the most they can only be regarded as centrifugal extensions of the subdermal cavities.

To this type the cortex of the Geodiidæ may be assigned, as will appear from observations on a young Geodine sponge described later.

Type 2. *Craniella simillima.*—An altogether different history is presented by the cortex of this sponge. In the adult, however, the cortex appears to be exactly homologous with that of *Stelletta phrissens.* It consists (Pl. II. figs. 12, 13) of (1) a thick fibrous inner layer, crossed by cylindrical canals, sphinctrate at their inner ends, and (2) a thick outer collenchymatous layer widely excavated by extensive cavities, which are large and continuous in the young sponge, but in older examples become subdivided by a rich development of trabeculæ, which increase in thickness till they reduce the originally simple cavity to a collection of lacunar spaces. The first-mentioned layer (1) would naturally be regarded as equivalent to the inner fibrous layer with that portion of the chones traversing it in the cortex of *Stelletta;* the second (2) to the outer collenchymatous

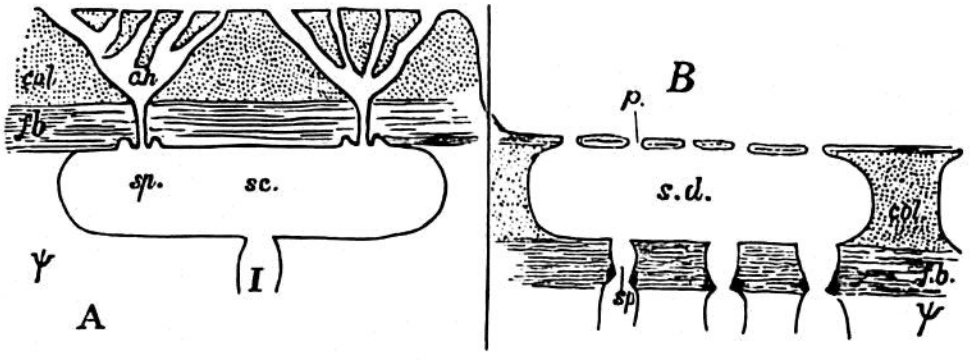

FIG. VII.—The two types of cortex and their associated canals. A. Stellettid type. B. type of *Craniella*. *sc.*, subcortical crypt; homologous with *s.d.*, subdermal cavity; *col.*, collenchymatous layer of the cortex; *fb.*, fibrous layer; ψ, choanosome; *ch.*, chone; *p.*, pore; *sp.*, sphincter.

layer of that cortex and the outer ends of several chones run together. Such, however, is not the case.

In the youngest observed specimens of *Craniella simillima*, taken out of the parent and measuring 1·4 by 2·4 mm. in length and breadth, the cortex is subdivided into two regions, one of which, partly fibrous and much the thicker, is continuous with the choanosome, from which it evidently arises by metamorphosis; the other forms a thin investing membrane separated from the inner thicker layer by wide and deep cavities, which are evidently the widely extended superficial ends of the incurrent sinuses or true subdermal cavities (Pl. II. fig. 19). In this case the cortex is evidently of a composite nature, consisting partly of the dermal membrane, partly of the metamorphosed ends of the excurrent lobes of the choanosomal folds; in *Stelletta*, on the other hand, the cortex is derived entirely from the dermal membrane by a thickening and differentiation of its mesoderm. The chones consequently are secondary formations, and the intercortical cavities of *Craniella* are not homologous with them but with the subcortical crypts.