

(1883). Not improbably too it may have been among the collections made by the earlier "Willem Barents" Expeditions and by the "Vega"; though, as in the case of the "Porcupine" specimens, it was not distinguished from immature individuals of *Antedon eschrichti*.

A careful study of all this material has convinced me, however, that the two forms are very different in reality; though, as I have pointed out above, *Antedon quadrata* may in some sense be regarded as a permanent larval form of *Antedon eschrichti*. Its first radials are not entirely concealed by the centro-dorsal, but appear above it as short band-like plates (Pl. XXVI. figs. 1-3). The second radials have more sloping sides than in the smaller forms of *Antedon eschrichti*, so as to be trapezoidal in general outline; and the axillaries have a blunter distal angle than in that type (Pl. XXIV. figs. 10, 11). The arm-bases are not tubercular, though the joints between the first and second syzygies have the same backward projections on the sides which do not bear the pinnules that occur in *Antedon eschrichti*. The relatively long quadrate shape of the arm-joints immediately after the third syzygy is less marked in the Challenger specimens of *Antedon quadrata*, the southernmost ones known (Pl. XXIV. fig. 2), than it is in the two obtained further north by the "Triton" (Pl. XXIV. fig. 3), and in those from the Arctic Ocean which have been figured elsewhere by Sladen¹ and myself.² But the middle and outer arm-joints of the two species are always distinguishable, those of *Antedon eschrichti* being short, generally triangular, and much wider than long, till quite near the end of the arm; while the brachials of *Antedon quadrata* are obliquely quadrate and the length is more nearly equal to the width. This is especially marked in the "Valorous" specimen, and is no doubt partly due to its not being quite mature, as in the young forms obtained by the Challenger (Pl. XXVI. fig. 1); but it is also very distinct in the larger examples from the Barents and the Kara Seas.

The other special mark of *Antedon quadrata* is the disproportion between the second and the third pinnule, which has already been noticed by Sladen as distinguishing the type from *Antedon eschrichti* (Pl. XXVII. figs. 9, 10, 12, 13). In the individuals of the latter species which were obtained by the Challenger at Station 48, the third pinnule is relatively much shorter than in the more northern forms. In large examples of *Antedon eschrichti* from the Arctic Ocean it is of almost exactly the same length as the second pinnule, as described by Sladen; but in the West Atlantic representatives of the type it is distinctly shorter (Pl. XXIV. figs. 8, 9). The southern forms of the two species therefore approach one another in the characters of the pinnules, just as in those of the arm-joints; although the more northern varieties are entirely distinct in both respects.

Not only is the third pinnule of *Antedon quadrata* altogether smaller than the second, but its component joints, while fewer in number, are also different in their

¹ *Op. cit.*, pl. vi. figs. 5, 6.

² *Bijdragen tot de Dierkunde*, 1886, 13 Aflevering, vi., pl. i. fig. 6.