

rows of minute openings, there are two principal apertures, the *mouth* and *outlet*; and also a few large pores on the summit, for the exclusion of the ova, or for the free admission of water. The form and disposition of the parts here described, afford characters for the numerous genera into which the order is divided. The mouth, which is situated on the lower part, is in some species furnished with five sharp angular teeth, which are attached to a calcareous frame-work that admits of being protruded; this apparatus, when extracted entire, is commonly called "*Diogenes' lantern*." The papillæ on the surface of the plates vary in size from mere granules, to large mammillated tubercles; they serve for the attachment of moveable spines, which also present great variety of form and ornament. The spines have a cavity at their base which fits on the papillæ, and are only supported by the capsular envelopment of the common integument, in many species; but in others, the large spines are attached by a ligament which passes from the centre of the socket, and is received in a perforation of the papilla of each tubercle, in the same manner as in the head of the human thigh-bone.

Transverse slices of the spines, exhibiting their cellular structure, form beautiful objects under the microscope. There are also minute prehensile appendages to the integument, called *pedicellariæ*, but I have not observed any traces of them, even in the best preserved fossil echini.