

exigua (Pl. XXX. fig. 1; Pl. XXXII. fig. 4); while in the group of species allied to *Antedon eschrichti* they are more or less flagellate, consisting of a large number of relatively short joints (Pl. XXIV. figs. 1-3, 7-9; Pl. XXV. figs. 1-3; Pl. XXVII. figs. 8, 9). There is much less variation in this respect in the oral pinnules of *Actinometra*, which are always provided with a terminal comb (Pl. LIII. figs. 3-6), a character which never occurs in *Antedon*.

On the other hand, the sacculi which are almost invariably present in this genus, never occur in *Actinometra*, even when species of the two genera are living side by side in the same locality; and this fact is a very strong argument against the theory of Vogt and Yung¹ that the sacculi are symbiotic Algæ, as I have explained elsewhere.² There are a few species of *Antedon*, e.g., *Antedon quinquecostata*, in which they are small and poorly developed, though they are abundant in others obtained at the same localities; and in some other instances the condition of the specimen has been such that I have not been able to assure myself satisfactorily of the presence of sacculi. This is the case for example with the two specimens of *Antedon abyssicola* from 2900 fathoms, the greatest depth at which Comatulæ have been obtained; but they are fairly abundant in another individual of the same species from 2600 fathoms in the Southern Sea. There are few species of *Antedon* in which they are not present; though they are more variable in their occurrence among the species of *Eudiocrinus*, as has been already explained.

The very definite relation of the sacculi to the side plates of the ambulacra in those species of *Antedon* which have a highly differentiated ambulacral skeleton is a very strong argument against the views of Vogt and Yung that they are symbiotic Algæ. It was pointed out on p. 127 of Part I. how the distal edges of the side plates are notched for the reception of the sacculi, and figures were given on pl. liv. illustrating this character in four species of *Antedon*. But it does not occur at all in species of *Pentacrinus* and *Metacrinus* which live at the same localities as these Comatulæ (Stations 170A, 175, 192, 214), and I cannot think, therefore, that the problem of the nature of the sacculi has been solved by Vogt and Yung. These are not the only difficulties which suggest themselves in connection with the details of their theory as I have explained elsewhere.³

Classification.—It has been shown on a previous page how the numerous recent species of *Antedon* may be associated together into groups of variable size, according to the characters of the rays and of their subdivisions. The first group to be considered includes those species in which the two outer radials are united by a syzygy and not, as is most frequently the case, by a bifascial articulation. Five of the eight recent species of *Pentacrinus* are distinguished by this character, and it occurs in several species of

¹ *Op. cit.*, p. 570.

² On the Supposed Presence of Symbiotic Algæ in *Antedon rosacea*, *Quart. Journ. Micr. Sci.*, 1887, new ser., vol. xxvii. p. 386.

³ *Ibid.*, pp. 380-384.