

and in full grown individuals this character is still more marked. This is shown in fig. 4, D, which represents a portion of the third quarter of an arm in the largest specimen of *Antedon eschrichti* that I have seen. It is drawn of the same size as the three other arm-fragments, so that their differences may be the more readily compared. The extreme shortness of the arm-joints is one of the most striking characters of *Antedon eschrichti*, though it occurs also in *Antedon antarctica* (Pl. XXV. fig. 12); and it manifests itself in individuals which have not attained half their full size, while it does not appear in

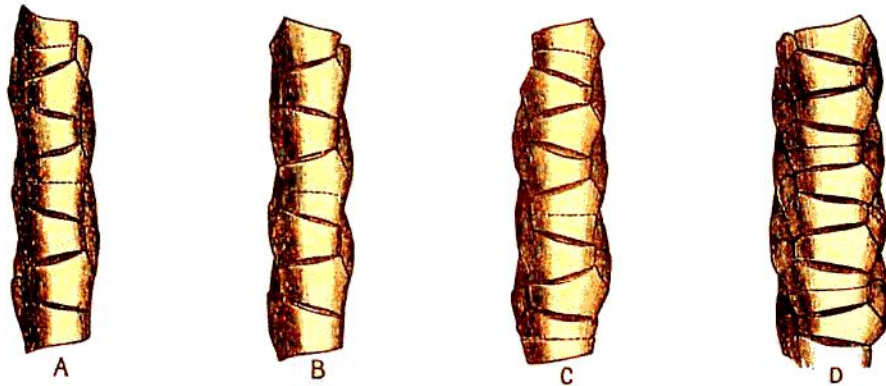


FIG. 4.—A, B, The fiftieth and next following brachials of *Antedon quadrata*; $\times 6$. C, The same joints in a young *Antedon eschrichti* of equal size; $\times 6$. D, Arm-joints of a mature individual; $\times 4$.

examples of *Antedon quadrata* which have the same dimensions, as shown in figs. 4, A, B, C. The difference may seem but a slight one in small pieces of arms like those figured; but it produces a very decided effect on the general facies of the whole plume of arms, on account of the greater or less separation of the successive pinnules from one another.

A second point of difference between the two species is the relatively small size of the third pinnule in *Antedon quadrata*, as compared with that of *Antedon eschrichti*, (Pl. XXIV. figs. 8, 9; Pl. XXVII. figs. 9, 10, 12, 13). Levinsen¹ has pointed out that as the second pinnule appears before the third, there is necessarily a period of growth at which the third pinnule will be only about half the size of its predecessors, as is the case in *Antedon quadrata*.

This of course is perfectly true; but as I have pointed out above, the relative proportions of its component joints are not the same in the two types. The difference is similar to that which shows itself in the arms, *i.e.*, the joints are relatively longer in the lower pinnules of *Antedon quadrata* than in those of *Antedon eschrichti*. The following measurements of the second and third pinnules in *Antedon quadrata* and in a young *Antedon eschrichti* of equal size will make this point clear.

	Second pinnule.		Third pinnule.	
	Length.	Number of joints.	Length.	Number of joints.
<i>Antedon quadrata</i> ,	14	31	8	17
<i>Antedon eschrichti</i> ,	15	39	12	28

¹ *Loc. cit.*, pp. 32, 33.