sponge resulting (*Pœcillastra schulzii*), the included cavity of which has been called a "pseudogaster," and the mouth a "pseudostome." It is conceivable that the margins of such a vase may incurve till a hollow sac-like form results, but nothing parallel to this occurs in the Tetractinellida.

It is possible that the cloaca of some sponges may result from an invagination of the ectosome, in which case the cloaca would be a pseudogaster, and its apparent oscule a pseudostome; it is just possible that the cloacas of *Cinachyra barbata* and of *Chrotella macellata* may be of this nature.

When the sponge presents an incurrent as distinguished from an excurrent surface, as is the case in most if not all plate-like sponges, the incurrent surface may be invaginated, or the sponge may be folded, so that the incurrent face forms the inner surface of the folds; in such a case an incurrent epochet or esochet,—the "vestibule" of von Lendenfeld —results. Such vestibules occur in *Cinachyra barbata*, though they appear to result rather from an invagination of the cribriporal roofs which overlie the incurrent canals than from an invagination of the actual cortex. These vestibules do not differ in any structural particular from the cloacas of the same sponge, and this leads me to imagine that the cloacas of this sponge and of *Chrotella macellata* may be truly exochets, since they result from the invagination of the cribriporal roof of excurrent canals.

In many Geodine sponges long irregular canals result from an infolding or ingrowth of the incurrent surface, but these vestibules are not always poriferous, frequently they are lined by the chitinous tube of some infesting Annelid, which may, indeed, have provoked their formation. As is well known, the worms inhabiting the epochets in the horse sponge, *Hippospongia equalis*, were mistaken by Peysonnel for the essential animal of the sponge.

In the gigantic Geodine sponge, *Cydonium neptuni*, the sponge-wall acquires considerable thickness through the rich development of both exochets and esochets, which, however, cannot serve as canals, since most of them are filled with a dense accumulation of spicules, extruded into them by the sponge.

Histology.

In the Tetractinellida the ectoderm always occurs as an epithelium consisting of pavement-cells (pinacocytes). It invests the exterior of the sponge and lines the intercortical cavities and incurrent canals.

The endoderm except where it lines the flagellated chambers is also an epithelium, which differs in no perceptible respect from that of the ectoderm.

The greatest variety of histological detail is presented by the so-called mesoderm.

A cuticula does not appear to exist, at least I have never found any traces of it, and