

it had only been indicated as a septum in my preliminary account in the *Annals of Natural History*. The examination of fresh specimens of *Rhabdopleura* off the Norwegian coast had enabled him to detect the existence of a "consistent mesoblastic skeleton" in the lophophoral arms, as in *Phoronis*, and thus forewarned he had comparatively little difficulty in making out "a precisely similar skeleton" in *Cephalodiscus*. In the latter the so-called "skeleton" of the arms is fixed to the basal apparatus formerly described, and seems to consist of a somewhat firm basement-tissue with longitudinal fibres and reticulations in certain parts. It differs considerably from the condition as figured in *Rhabdopleura*, in which twisted filaments and particles are described by Lankester. The pinnæ which pass out from the main stem do not taper, and are composed for the most part of granular hypoderm with a few brownish pigment-cells, and the central axis or skeleton. The pigment gives in some a light pinkish or pale violet blush to the feathery plumes, which in life must have been finely tinted; and it is further interesting that the same pigment occurs in the lophophore of *Rhabdopleura*, as shown in Professor Lankester's excellent figures.¹ The skeleton (Pl. IV. figs. 1, 2a) runs from base to apex and terminates within the cellular tip. It is somewhat dilated where it joins the main stem (Pl. V. fig. 2, *sk*), and the exact mode of its junction with the axial channel of the latter is difficult to trace, so gradually is it merged into the tissues of the region. No definite ending of these axial structures occurs as in *Rhabdopleura*, where Professor Lankester figures them as if articulated to the skeleton of the arm, the base of the pinnules dilating, and the central region abruptly terminating, as it reaches the main stem. The dilated bases of the skeletal rods of the filaments in *Cephalodiscus* join the sides of the reticulated main channel, but no evidence of a continuous central lumen is observed in transverse sections of the free portions, though the double outline, and the appearance of sections of their bases (Pl. V. fig. 2), would indicate the possibility of such. Endosmosis at least would thus readily occur. In the transverse sections of the bases of the processes just alluded to a series of apertures appears in the tissue of the arm. The condition as described in *Rhabdopleura* therefore differs from that in *Cephalodiscus*, especially in regard to the skeleton of the arm, though the general plan of structure is similar. It would also appear to be more readily made out in the former than in the latter, though perhaps this may be partly owing to the examination of fresh examples. Professor Lankester describes the skeleton in *Rhabdopleura* as cartilaginous, but so far as appearances go in *Cephalodiscus* it more resembles a structureless translucent basement-substance, probably a modification of connective tissue. It was best followed in the preparations immersed in a weak solution of caustic potash.

The skeleton of the arms and their pinnules gives a definite character to the processes, as observed in the sketches. Though perfectly mobile, the pinnules stand out from the stem somewhat stiffly, the curves being for the most part terminal, and thus they

¹ *Quart. Journ. Micr. Sci.*, vol. xxiv., N.S., p. 621.