

and come to have a somewhat "wall-sided" appearance. In some species, such as *Antedon valida*, *Antedon incerta*, and allied forms, which have large first pinnules, the second brachials that bear them have quite short outer sides which are scarcely flattened at all. But the lower pinnule-joints are extremely modified. Their outer sides are flattened where they meet the corresponding pinnules of adjacent rays, while their inner sides seem to have been cut away so as to let the pinnules lie close against the arm (Pl. XV. figs. 5, 6 ; Pl. XVIII. fig. 5).

On the other hand, there are some species in which the wall-sided nature of the arm-bases is so comparatively inconspicuous that it might readily escape notice by an untrained eye. It is a peculiarity which becomes more prominent with age, the radial and brachial joints of young individuals being always longer relatively to their width than in the adult condition, so that those of adjacent rays come less closely into contact.

This flattening of the apposed sides of the radials and lower brachials is a character which, so far as my knowledge goes, does not appear in any of the Pentacrinidæ, though it is very marked in the fossil *Solanocrinus costatus*, Goldfuss. Quenstedt¹ figures a ray of this species in which the flattened sides of the syzygial axillaries and of the two lowest brachials are very clearly shown. He says that "von der Seite zeigten nur das erste und zweite Armglied eine breitere Fläche, die mit dem dritten plötzlich schmal wird, und alsdann ganz verschwindet, zum Zeichen, dass mit dem vierten Gliede die Arme schon ganz getrennt waren, und sich mit ihren Innenrändern nicht mehr berührten." In like manner Walther² says of the same type "dass, wie bei dem Stück von Quenstedt die drei untersten Armglieder mit seitlichen Gelenkflächen eng verbunden sind und einen *Brachialen Pseudo-kegel* bildeten, so dass sich also die Arme erst vom vierten Glied an bewegen konnten."

In *Encrinus* and in some species of *Apiocrinus* this character is considerably exaggerated, the radials and the lower parts of the arms fitting very closely against their fellows on either side. Traces of it also appear in *Holopus*, as described on p. 206 of Part I.

In all but two of the twenty species which belong to the *Basicurva*-group, and have the lower parts of the rays flattened laterally and wall-sided, there are definite covering plates on the pinnule-ambulacra which rest on a limestone band more or less completely segmented into side plates, as for example in *Antedon breviradia* (Pl. XIX. fig. 4). But in two species, *Antedon denticulata* and *Antedon pusilla*, there is no ambulacral skeleton at all, a peculiarity which separates them very distinctly from the other members of the group.

¹ Encriniden, p. 174, tab. xcvi. fig. 26a.

² *Loc. cit.*, p. 171.