

relative proportions. The basal joints are stouter as in the following genital pinnules, and their successors are distinctly longer than wide, indications of which appear in the second pinnule (Pl. XXVII. figs. 9, 10, 12, 13). There is no sign of this, however, in *Antedon eschrichti*, the joints of the third pinnule being as wide or wider than long (Pl. XXIV. figs. 8, 9). Furthermore there is generally less trace in *Antedon quadrata* of the modification of the two lowest joints in the outer pinnules, which is usually so marked in *Antedon eschrichti* (Pl. XXIV. fig. 13), though it is extremely well developed in an example brought by the "Varna" from the Kara Sea.

Levinsen<sup>1</sup> has recently united *Antedon quadrata* with *Antedon eschrichti*, on the ground that the characters of this latter species as stated by von Marenzeller, Sladen, and myself, all present themselves in immature examples of *Antedon eschrichti*. The possibility of this being the case had of course naturally occurred to me; but I decided against it for various reasons.

Levinsen is not personally acquainted with *Antedon quadrata*, but only knows it from the descriptions of Sladen and von Marenzeller, and from my own preliminary account of its special marks, characters which, as I am fully aware, do occur in young individuals of *Antedon eschrichti*, though not, I think, to the same degree that they do in *Antedon quadrata*. Had Levinsen been able to compare an example of *Antedon quadrata* with an equal-sized but immature individual of *Antedon eschrichti*, I believe that he would have found differences between them which he would recognise as of specific value.

One of the "special marks" which I mentioned as distinctive of *Antedon quadrata* when the type was rebaptised, was the very definite quadrate shape of the middle and outer arm-joints (Pl. XXVII. figs. 5-7) as compared with those of *Antedon eschrichti* (Pl. XXIV. figs. 11, 14), which are much shorter than wide, with their sutures less oblique than in *Antedon quadrata*. The young *Antedon eschrichti* also has relatively long and quadrate arm-joints with oblique sutures, and Levinsen assigns this as one of his reasons for uniting the two species. I was of course perfectly aware of this fact when I named *Antedon quadrata*, and described it as a permanently immature form of *Antedon eschrichti*.<sup>2</sup> Since the publication of Levinsen's memoir, which only reached me after the preceding pages were written, I have gone into the subject again in the only way which can possibly give a satisfactory result, namely, the comparison of the corresponding arm-joints in equal-sized individuals of the two species.

Figs. 4, A and B, on the next page, represent the portions of the arms between the fiftieth and sixtieth brachials of two individuals of *Antedon quadrata* from different localities. In both cases the joints are of an obliquely quadrate shape and nearly as long as wide. But in the corresponding part of the arm of a young *Antedon eschrichti* of equal size the joints are more nearly triangular and considerably wider than long (fig. 4, c),

<sup>1</sup> *Loc. cit.*, p 413.

<sup>2</sup> *Proc. Roy. Soc. Edin.*, 1884, vol. xii. pp. 374-376.