

abdominal segments, hidden under the thoracic carapace, as detailed in their account given in the 'Annales des Sciences Naturelles' for 1872, article 7, sufficient to bear them out in their "preuves péremptoires" that the creatures are insects, and quite analogous to the branchial plates of Ephemeridæ. Having incidentally mentioned *Prosopistoma*, I thought it right to enter into the question of its relations according to the researches of the French entomologists, especially as, at one time, I had expressed myself uncertain as to the correctness of their deductions.

EXPLANATION OF PLATE V.

- Fig. 1. Male imago; 1 *a*, underside of apex of abdomen; 1 *b*, appendages and penis, from beneath.
 2. Female imago.
 3. Female subimago.
 4. Portion of "larva;" 4 *a*, antenna of the same.
 5. "Nymph" nearly mature; 5 *a*, leg; 5 *b*, branchial plate; 5 *c*, labrum; 5 *d*, maxilla, with palpus and mandible, seen from above; 5 *e*, the same, seen from beneath; 5 *f*, labium and palpi; 5 *g*, apex of abdomen, from beneath.

A new Australian Sphæromid, *Cyclura venosa*; and notes on *Dynamene rubra* and *viridis*. By the Rev. T. R. R. STEBBING, M.A., of Tor-Crest Hall, Torquay. (Communicated by W. W. SAUNDERS, Esq., F.R.S., V.P.L.S.)

[Read May 7, 1874.]

(PLATES VI. & VII.)

THE Sphæromid figured in the accompanying Plate appears to belong to a new genus of that family. It was "found under stones in Sidney harbour, in society, at the lowest ebb tides," by Mr. Stevenson, when collecting in Australia some years ago for W. Wilson Saunders, Esq., F.R.S., from whom I received the specimen.

The generic character consists in the attachment of the inner plate of the uropoda to a tooth which projects both forwards and upwards from the extremity of the tail, and in the extension of both plates of the uropoda beyond this projecting tooth, the outer plate folding partially beneath the inner, but extending beyond it.

It agrees with the Australian species *Cymodocea armata* in the prolongation of the seventh segment of the body over the tail. This process in the species now under description is not unlike

that of the sixth segment of *Campecopea hirsuta*; but it does not extend over more than half the tail, and is rather thinner in the middle than at the end, which has a slightly nasal or trilobed appearance. On either side midway between this central trunk and the flanks, this seventh segment is armed with a small tooth on the hind border, both border and trunk being more or less scabrous. The pleon, or tail, is convex, with two curves—the first showing three lines of segmentation, the second, and larger, constituting the terminal tail-segment. This is granulated, and bears two small serrated elevations commencing at the base and scarcely extending beyond the process of the seventh body-segment above described, immediately under which they lie. Between these there is a shallow depression in the convexity of the tail, continuing, indeed, beyond them, but becoming shallower and almost imperceptible. At the base of the terminal tail-segment a deep socket receives the apparently immovable articulation of the inner tail-appendages. These lie close along the nearly straight and somewhat flattened margins of the terminal segment, free from, but fitted to, a very fine semicylindrical elevation upon the margin. The end of the tail presents a rather broad, but very shallow, excavation flanked by a small tooth on either side, while from its centre projects the tooth mentioned above in the generic description, to which the inner tail-appendages have every appearance of being firmly soldered. The tail-appendages themselves are curiously marked round their edges, the markings being below the surface. The closely set lines of this border-venation give off two or three branchlets apiece, which run quite to the margin. The outer plate is rather deeply concave above; and when the outer plates are folded as far as they will go beneath the inner, an appearance is presented of semicircle within semicircle, both the inner and the outer curve having a diameter greater than the width of the body, which tapers slightly towards the head. Having regard to this appearance, which makes the animal very unlike the other members of the Sphæromid family, the genus may be called *Cyclura*, with *venosa* for its specific designation, in allusion to the markings of the uropoda.

It remains only to mention that the length is about half an inch, and that the body-segments are armed on each side with a small projecting ridge which runs out into an angle or tooth towards the tail.

While introducing what appears to be a species of a new

genus, I shall endeavour to keep down the number of divisions in this family by pointing out that what have been hitherto received as two species of *Dynamene* (or *Cymodocea*, Milne-Edwards), namely *rubra* and *viridis*, are in reality identical. If the colour of these creatures is to be taken as a specific distinction, instead of two species, we shall have to make a considerable group. Specimens are exceedingly abundant at Torquay, and the coloration is very variable. All are speckled, though to the unassisted eye many appear to be plain green or red. The greens and reds vary from very light to dark. Many of the green specimens have all the segments fringed with thin red lines. Some examples have a rich brown or deep purple aspect, which under the microscope is found to be produced by a close intermingling of small red and green patches with crowded black specks over the whole surface. Very frequently both on the red and green specimens there are two conspicuous patches of light green—one on the body near the head, the other on the tail. These look almost white against darker shades of the same colour. Occasionally a thin line of lighter colouring runs down the centre of the body, looking like a small fragment of bleached coralline, such as the net often takes up in sweeping for these creatures. Another variety has splashes of dark brown or red on each side of the first body-segment and of the tail, with smaller splashes on their segments.

What has been said of the colouring of *D. rubra* and *D. viridis* will apply equally well to that of *D. Montagu*. There are similar variations also in *Idotea tricuspidata*, of which Sir J. G. Dalryell, quoted by Spence Bate and Westwood, says, "their colour is dingy or brownish yellow, with three or four white specks down the centre of the back; or it is altogether of variegated hues, and some are mottled." Messrs. Bate and Westwood themselves say, "this species varies greatly in its colour and markings; generally it is of a dirty greenish grey, but often has a pale longitudinal line down the middle of the back or on each side of the body whilst other specimens are marked, often irregularly, with large pale yellow or orange-coloured patches on the body and tail. According to our own experience, the colour of the animal is dependent upon that of the weed on which it lives. Those that live on the black fucus are generally very dark purple, while those that we find on the green *Algæ* are brightly verdant." The Torquay specimens of *I. tricuspidata*, which are to be had in great numbers, fully bear out these details of colour-variation; and

whatever the cause may be, it is very certain that many examples of *Idotea* and *Dynamene* correspond most closely in hue to the seaweeds among which they are found. I have two small specimens of *Idotea* which are symmetrically banded with dark brown on a light ground. The smaller of the two has the extremity of the tail, or pleon, not quite so round as that of *I. parallela*, but without any apical tooth or cusp, indications of which are generally present even in very minute specimens of *tricuspidata*. The other (fig. 12) must be assigned to *Idotea pelagica*, unless that is itself only a variety of *tricuspidata*.

Among the Asellidæ, *Jæra albifrons* has many variations of hue. Messrs. Bate and Westwood say of it, "the general colour is ashy, but very much varied in its shades in dried specimens, with the front of the head whitish." In fact, however, the differences belong to living examples, which may be had ashen-grey, light brown, dark purplish brown, purple and green-banded, and plain green.

Among the Aerospirantia that which comes nearest in general resemblance to *Dynamene* is *Armadillo vulgaris*, a species "subject to great variation in the amount of its pale markings, which has led to the establishment of a great number of supposed species." To this remark it may be added that not only do the pale markings vary, but also the ground-colour, which may be dark steel-grey, or bright brownish red, or black, or even, though rarely, creamy white.

Colour, then, it will be seen, is an insufficient basis for specific distinction among crustaceans, at any rate in the groups to which allusion has here been made.

Passing on to the other differences which have been noted between *D. rubra* and *D. viridis*, we find the one said to be narrowly ovate and the other broadly ovate. This, however, is a character which seems to depend on the age and size of the individual. In *Idotea tricuspidata* the variations in the breadth of the body compared with that of the tail are very considerable; but one would no more think of specifically separating the broad and the narrow examples than one would of making a fat man a distinct species from a thin one. There is, moreover, a peculiarity occasionally to be observed in *Dynamene*, whether red or green, and also in *D. Montagu*, which would seem decisive against the use of breadth as a specific character; for examples may be found of which the head and first four segments of the body are narrow, while the remainder of the body and the pleon, or tail, are broad

(figs. 9 and 11). The effect to the eye of the perfectly abrupt transition is very curious. The animals exhibiting this formation appeared, when taken, if one may judge from their activity, to be perfectly healthy. It seems possible that these animals may now and then not shed the whole of their integumentary tissues at the same time, and that in consequence the hinder portion is able to expand while the front remains contracted. It is certainly the case that a *Ligia oceanica* in confinement thus parted with only a portion of its integuments, those, namely, of the pleon and the three hinder body-segments.

The only other point which seems to be depended on as differentiating *D. rubra* from *D. viridis* relates to the little longitudinal slit in the terminal tail-segment, which is said in *rubra* to be "of equal width throughout," or "nearly of equal width throughout its entire length," and in *viridis* to be "widest at its base," or "considerably widened at its base; the extremities of the sides of the slit sometimes closely approximating or touching each other," with the additional remark that "in the young states the sides of the terminal slit of the tail gape to a considerable width at their extremities." The small slit in question much resembles the slit in the leaf of the sweet-scented Coltsfoot, and probably varies in its proportions in different individuals, much as that proper to the plant in different leaves.

Neither separately nor together do the differences in colour, breadth of body, and width of the terminal slit seem to be of specific value. *Idotea tricuspidata*, so often referred to, would give a set of exactly parallel differences, in colour, breadth of body, and length of the apical termination; and the rule which is perforce admitted in regard to these, cannot fairly be withheld from applying to the case of *Dynamene*. I propose, therefore, to unite the two so-called species *D. rubra* and *D. viridis* under the name of *Dynamene varians*. There is, however, a Crimean *Dynamene* (= *Campecopea versicolor*, Rathke; *Cymodocea versicolor*, Milne-Edwards) which, for all that we can tell from the description in the great French work, may be the same as our English *D. varians*. The description is as follows:—"Corps ovulaire, bombé et lisse. Tête arrondie; fente du dernier article de l'abdomen un peu élargie à sa base. Habite les côtes de la Crimée." All the characters here given for the Russian apply equally to the English species; and, as habitat is no guide whatever, our only reason for thinking *varians* and *versicolor* distinct is, as far as the distin-

guished French author is concerned, that he gives them different names and separate notices in his valuable work.

EXPLANATION OF THE PLATES.

PLATE VI.

- Fig. 1. *Cyclura venosa*, seen from above, natural size.
 2. The same, enlarged.
 3. The same, side view, natural size.
 4. The same, enlarged.
 5. Antennæ and mouth.
 6. Hind leg.
 7. Front leg.

PLATE VII.

8. *Dynamene Montagui*, normal form, enlarged.
 9. *Dynamene Montagui*, showing constriction of front segments.
 10. *Dynamene varians*, normal form, enlarged.
 11. *Dynamene varians*, constricted form.
 12. *Idotea pelagica*.

 Descriptions of five new Species of *Gonyleptes*.

By ARTHUR G. BUTLER, F.L.S., F.Z.S., &c.

[Read May 7, 1874.]

(PLATE VIII.)

SINCE the publication of my Monograph of the species of this interesting genus of Harvest-Spiders, the collection of the British Museum has been enriched by the presentation and purchase of several additional new species, which I now propose to describe.

1. GONYLEPTES TERRIBILIS, n. sp. (fig. 1).

In some respects similar to *G. armillatus*.

Colours: piceous; the sutures, prothoracic region, and sternal surface of cephalothorax dull testaceous; palpi and chelæ testaceous; three front pairs of legs luteous; coxæ and femora of hind legs black; tibiæ and tarsi piceous.

Male. Above, oculiferous tubercle slightly prominent, obtusely bispinose, with a minute granule in front of each little spine; behind the oculiferous tubercle and in front of the transverse suture are two series of minute granules, the anterior row composed of four, the posterior of two; central area of cephalothorax separated into four divisions by the sutures, and covered with minute granules; margined by a series of small irregular tubercles, gradually increasing in size to-



Stebbing, Thomas R. R. 1874. "A new Australian sphaeromid *Cyclura venosa*; and notes on *Dynamene rubra* and *viridis*." *The Journal of the Linnean Society of London. Zoology* 12, 146–151.

<https://doi.org/10.1111/j.1096-3642.1875.tb02578.x>.

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