

second. The posterior pair has only one long pleurobranchial plume, situated high within the chamber. The branchial apparatus may therefore be arranged as in the following table:—

Pleurobranchiæ,	.	.	.	...	...	...	1	1	1	1
Arthrobranchiæ,	.	.	.	...	...	2	2	2	2	...
Podobranchiæ,	.	.	.	...	...	1	1	1	1	...
Mastigobranchiæ,	.	.	.	...	r	...	...	...	...	...
				h	i	k	l	m	n	o

The plumes not only increase in number, but also in length, as they proceed posteriorly.

The fifth pair of pereopoda has a very large coxal joint in the male, which approaches nearer to that on the opposite side than in the female, and is perforated by a large foramen, through which a flexile and probably erectile vas deferens projects (fig. 30, ♂) at certain periods to a very considerable extent, and rests upon the broad concave surface of the first pair of pleopoda, which in the male is narrow at the base as far as the extremity of the first joint, forming a cylindrical stalk, whereas the second joint gradually thins out to a hollow, spatuliform plate, probably serving to support the long and membranous vas deferens in its relation to the female.

This appendage in the male, from its formation, is of much interest, inasmuch as its relation to the vas deferens shows the simplest form of the organ that in the *Brachyura* fulfils the duties of an intromittent organ. In the present instance the small size of the orifice in the coxa of the third pair of pereopoda in the female precludes the idea of any connection between the sexes by intromission; but it appears certain, from the great length of the extended vas deferens in some specimens after death, that the extremity of the male organs are during connection brought into close proximity with the external aperture of those in the female.

On the ventral surface of the pereion of many specimens, especially females, I found a layer of thin, gelatinous, and transparent material. In some places it was of thicker substance, as if the centres of extending growth. Sparsely scattered through the mass were stellate spicules, which consisted of branches variously radiating from a single centre, forming a star with six or eight rays. Each ray slightly tapers towards the extremity until it bifurcates, and forms a series of small holes, varying in numbers from three to six, that externally surrounds a large central hollow.

Stereomastis auriculata, Spence Bate (Pl. XVI. figs. 3, 4).

Pentacheles auriculatus, Sp. B., Ann. and Mag. Nat. Hist., ser. 5, vol. ii. p. 280, 1878.

„ *auriculata* on Pl. XVI.

Carapace narrow; lateral margins subparallel, armed with five teeth on the anterior region, three on the median, and seven posterior to the cervical fossa. The anterior