

and the oral parts certainly appears very different from that generally met with in the other Branchiopoda, but I think it will be fully as difficult to point out any closer resemblance in this respect to the Podophthalmia. The eight pairs of limbs succeeding the oral parts, on the other hand, are evidently constructed on the very same type as those in the Phyllopoda, agreeing, as they do, both as to structure and function with the so called "branchial feet" in these Crustacea. But in *Nebalia* these limbs are followed by four pairs of very differently formed appendages, constituting exceedingly powerful natatory organs, and as similar swimming legs, the pleopoda, are also found in the Podophthalmia, this character has likewise been adduced to show the decapodous nature of *Nebalia*. It must, however, be remembered, that such organs are not restricted to the Podophthalmia, but are also met with in several other Crustacea, as Amphipoda and Copepoda, and both as regards structure and number, the swimming legs in *Nebalia* apparently agree much more closely with those in the Copepoda than with those in any other group. This resemblance becomes still more striking by the presence in *Nebalia* of two additional pairs of rudimentary caudal limbs, evidently answering to the rudimentary legs found behind the swimming legs in several Copepoda. On the whole the general appearance of *Nebalia* bears a very striking resemblance to that in certain free living Copepoda, especially of the Harpactoid section. This similarity I do not regard as merely accidental, but as indicating a true consanguinity, and this has partly also been allowed by Dr. Packard. In order to understand the morphology of the Phyllocarida, it thus becomes necessary not only to pay attention to the higher Crustacea, but also to the lower forms, especially the Copepoda, which seem to be the most primitive of the recent Crustacea. To express shortly my opinion about the relationship of the genus *Nebalia*, I would call it, instead of a "phyllopodiform Decapod" as it has been termed by Metschnikoff, more properly a "copepodiform Branchiopod." At the end of this Report, when the Challenger forms have been described, I propose to enter more in detail into the question of the homology of the recent Phyllocarida with other known Crustacea.

As to the supposed affinity of the genus *Nebalia* to the fossil Palæozoic forms referred to the order Phyllocarida, the general appearance of the carapace, and especially the presence in some of them of a similar jointed rostral plate as in *Nebalia*, seems in fact to point to some closer relationship, but as the limbs of these old Crustacea are still wholly unknown, and moreover, as the tail in most of them exhibits a rather different aspect, the degree of affinity must still be regarded as very doubtful. In any case these Palæozoic forms cannot be placed within the same family as *Nebalia*, but ought to be separated as a distinct subdivision, and some of the forms exhibit such an anomalous aspect as hardly even to justify the view that they belong to the same order. On the other hand, it is quite evident, that the two new generic types from the Challenger collection, described below, are on the whole so closely related to *Nebalia* as to be properly classed together with this genus in the same family.