

XLI. *Descriptions of some undescribed exotic Crustacea.*  
By ROBERT TEMPLETON, Esq., R.A., &c.

[Read 1st June, 1835.]

THE following pages contain notices of a few of the minuter *Crustacea* which were picked up either at Mauritius or on the way thither; they are interesting from their either presenting new forms, or adding species to those genera of which European species alone have been yet detected. A considerable number yet remain unexamined, which I hope will prove sufficiently interesting to form the subject of another memoir.

Artillery Barracks, Woolwich,  
May, 1835.

ANISOPUS DUBIUS. Pl. XX. fig. 1.

Greenish, dotted over with reddish brown specks. Head large, subquadrangular, carrying 4 antennæ, the superior nearly as long as the body, and exceeding in length by about one fifth part the inferior; the 1st joint is minute, the 2nd large and thick, the 3rd elongate, nearly cylindric, and wanting the little process which characterizes the true *Gammari*, 4th joint multiarticulate, tapering. The inferior antenna has the 2nd and 3rd joints, subequal, much longer than any of those of the superior, and the remaining similar, but of smaller dimensions. Both antennæ are spiny or hairy. The thoracic rings are narrow, and extend inferiorly into plates concealing the upper part of the 5 anterior pairs of legs. Those of the abdomen are much larger and end in a 4-articulatèd tail, with a jointed stylet on each side proceeding from the inferior posterior angle of the ultimate and penultimate articulations. The first pair of legs is extremely minute and terminates in a simple claw, the 2nd much longer, as are the 3 succeeding pairs, and terminates in joints slightly dilated, the last carrying a tolerably strong curved claw. The 3rd pair has the last joint very much dilated, subtriangular, not toothed, but bearing a very strong curved claw; the posterior edge is waved and hairy. The 2 succeeding pairs of legs resemble the 1st pair except in their greater size; but the 6th and 7th pairs, of nearly equal dimensions, exceed all the anterior legs in being both much longer and much more robust, and besides differ in having the coxæ very much dilated, and the last joint of each leg clavated, surmounted by two blunt teeth, and a large dentated curved claw di-

rected forwards. Immediately behind these legs arises, from the inferior part of each joint, the bifurcate articulated appendages which are called fin-feet; so that all the rings of the body have either true or fin feet or styles articulated to them, in this respect differing from all hitherto noticed genera.

This species swims with considerable rapidity and has all the habits of our common European marine *Gammari*. Its size is about  $\frac{1}{4}$ th of an inch, and its colour subject to but little variety, being of a greenish tint more or less brownish in the specimens I have examined. In its generic characters the great and disproportionate length of the 2 last pairs of feet, the fin-feet arising from the succeeding joints, and the appearance presented by the antennæ, which are much longer than in the contiguous genera, at once distinguish it. The claws also offer distinctions.

Fig. 1. *a*, The animal magnified.

*b*, The last joint and claw of the 6th pair of legs.

The feet of one side only are figured, to prevent misconception or confusion in the drawings.

THAUMALEA DEPILIS. Plate XX. fig. 2.

*Erythrocephalus melanophthalmus*? Tilesius, Neue Ann. Wetterausch. i. p. 6. pl. xxi. *a*. fig. 5.

Body hyaline, with a few dark specks, especially along the edges of the abdominal plates or rings. The head is quadrangular, not large; the eyes deeply imbedded in it; front retracted inferiorly, from about its middle arise the superior antennæ, which are short and tumid; 1st joints short, forming together a truncated cone on which rests the elongate spindle-shaped 4th joint. The inferior antennæ arise from the inferior part of the frontal surface; they are much smaller than the superior, composed of 4 joints, of which the 1st is small and obconic, the remainder in length subequal, the last conic. The body swells out to about the 5th ring, when it again becomes gradually reduced in size and ends in a bifurcate articulated tail. There are only 6 legs apparent, the 2 first pairs being very short and apparently without claws, the 4 posterior pairs of about equal length, tapering, and with slender slightly curved claws. From the abdominal joints proceed bifurcate articulated appendages, but, as well as the whole animal, apparently devoid of hairs.

This minute species swims but badly, having none of the celerity of motion so conspicuous among the *Gammari*, to which it bears resemblance in its form. It differs from every genus I am acquainted with, in the antennæ, in the relative dimensions of the legs, the

elongate and undilated form of the tarsal joints, and in the claws. I confess my inability to allot to it its proper place among the minute *Crustacea*, the differences being in fact more conspicuous than qualities by which its affinities to any one genus can be traced. It was found off Port Natal, in the summer of 1835, in lat. 37° S. and 21° East, while I was searching for *Zoeæ* in the sea-water. It is about  $\frac{1}{4}$ th of an inch in length.

Fig. 2. *a*, The animal greatly magnified.  
*b*, One of the inferior antennæ.

ANOPHERURA MINUTISSIMA. Plate XX. fig. 3.

*Cyclops ecornis*? Tilesius, Neue Ann. Wetterausch. i. p. 7. pl. xxi. b. fig. 15.

Dark greenish. The head very large, with two minute spines in front curving downwards over the base of the superior antennæ. Superior antennæ of about  $\frac{1}{3}$ rd of the length of the body, with two rather elongate joints about their middle; the rest short, and some of them spiny or hairy. Inferior antennæ with the apical joint resembling a straight claw, the preceding joint being contracted posteriorly at its middle and furnished with short thick hairs. Beneath the head project two pairs of legs, the 1st with the joints hairy and successively smaller until they reach the tarsus, which is dilated, ovate, and furnished with a claw directed forwards. The last pair of legs is much larger and longer; 1st joint short and thick; next elongate, a little contracted near its middle, and having projecting from its distal head immediately in front of the articulation a toothed spine which presents a most singular appearance; the 3rd joint is also elongate, not so thick, contracted beyond its middle, and spiny along the back; the 4th is about of equal length, and carries a set of curved spines and a claw. The 4 thoracic (?) annuli are successively smaller, and furnished with bifid appendages attached to lateral toothed plates, or processes from the rings; and the tail is composed of six joints, numerous articulated and bifid at its extremity, and stands straight up at right angles to the line of direction of the body when the animal is at rest. The body is never rolled up in a ball and is quite opaque. It is about  $\frac{1}{3}$ th of an inch long. It was found among marine plants.

Fig. 3. *a*, The animal magnified.

PLEXOCERA MIRABILIS. Plate XX. fig. 4.

Body and large joint of the antenna black. Head white or hyaline. Eyes sessile. Antennæ large, elongate, composed of 5 joints; the first two subequal, and apparently subdivided or partially subdivided;

the 3rd nearly as long as both taken together, spindle-shaped, and supporting the extreme joints, which are reniform, closing upwards or forwards on each other as the finger does into the palm of the hand, the apical joint having two long hairs arising from its tip. The anterior leg (?) with two elongate joints projecting beyond the facial plates, the tip surmounted by two hairs. Second leg with a large dilated tarsus, and a strong claw directed forwards, closing on the tarsus during each sweep of the leg with a snapping motion, rapid and very peculiar. The third pair of legs resembles in every respect the first pair, excepting that it is more profusely furnished with hairs at the tip. From the three succeeding abdominal annuli proceed inferiorly 4-articulated appendages or fin-legs, elongate and hairy, especially at the tips; and between these and those of the opposite side curves forwards the tail, which terminates in a thin angulated hyaline process.

This singular little animal swims with great rapidity, the antennæ being widely separated, and their apical joints almost in perpetual motion, seizing apparently on objects so minute as to escape my notice. When at rest the tail and posterior legs were folded in, and the antennæ downwards, so that the animal resembled a ball, a peculiarity noted by Risso in his genus *Typhis*; there were here however no thoracic plates beneath which they could be concealed. The snapping spring-like motion, with which it moved the claw of the second pair of legs struck me as very peculiar, and as indicative of a degree of vivacity which is rather rare among the smaller *Crustacea*, as they usually seize upon objects with an appearance of deliberation and dread, the result most probably of dear-bought experience.

Fig. 4. *a*, Natural size.

*b*, The animal as it appears when swimming.

*c*, A very magnified view.

*d*, The tail.

*e, e'*, The last joints of the antennæ, exhibiting the apical stretched out and folded in upon the other.

*f*, The claw of the second pair of legs, with the tarsus on which it plays.

#### CERAPUS (*Say*) ABDITUS. Plate XX. fig. 5.

Brownish, antennæ and legs paler. Body elongate, composed of about 14 rings, including the head and tail, the latter having about 3 joints. The head is large, subtriangular, most dilated anteriorly, a minute rostrum projecting forwards between the superior antennæ. The eyes are nearly sessile and smooth. The front is almost vertical and gives origin to four nearly equal antennæ; the superior tapering, about  $\frac{3}{4}$ ths as long as the body, has three joints of nearly

equal lengths, and a fourth 5-articulate about as long as the two which precede it. Of the three the 1st is somewhat thicker, and perhaps shorter than the two succeeding. The inferior antenna has the 1st joint very short, thick, and somewhat conical, and the 2nd and 3rd much longer and thicker than the corresponding joints of the superior, the apical remaining part, or 4th joint, being but very slightly longer than either; it also is composed of five joints. Both sets of antennæ are hairy, the hairs arising from the inferior surface in a double row, and becoming longer as they approach the apex of each of the first three joints; in the remaining part they are short, in threes or fours, and more resembling spines than hairs. Between the antennæ stand obliquely upward two palpi, each composed of two elongate filiform joints, the extreme with a very long brush of hairs. Lower down we find three joints of another (maxillary?) palpus, the extreme joint being very minute, nearly as long, but not so rotund as that upon which it rests, and not so hairy. The joint supporting the head is small, appearing like a neck, and gives origin to no legs. One pair however arises immediately in front of it from the after part of the head, whose basal joints are small, the two apical longer, more dilated and angulated, the angles giving rise to pencils of hairs. From the inferior part of the apex, which is transversely truncated, arises a short much-curved claw, not fitted into any perceptible fissure in the under part of the joint. The 2nd pair of legs arises from the 2nd ring from the head, and has the penultimate joint extremely large, subquadrangular, with a large tooth projecting from the inferior posterior angle, and another smaller from between it and the surface of articulation of the last joint. The last joint arches over the above-mentioned teeth, and has a strong hooked claw, arising from the inner side of the apex. The last pair of legs have the same number of joints as those described, but they are devoid of peculiarity, being subequal and tolerably cylindrical.

From the 8th annulus arises on each side one of those bifid hairy appendages or fin-feet which are common to the *Gammari*. They differ in no essential point from the appearances presented by them in that tribe; but from the inferior posterior part of the same ring, and partially concealed by a lateral plate, is to be found on each side a distinct leg, closely resembling the third pair, but wanting the claw, a minute joint with a tuft of hairs replacing it. The two succeeding annuli each offer one of these last, but they become successively smaller and more filiform.

The entire animal is about  $\frac{1}{4}$ th of an inch long, exclusive of the antennæ, and it presents some peculiarities, with one exception,

unique in this family. It has formed for itself or seized upon a little membranous tube, nearly  $\frac{1}{4}$ th of an inch long, which does not resemble the case of *Tubularia*, but seems composed of a series of rings, and resembles in texture the papyritious covering of the pendulous wasps'-nests. It is perfectly cylindrical, of a brown colour, and opaque. When disturbed the little animal retires within this tube, the tips of the antennæ alone appearing, with which it continues to investigate its neighbourhood; and whenever the feeling of perfect security prevails, it comes out as far as the second or third ring from the head, the antennæ being perpetually in motion, extended to the right or left, or as if lashing the objects about it. When it wishes to change its place it seizes with its claws the little fragments of sea-weed about it, and dragging, urges itself forward. I have never seen it dash itself through the water by any mode similar to that of the *Gammari*; and I should infer that the tube was its natural place of residence from the want of legs or fin-feet at the middle rings, in which it differs from *C. tubularis* of Say, that author figuring a regular succession of both. I have observed the tail slightly protruded, and the members which are sketched as attached to adjoining rings used as feelers. While watching it, which I did for some hours, I was exceedingly surprised and amused to find it disappearing from one end of the tube, and reappearing like magic at the other, having doubled itself up towards its belly in the passage, but with such quickness, considering the narrow calibre of its mansion, that I could hardly credit my eyes but that it had two heads, and indeed a gentleman who was in the pavilion with me at the time could not be persuaded to the contrary. The animal however scarcely remained a second at this extremity, but shot back to the one it had formerly occupied; and during the time I watched it I never saw it remain permanently at it, or rather I should say for a longer period than a second, or second and half at furthest. The maxillæ resemble those of *Scolopendra*, but are very minute, and I believe the smaller palpi arise from them or a very closely adjoining part, but vision is so indistinct in so small an object as to make me hesitate in affirming this. The circulation of the blood was distinctly visible in the antennæ, and the globules, unlike those I had hitherto examined, were rotund and of comparatively large dimensions. From the upper part of the head a spine, with a very dilated base, extends forwards to between the roots of the superior antennæ. The eyes were black, with a pale encircling ring. The head brown, dotted with white, especially behind; and the antennæ pale, annulated imperfectly with reddish brown.

- Fig. 5. *a*, The tube, of its natural size.  
*b*, The animal out of its tube.  
*c*, The animal as it appears in its tube.  
*d*, The head seen above, showing the palpi.  
*e*, The superior antennæ.  
*e'*, The tip of the same antennæ.  
*f*, The inferior antennæ.  
*f'*, The tip of the inferior antennæ on the same scale.  
*g*, The palpus standing obliquely upwards.  
*h*, The (maxillary?) palpus which is attached to the parts of the mouth.  
*i*, The first pair of legs.  
*j*, The two ultimate joints with the claw of the second pair of legs.  
*k*, The supplemental legs arising from the joints immediately preceding the tail.

CAPRELLA (*Lam.*) SCAURA. Plate XX. fig. 6.

Pale brown. Body linear. Superior antennæ twice as long as the inferior: the 1st joint thick, contracting a little towards its apex; 2nd elongate, obpyriform; 3rd very slender and waved; 4th equally long, with minute spines arising from teeth or elevations on the inferior surface, beyond its middle subarticulated. Inferior antennæ with the first 2 joints minute; 3rd elongate, and similar in form to the 2nd of the upper antennæ; 4th of about the same length, waved, and, as well as the last, with a double series of hairs arising from the inferior edge, and increasing in length as they approach the apex of the joint; 5th not so long, tapering, spiny, and articulate. Eyes sessile, compound, in an irregular arch behind the root of the inferior antennæ. Head rotund, with an occipital spine, and a pair of feet, 5-jointed, attached behind: a triarticulate claw-bearing palpus projects in front. The joint of the body which supports the head is long, cylindrical in the middle, but swollen out at the extremities. The second joint of the body is much the longest, tumid posteriorly, and giving attachment at the thickest part to a very elongate slender pair of legs. The 1st joint very long and waved, 2nd and 3rd minute; 4th dilated, especially in the middle, hairy, with two toothlike processes inferiorly and a large dentate claw articulated to its apex. The two next joints of the body are shorter and rather thicker than the anterior, and have attached, a little beyond their middle, at a part which juts out, two vesicular appendages, which are narrow, ovate, and scarcely so long as the joint from which they originate. The three last joints give attachment posteriorly to three pairs of legs, successively longer, monodactyle and hairy; the 1st leg has five joints, the 2nd six, and the last four. Two small spines arise from near the base of the ultimate joint in each leg.

From the tip of the antennæ to the claw of the hind leg measures

about one inch. The animal is very slow and deliberate in its motions. It was found among marine plants at Rivière Noir, Mauritius.

Fig. 6. *a.* The animal magnified.

*b.* The anterior part of the head, showing the anterior pair of legs and the palpus.

*c.* Extremity of superior antenna.

CAPRELLA (*Lam.*) NODOSA. Plate XXI. fig. 7.

Pale brown, with a darker longitudinal line marking the position of the intestinal canal. Head very short, the separation from the 1st joint being only distinguishable by a minute dark dorsal line; the eyes black and smooth, not apparently compound: superiorly the head is furnished with a small blunt spine curved forwards. Superior antennæ longest: 1st and 2nd joints robust, elongate, and almost ever porrect, the greatest amount of motion taking place at the articulation between the 2nd and 3rd joints; the 3rd is shorter, somewhat obconic, and supports the remaining joint, which is tapering, multiarticulate, the subdivisions being nearly of equal lengths, and furnished with a few short, often articulated, blunt spines towards their distal extremities. The three first joints have similar processes, but they are not confined to this latter position. The inferior antenna is in length about one third less; in other respects it bears a considerable degree of similarity to that just described. As far as I could observe, the animal has a double set of palpi, but projecting so little beyond the buccal plates as to be scarcely distinguishable; the hook and one joint of the inferior was alone porrected sufficiently to be sketched. The 1st joint of the body is short, performing the office of a neck, and has arising from the head immediately in front of it a small leg, precisely similar to that attached to the anterior part of the succeeding joint, and of which a more magnified sketch is given. The 2nd joint of the body is longer than the head and 1st joint taken together, but both are so extremely short as to distinguish this from all other authenticated species. In some specimens this joint and some of the others have two or three small processes in groups, moveable and occasionally articulated, projecting from the back. The 3rd and 4th joints of the body are rather elongate, and each has a flat pyriform vesicular appendage articulated to it, within whose edge is distinctly to be seen a large vessel carrying blood; the globules are oval, and easily to be distinguished passing across the appendages in wavy lines with irregular velocity, pausing sometimes as if stagnated, and again urged forwards until they mingle in the stream, returning along the posterior edge of the



appendage. Leach and Desmarcst consider these as rudimentary feet, while Latreille looks upon them as branchiæ. There seem no laminæ or offsets from them passing into the water, and in delicacy or transparency they are not in the least different from the legs or antennæ, so that I am inclined to concur in the correctness of the former of these opinions. In the females, between the pairs of appendages, and extending from the anterior inferior extremity of the third segment of the body to the posterior part of the fourth, is to be found a complicated apparatus, which Bosc calls "un ovaire très volumineux lorsque la fécondation est opérée." Its essential parts consist of three mobile plates; one placed anteriorly, and arising by an articulation from the anterior inferior part of the 3rd joint, is most external, and permits the posterior edge of the second plate to project a little from beneath it. The lateral edges of this plate are membranous, and continued into the exterior covering of the sides of the 3rd and 4th joints, or into little lateral plates occupying the same position, so that a free motion is allowed on the anterior extremity as a centre, towards the belly of the animal, and producing a sliding motion over the other two plates. The second plate is narrower, lies beneath the first, and covers the apical half of the third or posterior plate. The third has similar attachments to that first described from the posterior part of the fourth joint, but has its lateral or superior edge, unlike it, irregularly waved, and extended as far forwards as the vesicular appendage to the 3rd joint. These plates are continually in motion, moving like a hinge on their basal extremities, and sliding over each other against the contiguous plate, as the free edges were made to approximate or recede from the belly of the animal. I succeeded in abstracting a number of young from the cavity, which is perhaps capable of holding a dozen or fifteen. They were not inclosed in a shell, being probably beyond the period required for their sojourn in the egg. They were however rolled up in a little oval ball, the legs and antennæ being all turned in. The fleshy opaque part of their body was at a tolerable distance within the hyaline membrane forming the exterior covering of the body, especially in the legs and antennæ, where it appeared occupying the centre of the joints like a little heap of dark globules. The joints were proportionably shorter and thicker, but equally numerous as in the adult state. At this period respiration was going on, for I saw the plates forming the ovary in continual motion, the water gliding in and out as the plates were moved with the sliding motion over each other. The edges of the plates are fimbriated to prevent the escape of the minute ova, and at the same time to admit of free passage to the water; and the blood was distinctly seen penetrating

through vessels; which traverse the plates principally in a longitudinal direction. Of the remaining segments of the body the fifth was by far the largest and had several clusters of the little processes noticed above; and to its distal extremity was attached a leg composed of five hairy joints, the last having a strong hooked claw. The next segment was smaller, but with a much larger leg, and the last smallest of all, and with by far the largest pair of legs, and a little subtriangular process placed between and above their attachment.

This species of *Caprella* is found in considerable numbers among the marine plants at Mauritius; it is about  $\frac{1}{4}$ th of an inch long, and moves with considerable velocity through the water. It is not voracious, never follows any of the smaller *Crustacea* to seize on them, but contentedly devours the very minute ones which chance throws in its way. The specimens vary a little in the appearance of the joints.

Fig. 7. *a*, Animal magnified.

*b*, Part of the second and remaining joints of the superior antennæ.

*c*, Last joint of the inferior antennæ.

*d*, Second leg.

*e*, Second joint of that leg seen obliquely.

*f*, Ovary. *f* 1, Anterior part of the third joint. *f* 2, Fourth joint. The arrow shows the direction of the current of blood.

*g*, The young; the joints equally numerous as in the adult, but proportionally shorter and thicker.

*h*, The fimbriated margin of one of the plates seen from below.

SAPPHIRINA (*Thompson*) FULGENS. Plate XXI. fig. 8.

(Syn. *Oniscus fulgens*, Tilesius, Neue Ann. Wetterausch. i. p. 10. pl. 213. fig. 24. *Sapphirina Indicator*, Thomps. Zool. Researches, pl. 8. fig. 2.)

Minute, hyaline, but usually returning a most beautiful ultramarine blue tint, or transmitting the supplementary colour; ovate. Head large; eyes two, central, brick-coloured, with a darker middle; antennæ two, spiny, triarticulate (?), small, the last joint alone projecting beyond the head. Body composed of eight segments, the most anterior as broad as the head, from thence gradually diminishing in extent as they approach the posterior extremity of the animal; last ring arched, furnished with a small hairy scale or appendix on each side; fin-legs numerous.

This little animal moves very slowly through the water, having to depend entirely on the fin-legs for its progress; but the brilliancy of its tints makes it an object of great attraction, and leads the observer to suppose its size much greater than it really is; at a depth of five or six feet it seems as large as a shilling, and still larger at night,

when it becomes luminous. It was found in great numbers in calm weather off the southern peninsula of Africa.

Fig. 8. *a*, The animal magnified.

*CALANUS (Leach) ARIETIS.* Plate XXI. fig. 9.

Pearly blue, purplish interiorly. Elongate-ovate, narrowed slightly anteriorly. Head small, quadrate, seemingly formed of a central part containing a deeply immersed rufous eye, and two lateral parts forming the roots of two extremely large antennæ. Antennæ curved, multiarticulate, spiny, the penultimate and preceding joint being furnished with two rather long spine-like processes directed backwards, and carrying numerous acute ciliæ, which, as in *Beroe* and *Cestus*, are perpetually in motion, throwing out iridescent tints. Behind the head the body is irregularly tumid, and gives origin beneath to three pairs of robust, somewhat clavate legs, carrying numerous long waved spines or hairs. The fin-legs could not be observed, from the minuteness of the animal rendering vision obscure; they seemed however pretty numerous. The last segment of the body was concave posteriorly, and supported the tail, which was about half the length of the body, and dilated posteriorly, the segments having on each side an obtuse process descending and covering the articulation with the next segment laterally. The last joint had on each side a quadrangular appendage, with long curved spines, and internally a valvular part was observed to expand and contract with extreme regularity, like the dorsal vessel of some insects.

This minute species, which unquestionably belongs to the genus *Calanus* of Leach, was detected in the middle of the Atlantic Ocean. The ciliæ at the extremities of the antennæ are extremely curious, and I believe not to be found in other species of the same genus; but I have not lately had an opportunity of examining *G. longicornis*, from which this differs in many other respects.

Fig. 9. *a*, *Calanus Arietis*, magnified.

*b*, Portion of one of the ciliated spines.

*c*, The form of the posterior edge of the caudal segments.

*d*, The anterior leg, in one specimen.

*CYCLOPS ? (Muller) LATICAUDA.* Plate XXI. fig. 10.

Hyaline; the eyes, which are separate, and minute dots along the dorsal plates rufous. Head very large. Antennæ very short and spiny, three irregular joints only, projecting beyond the head; first segment of the body as broad as the head, rest diminishing in width, last angulate posteriorly; first and second caudal segments smaller than the third, which is nearly semicircular in outline; three poste-

rior similar in form, but of smaller size; the ultimate with two rather large spined appendages. The first segment with a curved process, terminated by two spines or hairs on each side, (Male generative organs?)

In considerable numbers off the Cape, June, 1835. No variety in form or appearance.

Fig. 10 *a*, Animal magnified.  
*b*, Right antenna.

CYCLOPS (*Mull.*) OBESICORNIS. Plate XXI. fig. 11.

Ovate, somewhat variable in colour, but usually dark green with reddish streaks. Eye red, single, deeply immersed; antennæ very large, geniculate, multiarticulate, the basal articulations not clearly defined, an irregular transverse line alone marking their position; spiny, one very remarkable in every specimen curving forwards from the angle: palpi (?) slender and very hairy. Tail tapering, bifurcate, and terminated by a number of spines, of which two are rather conspicuous from their length.

The antennæ of this species are usually dark reddish, in paler specimens they assume a pale pink, but differ in none in the slightest degree in form. They are found in considerable numbers in a little rivulet which crosses a part of M. Genève's property at Rivière Noir, Isle of France.

Fig. 11, *a*, *C. obescornis* magnified.  
*b*, The left antenna.

CYCLOPS (*Mull.*) LONGISPINA. Plate XXI. fig. 12.

Ovate, hyaline or slightly pinkish. Exceedingly minute. Eye pink, diffused, deeply immersed. Antennæ moderate in length, rather robust, armed with a tooth-like process arising from the second joint, and with a spine partially concealed by it. Tail not dilated, with a few long spines proceeding from the bifurcate apex, one extremely long, and repeatedly jointed from about its middle. The palpus robust, tapering, composed of three subequal basal joints, and a longer and more slender apical one furnished with three diverging hairs.

This beautiful little animal was exceedingly common in the water in which the last was detected; its size, the process of the antennæ, and the long spines of the tail sufficiently distinguish it from every hitherto described species.

Fig. 12, *a*, *C. longispina*, magnified.  
*b*, Right antenna.  
*c*, Right palpus.  
*d*, Left division of the tail.

CYCLOPS (*Müller*) *SIMILIS*. Plate XXI. fig. 13.*C. captivus?* *Mül.*

Blueish or brownish. Eyes and a dash on each side of the head and first annulus of the body red. Body ovate, a circular scale terminating it posteriorly, and from whence arises a diminutive tail, as in the other species, spiny. The eyes are double, each kidney-shaped, the facets looking outwards and a little forwards. Antennæ about half the length of the body, many-jointed, with hairs or spines, especially towards the tip, those passing backwards being the longest. The palpus was waved, the penultimate joint minute, the rest elongate, and the tip terminated by a set (5) of bi- or tri-articulated hairs, curved and moveable on the palpus, their appearance leaving me still in doubt whether they should not be accounted claws. I believe the animal used them as organs of prehension, from the mode in which they were moved about. The outer edge of the last joint of the legs is dentate, the teeth blunt.

This species approaches so nearly to the description and figure of *C. captivus* of Müller, that singular as would appear the extensive range of the animal through the ocean, I hesitate considerably in refusing to refer it to his synonymy. One of the females had a little cluster of eggs, each hyaline with a pink centre, beneath the tail; they were about forty in number. The animal was found among marine plants at Mauritius.

Fig. 13, *a*, Magnified figure.

*b*, Left antenna.

*c*, Right palpus.

*d*, Tip of the palpus.

*e*, The eyes.

CYPRIS (*Müll.*) *ARISTATA*. Plate XXII. fig. 14.

Green, elongate, dorsum arched, beneath slightly concave, posterior extremity protuberant, anteriorly furnished with minute spines. Antennæ 5-jointed, long bristles arising from the 3 terminal joints. Posterior pair of legs furnished with a long claw directed forwards, anterior pair with four claws, one being toothed and attached to a minute joint which terminates the leg.

In fresh water among *Charæ* and *Confervæ*, Mauritius.

Fig. 14, *a*, *C. aristata*, magnified.

*b*, View from above.

*c*, Enlarged view of the spines anteriorly.

*d*, Left antenna.

*e*, Last joint of hind leg, with the claw.

*f*, Fore leg.

*g*, Tip, showing the minute joint and the toothed claw.

## CYPRIS (Müll.) MUCRONATA. Plate XXII. fig. 15.

Ovate, green, one variety æruginous, scaly posteriorly with a minute aculeus curving upwards. Anterior legs with three subequal claws; posterior with short not much curved claws. Motion very slow.

This minute species was found with the last.

Fig. 15, a, *C. mucronata*, magnified.

b, The aculeus.

c, One of the claws on the hinder legs.

XLII. *Notes upon the Habits of various British Insects.*

By J. O. WESTWOOD, F.L.S., &c.

[Read August 3, 1835.]

THE science which the entomologist cultivates may justly be deemed one of the most interesting of pursuits, constantly affording, as it does, fresh matter for gratification; for it fortunately happens that should he be unsuccessful during his rambles in the capture of objects of rarity, he has at command the means of endless observation upon the habits of those which do fall in his way, and which, from the comparatively little hitherto recorded, will delight him if new, and will not tire him, if even already noticed.

In some of my recent excursions, when tired with my walk and "heated in the chase," I have seated myself on some soft turfy spot near the residence of some of the sand-wasps, and have amused myself with watching their various employments.

*Ammophila hirsuta* first attracted my attention. The specimen was a female engaged in constructing her nest; she was very busily employed scratching in the sand with her fore legs, and soon formed a hole about a third of an inch deep. Whilst thus engaged I placed myself as near to her as possible; on withdrawing her head she discovered my proximity to her, when creeping upon a little stone close by, she reconnoitred and then flew away. I lost sight of her for some time, but on proceeding to the next sand-bank I found her flying about, and as she soon quitted this spot I fancied she might have returned to her old quarters, which I found to be the case on my returning there. In this manner we continued to play at hide-and-seek with each other for several times, until I fairly drove her