

In one genus of the Geodiidæ, viz., *Erylus*, which belongs to the subfamily Erylina, the sterrasters, in addition to presenting a different form to those of the rest of the family, differ also in their mode of union: the fibrillated inocytes which bind them together are attached to their surface, but do not appear to take a direct course from one sclere to the other; so far as I can make out they wrap round them instead.

On the inner face of the sterrastral layer is a layer of fibrous tissue in which the fusiform cells are tangentially arranged; this, which differs in thickness in different species, will be spoken of as the "inner fibrous layer"; it and the sterrastral layer together are probably homologous with the fibrous layer of the Stellettid cortex.

On the outer face of the sterrastral layer, between it and the outer epithelium, is a layer of tissue, which differs in thickness and character with the species, occasionally it is collenchymatous, but usually cystenchymatous; it will be termed the "ectochrote." A layer of microscleres (somal) invariably occurs in the ectochrote immediately below the outer epithelium, and these spicules remain to indicate it in those cases where it is so much reduced that but for them it would naturally be set down as absent. In one case, *Cydonium glariosus*, it contains numerous embedded grains of sand.

The existence of the sterrastral layer gives great definiteness to the chones, which traverse it usually as wide, simple, more or less cylindrical canals, closed at the inner end by a very evident sphincter; at the outer end they may either open directly to the exterior by a simple large pore (uniporal chones), or break up into numerous ramifying canals, or extend into wide subdermal sinuses, within the ectochrote, and then open to the exterior by many pores with a sieve-like arrangement (cribriporal chones).

The excurrent canal-system opens to the exterior in very various ways, in some cases by chones not differing in character from those of the incurrent system, so that, as well as incurrent, we may have excurrent uniporal or cribriporal chones; in other cases different arrangements prevail, thus in *Pachymatisma* the oscule is the opening of a large chone which leads through the sphincter into a subcortical chamber, in which several large excurrent canals open by non-sphinctrate apertures, this structure may be regarded as an overgrown uniporal chone; in *Erylus* and *Caminus* the oscule is the opening of a large cloaca which receives the excurrent canals by non-sphinctrate openings, this may be regarded as an overgrown uniporal chone without a sphincter, and in connection with this we may notice that the incurrent chones in these genera do not appear to be sphinctrate either; finally, in *Geodia* the oscule leads into a cloaca, into which numerous large excurrent canals open, each provided with a special sphincter, this structure we may suppose has been produced by the overgrowth of the centripetal end of a uniporal chone and the multiplication of its sphincters. It must not be supposed, however, that the cloacal structure of *Geodia* has been actually produced in this way, in all probability it arises in the manner explained on p. xxxi *et seq.*

It is on the characters of the excurrent and incurrent openings taken together that