can affirm with regard to an *Atylus* of these [Brazilian] seas, remarkable for its plumose branchiæ."

He regards the telson as a segment, notwithstanding its want of appendages. In favour of this view he says, "we have the relation of the intestine, which usually opens in this piece, and sometimes even traverses its whole length, as in *Microdeutopus* and some other Amphipoda. In *Microdeutopus*, as Spence Bate has already pointed out, one is even led to regard small processes of this tubular caudal piece as rudimentary members." He speaks of the appendages of the first three pleon-segments as being "reproduced in wearisome uniformity throughout the entire order" of Amphipoda. This remark is not very applicable to *Cerapus* (see S. I. Smith, 1880), and has a disadvantageous tendency to discourage the examination of these organs in other genera.

In "*Orchestia Darwinii*," n. s., he figures two forms of the powerful chelæ of the second pair of feet in the male, "two forms united by no intermediate terms." Faxon, on *Dimorphism in the Genus Cambarus*, 1884, thinks that possibly "these are to be explained in the same way as the two forms of the male *Cambarus*, which appear to be "alternating periods in the life of the individual," the one form assumed during the pairing seasons, the other in the intervals.

In *Melita Messalina*, n. s., and *Melita insatiabilis*, n. s., in the case of the females "the coxal lamellæ of the penultimate pair of feet are produced into hook-like processes, of which the male lays hold with the hands of the first pair of feet."

He remarks that generally throughout the Amphipoda the heart "extends in the form of a long tube through the six segments following the head, and has three pairs of fissures, furnished with valves, for the entrance of the blood, situated in the second, third, and fourth of these segments," as found by La Valette in *Niphargus* and by Claus in *Phronima*. Only in *Brachyscelus* he found the first pair of fissures wanting to the shortened heart.

"The Amphipoda," he says, "are distinguishable from the Isopoda at an early period in the egg by the different position of the embryo, the hinder extremity of which is bent downwards. In all the animals of this order which have been examined for it, a peculiar structure makes its appearance very early on the anterior part of the back, by which the embryo is attached to the 'inner egg-membrane,' and which has been called the 'micropylar apparatus,' but improperly as it seems to me." To this statement he appends a note, "Little as a name may actually affect the facts, we ought certainly to confine the name 'micropyle' to canals of the egg-membrane, which serve for the entrance of the semen. But the outer egg-membrane passes over the 'micropylar apparatus' of the Amphipoda without any perforation, according to Meissner's and La Valette's own statements; it appears never to be present before fecundation, attains its greatest development at a subsequent period of the ovular life, and the delicate canals which penetrate it do not even seem to be always present, indeed it seems to belong to the embryo rather than to the egg-membrane. I have never been able to convince myself that the so-called 'inner egg-membrane' is really of this nature, and not perhaps the earliest larva skin, not formed till after impregnation, as might be supposed with reference to *Ligia*, *Cassidina*, and *Philoscia*."

"The young animal, whilst still in the egg, acquires the full number of the segments and limbs." In the Hyperinæ, indeed, "the young and adults often have a remarkably different appearance; but even in these there is no new formation of body segments, and limbs, but only a gradual transformation of these parts." The sexual differences in the Amphipoda are also discussed.