-keeled, with the tarsus

oblong, and a sharp elongated trigonal claw; the third tibia subtriangular, the tarsus short, flattened, trigonal, with a falcate claw; the fifth tibia triangular, very short, flattened; tarsus transversely ovate, with a small narrow claw.

*Abdomen* (of male) seven-jointed, the joints from the first to the sixth nearly of the same width as in *Notopus*, the last joint trigonal.

HAB. Borneo (Unsang).

*Cosmonotus* differs from *Notopus*, De Haan, in wanting the post-frontal, elevated denticulated ridge; in the dorsal keel ending abruptly in front, instead of terminating in a central frontal spine; in the front being notched, with a single spine on each side; in the carapace being much compressed, more especially in front, and in the produced and angular form, while in *Notopus* it is almost straight across the front; and in the sides being entire, with a short sharp spine at the antero-lateral angle. The species is named in compliment to J. E. Gray, Esq., F.R.S., Keeper of the Zoological department in the British Museum.

## XII. PENÆIDÆ.

A new species of *Sicyonia*, Edwards, of a scarlet colour, finely variegated with orange and yellow, with a greyish pubescence on the dorsal surface near the crest, was obtained in the Sooloo Sea together with a few *Zoææ*. The *Stenopus*, *Sicyonia*, and *Penæus*, usually swim in a slow and deliberate manner forwards, and occasionally with a sudden jerk propel themselves backwards. They keep at a considerable distance from the shore and seem to love deep still water, never appearing when the surface of the sea is ruffled.

### 1. STENOPUS, *Latreille*.

#### 1. STENOPUS HISPIDUS, *Latreille*. (Tab. XII. Fig. 6.)

*Thorace spinis multis parvis pilisque sparsis obsito.*

*Fronte acuminatâ gracili sursum directâ, non ultra articulum basali antennarum superiorum pertinente; antennis perlongis filiformibus.*

*Chelis brevioribus quam paria pedum secunda, longe ultra appendicem lamellarem antennarum inferiorum porrectis. Pari tertio pedum longiore quam totum corpus multis seriebus longitudinalibus dentium acutarum, tarsi duorum parium ultimorum pedum bifidis.*

*Abdomine laminâ mediâ pinnæ caudalis in centro sulcato, supra seriebus duabus spinarum.*

HAB. Insulas Philippinas.

*Stenopus hispidus*, Latr. R. A. vol. iv. p. 93. Cuv. R. N. (Croch), t. 50. f. 2. Edw. Crust. vol. ii. p. 407. t. 25. f. 1. *Palaemon hispidus*, Oliv. Enc. vol. viii. p. 666. Seba, vol. iii. t. 21. f. 617.

*Carapace* covered with numerous small spines and scattered hairs.

*Front* pointed, slender, elevated, not extending beyond the basal joint of the upper antennæ; antennæ very long and filiform.

*Fore-legs* not so long as the second pair, but extending considerably beyond the lamellar appendage of the lower antennæ. Third pair of legs longer than the whole body, with many longitudinal rows of pointed teeth; tarsi of the two last pairs of legs bifid.

*Abdomen* with the middle lamina of the caudal fin grooved in the centre, and furnished above with two rows of spines.

HAB. Coast of Borneo, and Philippine Islands.

Our figure is coloured from a living specimen taken by me in the China Sea. *A. A.*

---

[*Additional Species.*]

CRYPTOSOMA, *Brullé.*

CRYPTOSOMA ORIENTIS, *Adams & White.* (Tab. XIII. Fig. 4.)

*Thorace* rotundato; marginibus latero-posterioribus rectiusculis. Thorace post frontem et oculos sine sulcis.

*Fronte* tribus lobis subacutis.

*Pedibus* gracilibus; articulo prætersali tenui, non incrassato.

HAB. Maria Orientalia.

*Carapace* subcircular, as broad as long, narrowed behind, covered with numerous small red tubercles, and five rows of larger tubercles; latero-anterior margins distinctly dentate; latero-anterior angle with a rather long and sharp spine.

*Front* with three subacute lobes; upper margin of orbit deeply notched in the middle.

*Fore-legs* with the third joint armed with two long spines on the outer side near the end, the fourth joint tubercular, the fifth joint compressed, with an elevated toothed crest above, and covered externally with tubercular spines.

*Hind-legs* smooth, slightly compressed, slender, with the pretarsal joints not thickened or dilated.

*Abdomen* (in the male) four-jointed.

HAB. Eastern Seas.

This species comes very near to *Cryptosoma cristatum*, figured by Brullé in Webb and Berthelot's Hist. des Iles Canaries (Tab. Crust. fig. 2). The *Mursia cristata*, Leach; *Cycloes granulosa*, De Haan, Faun. Jap. t. 19. f. 3; *Thealia acanthophora*, Lucas, Ann. Soc. Ent. Fr. 1839, p. 579. t. 21. f. 1 (*Mursia armata*, De Haan, Faun. Jap. p. 73. t. 19. f. 2); and this species, belong to a group of *Calappidæ* which seems very widely distributed.

XENOPHTHALMUS *White.*XENOPHTHALMUS PINNOTHEROIDES, *White.* (Tab. XII. Fig. 3.)*Thorace* punctulato, sulcis duobus longitudinalibus ab oculis porrectis, lateribus antice ciliatis.*Pedibus* articulis ciliatis.

HAB. Insulas Philippinas.

*Xenopthalmus pinnotheroides*, *White*, *Annals and Mag. Nat. Hist.*

*Carapace* with the sides, in front, having a sharp ciliated edge; carapace punctured; two slight waved longitudinal grooves, one extending from each eye over the back of the carapace; most of the joints of the legs ciliated.

HAB. Philippine Islands.

We figure this curious genus on account of our being able to give a coloured representation from a drawing made from life in the Eastern Seas. *A. A.*

RHABDOSOMA, *Adams & White.**Oxycephalus*, *M. Edwards.*

We regret that the state of the only specimen in the British Museum is such that we cannot give the generic character with that detail which we should wish. It is founded on the third species of Professor Milne Edwards, indeed Mr. White has the authority of that eminent Crustaceologist that it is his very species: it is so different from the *Oxycephalus piscator*, *M. Edwards* (*Crust. III. p. 100. t. 30. f. 10*), that we have traced the figure of *O. piscator*, and added it below that of the *O. armatus*, to show the difference. Some day it may be proved to be a sexual character, when of course our name will sink, but *as yet* we know of no such discrepancies in the sexes of these Crustacea.

The head is as long as the rest of the body, and ends in a very long beak; from the state of our specimen we cannot describe this, but indicate it on the plate from a drawing made at the time of capture. The immense length of the body and the beak would sufficiently mark this generic form. The first two pairs of legs are shown in the figure, which must serve till we can procure further specimens, when we hope to give ample details of this very singular crustaceans and to analyse its characters at length. It forms a singularly interesting link between the *Amphipoda* and *Læmodipoda*, uniting, as it were, the two; we should like to have this form examined particularly by Prof. *M. Edwards* or Dr. *Kroyer*.

RHABDOSOMA ARMATUM, *Adams & White.* (Tab. XIII. Fig. 7.)*Oxycephalus armatus*, *M. Edw. Crust. III. p. 101. pl. 30. f. 10*, copied. (Tab. XIII. Fig. 8.)

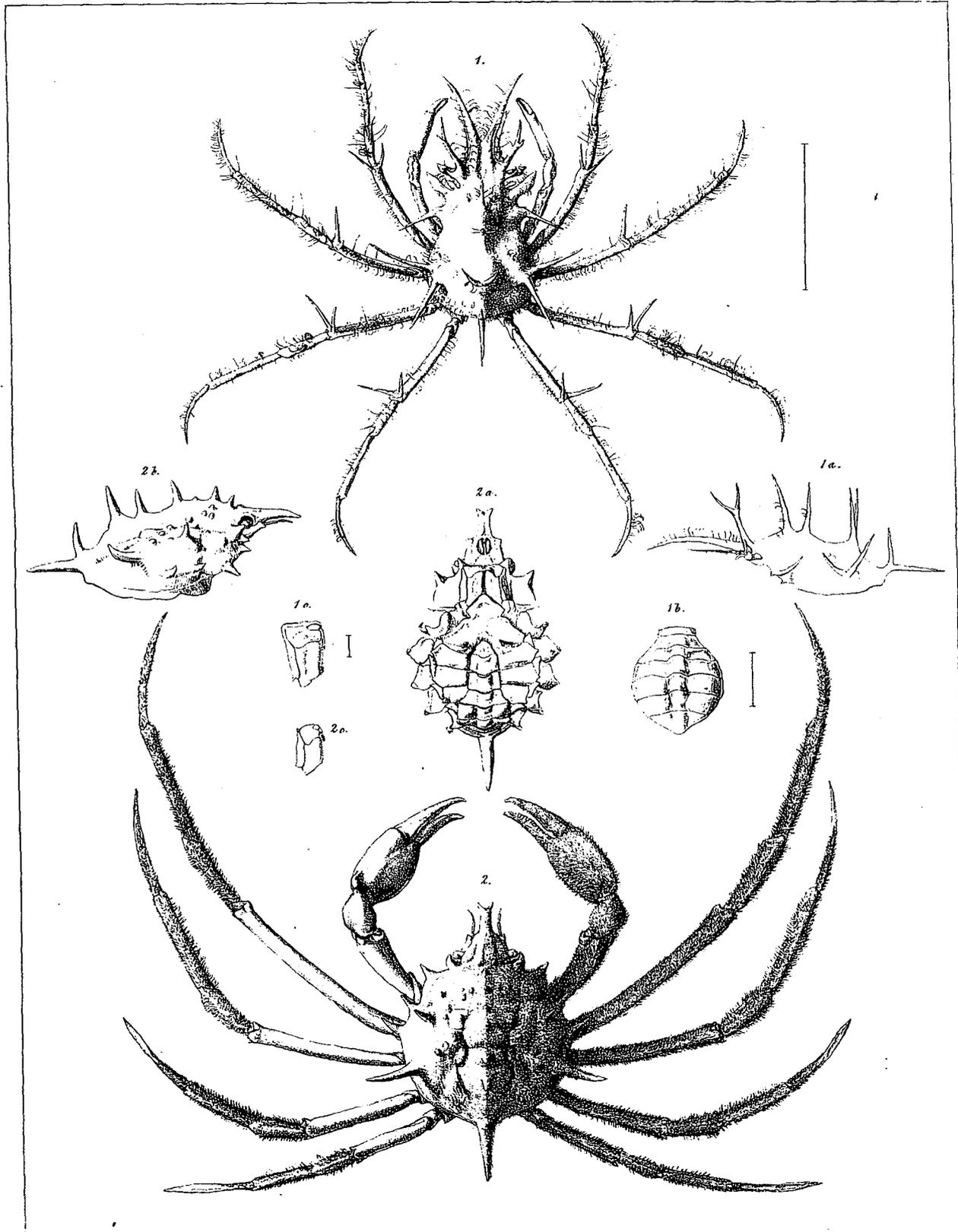
The specimen described by Professor Milne Edwards was found by MM. Quoy and Gaimard in the ocean between Amboina and Van Dieman's Land, and is now in the Paris Museum. Ours was taken during a calm, floating on the surface of the South Atlantic Ocean.

REEVE, BENHAM, AND REEVE,  
PRINTERS AND PUBLISHERS OF SCIENTIFIC WORKS,  
KING WILLIAM STREET, STRAND.

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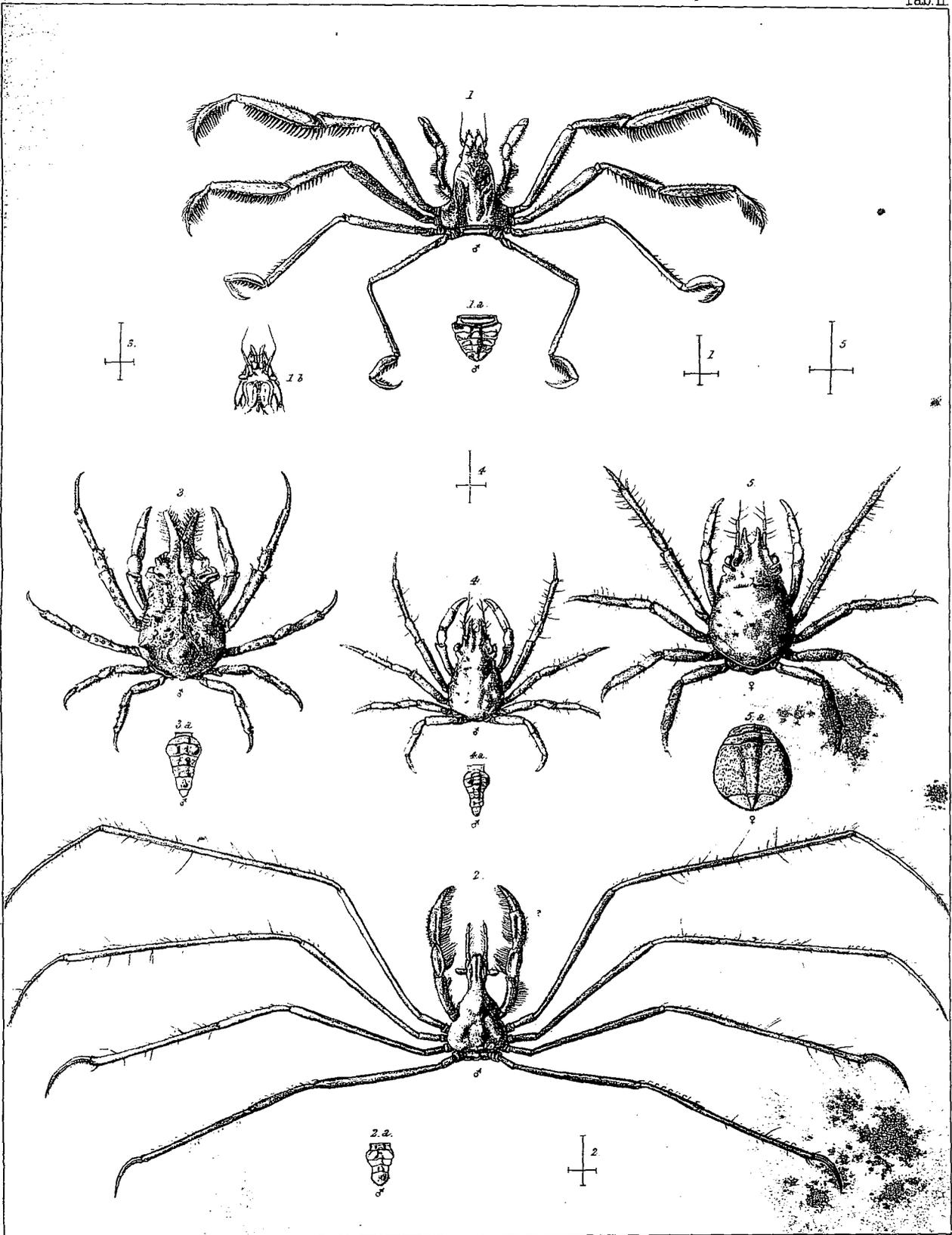
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William Wing, del. et lith.

on stone by Rees, Brothers.

1. CHORINUS ACANTHONOTUS, Adams & White. 2. DOCLEA CALCITRABA, White.



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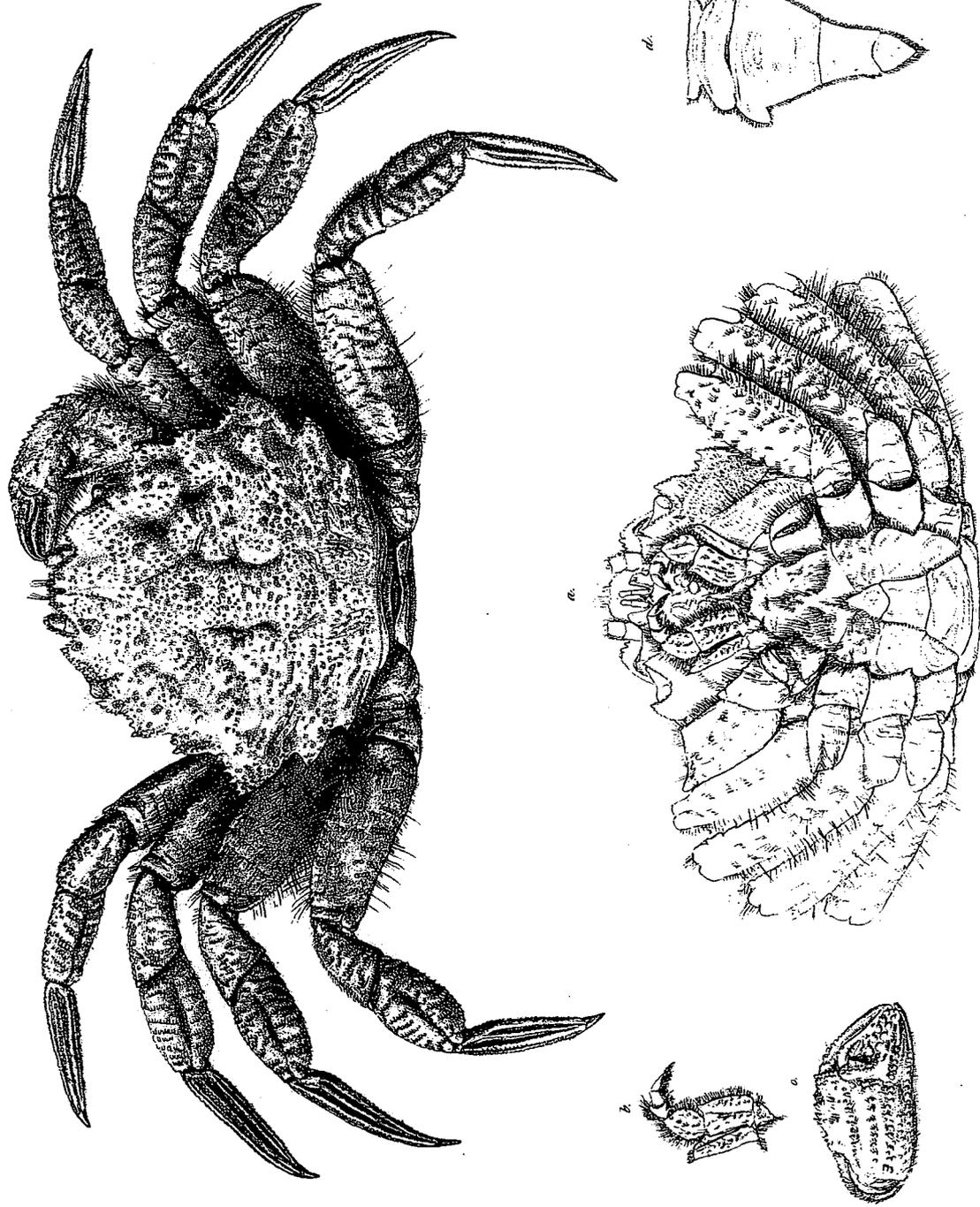
Leach, Smith, & Esch, imp.

1. ONCINOPUS NEPTUNUS. Adams & White.

3. CHORINUS VERRUCOSIPES. Adams & White.

2. INACHUS LORINA. Adams & White.

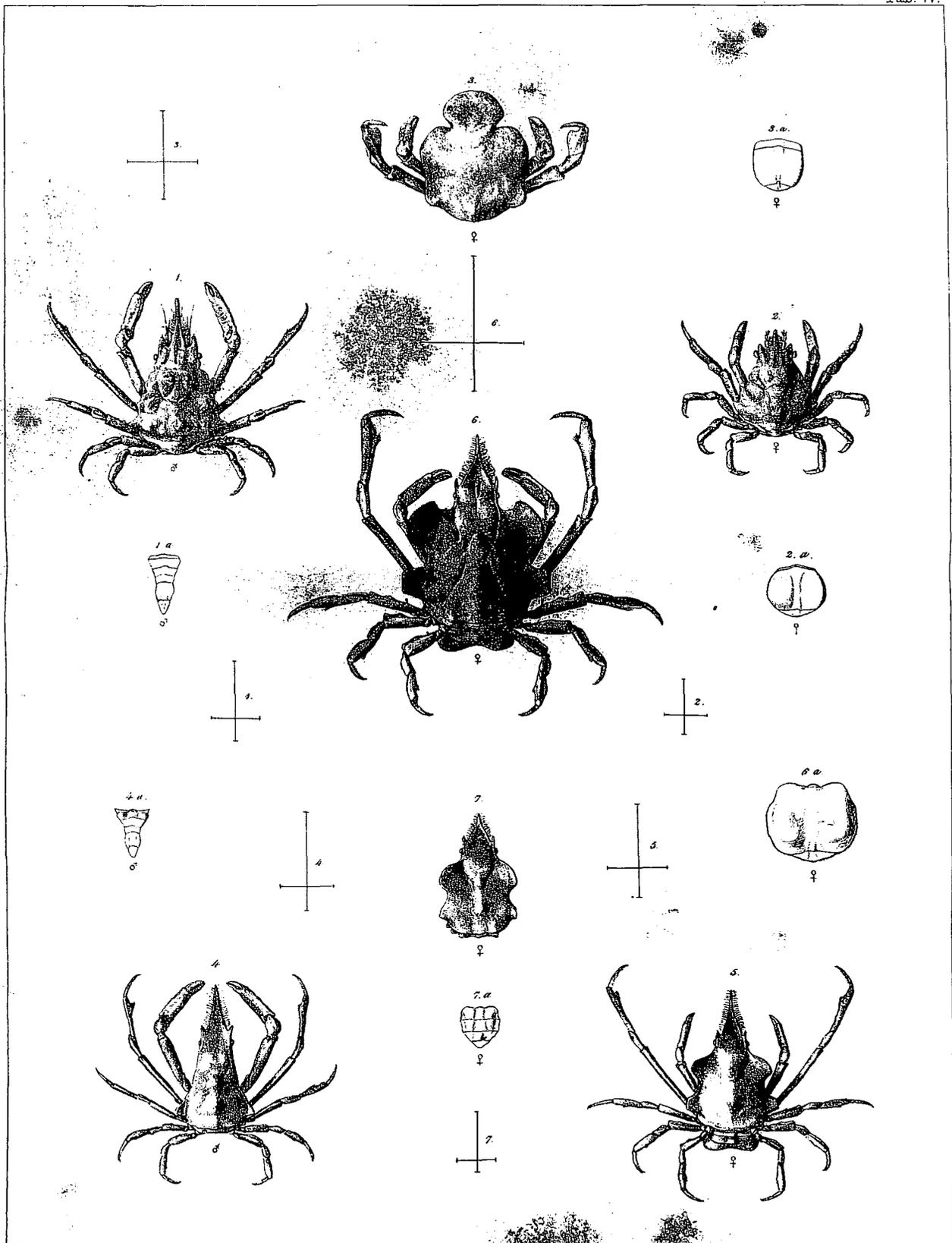
4 & 5. PISA PLANASIA. Adams & White.



William Wang, del. et lith.

*TELMESsus SERRATUS*, White.

Printed by Rowe, Brothers.



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Reeve, Dehlan & Reeve, imp.

1 & 2. MENÆTHIUS SUBSERRATUS. ♂ & ♀. Adams. WING. HUENIA FRONTALIS, A & W.

4. 5. 6 & 7. HUENIA PROTEUS. De Haan.