

constituting one-half the thickness of the whole cortex. These two layers may be distinguished as the inner and outer layers of the cortex. In the Sponges with a cortex excavated by intercortical cavities, the pores are distributed generally in sieve-like groups over the whole external surface; in *Cinachyra* they are restricted to special poriferous recesses, invaginated into the choanosome, hence in this sponge there is no longer any need for intercortical cavities, and accordingly the cortex is solid throughout, consisting mainly of a densely fibrous layer of fusiform cells, with a minimum of associated gelatinous matrix.

*The Oscules* may be the simple openings of single excurrent canals (*Tetilla*), or the mouths of special cloacal recesses (*Chrotella macellata*, *Cinachyra barbata*), or each may be the mouth of a system of intercortical cavities, which receive several excurrent canals. These canals pass through the inner layer of the cortex and open into the intercortical cavities by sphinctrate apertures (*Craniella*).

Associated with the progressive modification of the ectosome are certain changes in the character of the mesoderm and the chamber-system; the collenchymatous mesoderm of the non-corticate species (*Tetilla*) becomes a granular collenchyma in the simpler corticate species (*Chrotella*), and a true sarcenchyme in the higher (*Craniella*); correspondingly the flagellated chambers pass from a eurypylous to an aphodal stage, at the same time becoming reduced in size (from about 0.071 by 0.044 mm. in *Tetilla*, to 0.025 by 0.035 mm. in *Craniella*).

*Genital Products.*—Ova have been met with in *Chrotella macellata*, and spermatozoa in sperm-clusters in several species, in *Tetilla pedifera*, *Tetilla grandis*, *Chrotella macellata* (in which they occur in vast numbers in the vicinity of the cloacas), and in *Craniella schmidtii*; they have also been observed in *Craniella cranium*.

*Development.*—The embryos and young Sponges observed in *Craniella simillima* and *Craniella schmidtii* are described on pp. 33, 40.

### Genus 1. *Tetilla*, O. Schmidt.

*Tetilla*, O. Schmidt, Spong. Küste v. Algier., p. 40, 1868.

„ O. Schmidt, Spong. Atlant. Gebiet., p. 66, 1870.

„ Sollas, Sci. Proc. Roy. Dubl. Soc., vol. v. p. 179, 1886.

The ectosome is never differentiated to form a cortex, and never provided with special spicules. It may be absent altogether, *i.e.*, represented only by the layer of investing epithelium, or it may exist as a layer of soft fibro-vesicular collenchyma, as much as 0.5 mm. thick. The mesoderm is a collenchyma; and the canal-system eurypylous. The megascleres are arranged in radiating fibres, but separate oxeas are also present, crossing those of the fibres transversely.

Type—*Tetilla euplocamus*, O. Schmidt.