

From these facts we should be inclined to suppose that *Sepia pfefferi* and *Sepia tuberculata* stand in a nearer relation to each other than does either of them to *Hemisepius*, which is clearly marked off by the presence of only two series of flattened suckers on the sessile arms, and the broad shape of the ventral pair of these; by the form of the tentacular club, and by the two rows of glandular pits down its ventral surface.

The three forms seem to constitute together a very aberrant branch of the group, but we have not at present sufficient knowledge to interpret their precise relations to the more ordinary forms. Indeed the problem of the natural relationship of the various species of *Sepia* is far from having been satisfactorily worked out. The shells, which seem in many respects the organs most likely to lead to a solution, can be arranged in series increasing or decreasing in complexity, and there are several interesting fossil genera,<sup>1</sup> which help to bridge over the gulf separating *Sepia* from the Belemnites, but an arrangement of the species based upon the shells does not agree with one based upon the form of the tentacular club, or other parts of the animal's organisation, so that we are hardly justified in regarding it as natural.

Since the above remarks were written I have received, by the kindness of Dr. Appellöf, a copy of his paper on Japanese Cephalopoda,<sup>2</sup> which contains the description of a new species, *Sepia tullbergi*, closely related to the present form. The two agree in the short rounded form of the body, the slight convexity of the anterior dorsal border of the mantle, the depth of the siphono-pallial articulation, the absence of the linear ridge and groove in the nuchal articulation, the disparity in the sizes of the tentacular suckers, and in the form and structure of the shell.

Such being the case, there is no doubt that *Sepia tullbergi* belongs to the group to which I have given the name *Metasepia*.

There are a number of details in which the specimen obtained by the Challenger differs from that described by Appellöf, so that it is impossible to regard them as other than distinct species.

In *Sepia pfefferi* the pits at the base of the funnel for articulation with the mantle are deepest in the middle, not at the anterior end as in *Sepia tullbergi*; there is no trace of any tubercles on the back or head; the teeth of the suckers on the sessile arms are finer and more acute, not so broadly triangular, as indicated in Appellöf's figure (pl. ii. fig. 13); the tentacles are decidedly shorter and the large suckers on the club are not so conspicuous (compare pl. ii. fig. 8, with Pl. XXI. fig. 7 of the present Report, where indeed they are hardly large enough); the denticulation of their horny rings, too, is much finer and not so regular.

The shell agrees in almost every particular with Appellöf's description, except that the posterior extremity, although somewhat thickened, does not give rise to any structure at all like the horny lamella indicated by his figure (pl. ii. fig. 11,  $\alpha$ ).

<sup>1</sup> For interesting remarks on some of these see Lankester, *Quart. Journ. Micr. Sci.*, N.S., vol. xiv. p. 372, 1874.

<sup>2</sup> *K. Svensk. Vetensk. Akad. Handl.*, Bd. xxi. No. 13, pp. 1-40, pls. i.-iii.