quite devoid of any enclosed corpuscles. As to the foreign enclosures themselves, they are represented in both the Challenger specimens almost exclusively by sand-grains, some of Dr. Marshall's specimens having proved to be also very rich in them, while others, on the contrary, were poor in sand and rich in fragments of mussel-shells. I agree entirely, however, with Dr. Marshall as to the impossibility of paying any systematic attention to such differences. Of course the faculty has been ascribed to sponges of choosing from the available foreign bodies those which they need. Haeckel adopts it with respect to his *Physemaria*;[1] and Carter, though on a different occasion,[2] speaks also of "that developmental intelligent power whose existence in every organised product is only known to us by its manifestations." However, the contrary opinion, held by F. E. Schulze and Marshall, is supported by more valid arguments, and there is absolutely no necessity for introducing into our scientific calculations a new thoroughly unknown factor, while the phenomenon admits of a very simple and plausible mechanical explanation.

So far now as the anatomy of the form in question is concerned, Marshall believes the *Psammopemmata* to be of very low organisation, and if I understand him aright, he sees it in their lipostomy and lipogastry. These two peculiarities, provided that the lipostomy be really characteristic of the genus, are, however, of very subordinate significance; a lipostomic and lipogastric Leuconid is yet more highly organised than a Sycon provided with the broadest central cavity and with an osculum fringed with the most elegant spicules,—such questions, without knowledge of the structure of the canal system, not being at all capable of solution. That of the *Psammopemmata* agrees in its features closely with that, for instance, of *Spongelia pallescens*, as described by F. E. Schulze. The flagellated chambers are large, of more or less regularly roundish outlines, and devoid of any special cameral canaliculi; the ground-mass surrounding them is transparent and without granules (Pl. III. fig. 4). There is also a close resemblance to the representatives of *Spongelia* in the histological properties, the only difference being that such aggregations of fusiform cells as Schulze[3] describes for *Spongelia avara* are not to be found in the two Challenger specimens of *Psammopemma*. In this statement I differ from Marshall, who lays stress on their constant occurrence in (under?) the covering dermis. I find these fusiform cells scattered everywhere and also under the dermal membrane, but in most cases lying isolated, and never in such mutually parallel disposition as in Marshall's illustration (*loc. cit.*, pl. viii. fig. 10). Nor can I agree with him as to this dermal membrane being homogeneous (*loc. cit.*, p. 113). I found it to contain nuclei disposed at approximately equal distances from one another, and on the ground of numerous analogies I am inclined to regard it as a common pavement-epithelial layer, the boundaries of its separate cells having disappeared owing to the preservation in alcohol.

[1] Biolog. Studien, Heft. ii. p. 213.

[2] I refer to his discussion of the process of the horny skeletal fibres taking in and enclosing the foreign bodies, *Ann. and Mag. Nat. Hist.*, ser 5, vol. viii. p. 113.

[3] *Zeitschr. f. wiss. Zool.*, Bd. xxxii. p. 136.