

gnathopoda; it consists of six joints, of which the first three are short and robust, the meros is long and slender, the carpos long and cylindrical, and the propodos or terminal joint is long, much more slender than the preceding, and strongly fringed with hairs. The two succeeding pairs of pereopoda are seven-jointed; they are formed on the same general type as the first, but longer and a little more robust, and terminate in a minute chela of almost microscopic dimensions, which is all but hidden by the surrounding cilia. The fourth pair of pereopoda in Kröyer's specimen is six-jointed, tolerably robust, and furnished with long hairs on the three distal joints. In the Challenger specimen, however, the fourth and fifth pairs of appendages are in only a young or rudimentary condition, which can scarcely be the result of an immature stage, seeing that in the male animal the prosartema is developed and the animal apparently possesses functional power. I can therefore only assume that, after the animal has arrived at maturity, the posterior two pairs of pereopoda increase in value and importance without ever attaining any functional power. The posterior pair is in a more feeble condition than the fourth.

The pleopoda are short and robust. The first pair in the female is single-branched and simple; all the others are biramose. In the male the first (Pl. LXIX., *p, p*) carries on the inner side, near the middle, attached to a pedicle, a large, membranous petasma, that is united in the median line with a corresponding one on the opposite appendage by a series of small cincinnuli. The second pair of pleopoda (*q*) is biramose, and in the male has the anterior or inner branch developed at the base into a strong lobe that is serrate at the free extremity. The third pair is also biramose, and carries a lobe at the base of the inner branch, but is not serrate. The succeeding pairs are biramose, simple, but become shorter and more robust posteriorly.

The sixth pair, which forms the outer plates of the rhipidura, has the outer branch about one-third longer than the inner; the outer margin is armed with a small sharp tooth, distant about one-third from the apex; from this tooth the margin rapidly tapers to the distal extremity, and is fringed with short, soft hairs, that lengthen a little as they approach the apex, which is slightly truncated and furnished with three or four long, ciliated hairs, continued in gradually diminishing size upon the inner margin until they approach the base of the plate. The inner branch or plate is narrower than the outer, and gradually tapers from the base to the distal extremity; the inner and outer margins are fringed with ciliated hairs that gradually increase in length from the base to the apex.

The telson is about half the length of the inner branch; it is lobed on each side near the base, and then gradually tapers to a slightly truncated extremity, the margin being fringed with ciliated hairs that gradually increase in length from the base of the telson to the apex.

*Sergestes arcticus*, Kröyer, agrees in its general form with *Sergestes atlanticus*,