We have as yet but few data regarding the development of the fascioles. As far as the palæontological development is concerned, we find that the earliest Spatangoids, like the Dysasteridæ, have no fascioles. In the Cretaceous period we have at first Spatangoids either with a peripetalous or with a sub-anal fasciole; then we have Spatangoids with both; and finally Spatangoids in which the two are connected by a lateral branch, or in which the branch may form an independent fasciole. We find in Adètes Spatangoids, and in those Spatangoids which have no peripetalous fasciole, that the passage from the petaloid to the apetaloid part of the ambulacra is quite gradual, and that in the older genera the plates of the ambulacra are of comparatively uniform size from the apex to the actinostome, while in those genera in which the peripetalous fasciole exists we find a marked contrast between the infrapetalous plates and the following ones; and, owing to the crowding of the additional plates of the petals within this sharply-marked line, we find that the Spatangoids with peripetalous fascioles also have more markedly petaloid ambulacra. It is also within the areas of these fascioles that the ambulacral suckers attain a great development as in *Brissopsis*, in *Aërope*, in *Aceste*, in *Schizaster*, and in the area of the sub-anal fasciole within which the ambulacral pores often take a very regular arrangement forming a sort of shield edged by the fascioles. As Lovén has already suggested, everything we know of the appearance of the anal fasciole seems to show that the anal, lateral, and marginal fascioles are only modifications of the sub-anal fasciole and of its branches, and that the sub-anal fasciole itself may even have originated as a loop of the peripetalous fasciole, although at present the palæontological evidence renders it somewhat doubtful whether the sub-anal and peripetalous fascioles have not originated independently. The internal fasciole I look upon as being an embryonic peripetalous fasciole.[1] There is nothing in the development of the Pluteus to show that the vibratile cords forming such characteristic fascioles in the larvæ of Echinoderms have any relation whatever with the fascioles of the full-grown Sea-urchin; yet every writer who has treated the subject of fascioles invariably goes out of his way to make a comparison between the fascioles and the vibratile cords of the Pluteus; as the fascioles are developed on plates which, as a rule, have not yet appeared during the existence of the vibratile cords, it seems difficult to trace the connection between the two in subsequent stages of growth.

Acanthology.

In an exceedingly interesting paper[2] on the Acanthology of the Desmosticha, Mr Mackintosh has proposed a classification of the spines of the Desmosticha which, as far as his sub-series are concerned, agrees well with the affinities of the families of the group as generally adopted. The primary series do not present, it seems to me, the

[1] See remarks on *Aceste* and *Aërope*.

[2] H. W. Mackintosh, On the Acanthology of the Desmosticha, Trans. Roy. Irish Acad., vol. xxvi., 1878.