

tenuity. Those of the three following pairs are also biramose, but the inner branch is short and broad; the outer is long and wide, being bent over the inner; the margins are smooth, inflected, and fringed with a delicate ciliary growth. In *Callianidea* the second pleopoda resemble those of the three succeeding pairs. They are biramose and foliaceous; the margins, instead of being fringed with small hairs or cilia, have these modified into soft and flexible articulated membranous filaments. These, it is assumed, are true branchial appendages; but whether they fulfil the function of aeration of the tissues or not, it appears to me that in classification they can only be regarded as finely modified hairs, and, consequently, are only of generic import. The genus *Isæa* of Guérin, which Milne-Edwards changed into *Callianisea*, because Guérin's name had previously been in use, and which has again been changed by Dana into *Callisea*, to prevent the confusion likely to ensue from the resemblance between *Callianassa* and *Callianisea*, appears to me to have been founded upon a damaged specimen of *Callianidea*. The character assigned as a distinctive feature was the presence of only one branch attached to each pleopod; but the imperfect condition of the specimen examined induced Milne-Edwards to suggest that this arrangement was the result of an accident. The only distinction between *Callianidea* and *Callianisea* of Milne-Edwards (the latter being *Isæa* of Guérin), rests upon the author's statement that the pleopoda are furnished with a great number of little branches grouped together. Or, to use his own words: "garnie d'un grand nombre de ramuscules en form de grappe," which Milne-Edwards supposes to mean that the ramuscules were inserted together directly on the base of the pleopoda.

An examination of the structure of the pleopoda in *Callianidea*, which is incorrectly figured by Milne-Edwards,¹ shows that the ramuscules are massed together, forming a bundle attached to the margin of the base of the inner branch of the pleopoda, not to the peduncle, as suggested by Milne-Edwards.

The branchiæ of *Callianassa* and *Callianidea* resemble each other, and appear to form a transition between the trichobranchiate and phyllobranchiate types. They consist of long and narrow filaments, which are closely packed and laterally compressed, they are arranged in two longitudinal rows, and differ from those of *Cheiroplatea* in being more numerous, and are consequently compressed instead of being cylindrical.

The genus *Axius*, while still retaining some of the features, more especially in external aspect, of the Thalassinidæ, exhibits a character that approximates its species to those that belong to the family of Astacidæ.

For example, the podobranchiæ are present, being attached to several of the pereopoda, and, according to my observation, in *Paraxius* and *Eiconaxius* the mastigobranchiæ are present to an equal degree, and form a consistent feature in leading us gradually to the family Thaumastochelidæ, in which all the branchiæ and their mastigobranchial

¹ Hist. Nat. des Crust., pl. xxv. bis, fig. 14.