

II. *On some Entomostraca collected by DR. SUTHERLAND, in the Atlantic Ocean. By JOHN LUBBOCK, Esq. F.G.S.*

[Read January 7th, 1856.]

DR. SUTHERLAND, already so well known for his labours in the Arctic regions (having been appointed Government Surveyor at Port Natal), employed some of his time during the voyage there in collecting *Crustacea*. The *Entomostraca* thus obtained have been submitted to me by Dr. Gray, and I beg leave to lay before the Entomological Society the result of my examination.

The collection contains thirty-five species, of which twenty-three are new, viz.:—

*Calanus inconspicuus*.

„ *penicillatus*.

„ *latus*.

„ *brevicornis*.

„ *mirabilis*.

*Euchæta Atlantica*.

„ *Sutherlandii*.

*Undina Danæ*.

„ *longipes*.

„ *plumosa*.

„ *Helenæ*.

„ *pulchra*.

*Diaptomus dubius*.

„ *abdominalis*.

*Pontella setosa*.

*Clytemnestra Atlantica*.

*Corycæus Sutherlandii*.

„ *styliferus*.

*Copilia Atlantica*.

*Sapphirina Danæ*.

„ *opaca*.

„ *stylifera*.

*Halocypris Atlantica*.

The proportion of new species, though large, is not more than might be expected if it is considered how little attention has hitherto been given to marine *Entomostraca*. At the same time it



must be confessed that future researches may perhaps prove that the two sexes of one species have been separately described, for the generic descriptions are founded on characters which differ in the two sexes; and it is impossible to distinguish in all cases a female *Undina* from a *Calanus*, or a female *Pontella* from an *Acartia*.

To avoid if possible this source of error, I have been very careful in describing those parts which are generally considered to be alike in both sexes, as, for instance, the organs of the mouth, the natatory legs and the shape of the cephalothorax, and I do not think any difficulty will be found in joining the two sexes when both are known; at the same time, it is not *certain* that the above-mentioned organs are alike in the two sexes of the same species.

The characters upon which species are founded need perhaps some remark, for the hairs are in most cases so variable that it is rather startling to find them relied on in the *Entomostraca* as affording excellent specific characters. However, the examination of thousands of specimens has convinced Professor Dana that such is the case, and the form and position of the hairs, and especially of those on the terminal portion of the anterior antennæ, are as useful in the study of *Entomostraca* as are the teeth in that of *Mammalia*.

The normal number of hairs on each segment of the antennæ of—for instance—a *Calanus* is four, one on the middle of the anterior margin, and at the apex, two anterior and one posterior. The apical segment appears to offer an exception to this rule, but in such cases the apical segment itself is either very minute or perhaps has disappeared, so that the hairs belonging to two segments are apparently collected on one. In confirmation of this, compare the antennæ of *Diaptomus abdominalis* or *Calanus inconspicuus* with that of *C. brevicornis*. *C. penicillatus* is remarkable for having a pencil of hairs at the end of the anterior antenna. The antennæ are unequal, the longer one having eighteen, the shorter only thirteen segments, and I consider the terminal tuft to be the hairs which remain, although the segments to which they normally belong have disappeared. I found it impossible to determine the exact number of hairs, but convinced myself that there were more at the apex of the shorter antenna than at that of the longer, which in accordance with this theory ought to be the case.

It is much to be wished that we had some definite system of nomenclature for the appendages and parts of appendages of



*Crustacea.* Professor Milne-Edwards has indeed proposed one in the *Annales des Sciences Naturelles* for 1851, but unfortunately it is only applicable to the decapods. The *Calanidæ* possess ten or eleven pairs of appendages; viz., first two pairs of antennæ, then a pair of mandibles, then three pairs which are generally applied to the mouth, and then four or five pairs of natatory legs. Three pairs are therefore wanting; we may consider them to be those of the first or ocular segment, and of the two posterior segments. I subjoin a table showing the homologies of the genus *Pontella*, and the names used by different observers. It must be observed that Milne-Edwards appears to consider that the maxillæ are wanting, for in his *Nat. des C.* vol. iii. p. 418, he says, “*Les machoires paraissent manquer complètement, ou se trouver reduites à l’état de simples vestiges* ;” if this is the case, his “*Pates machoires de la première paire*” belong to the seventh segment instead of to the fifth; and the missing appendages are those of the first, fifth and sixth segments.