

three layers of tissue, the fundamental ectoderm and endoderm, and the so-called mesoderm.<sup>1</sup>

The mesoderm is a very thin layer, consisting of collenchyma (see p. xxxviii), the ectoderm is an epithelium of pavement cells (*pinacocytes*), and the endoderm is partly composed of flagellated collared cells (*choanocytes*), and partly of pinacocytes.

The hypophare consists of mesoderm lined by pinacocytal endoderm above, and ectoderm below; the spongophare is characterised by evaginations of the endoderm, which forms pouch-like recesses in the mesoderm, and within these it consists of choanocytes, elsewhere of pinacocytes.

The recesses, known as flagellated chambers, communicate with the cavity of the sac (*paragaster*) each by a single wide mouth (*apopyle*), and with the exterior by a small pore (*prosopyle*).

A single comparatively large opening (*oscule*) at the summit places the paragaster in free communication with the surrounding water. The oscule is not derived from the blastopore, which in the larval stage immediately preceding that of the Rhagon is situated in the centre of the primitive hypophare.

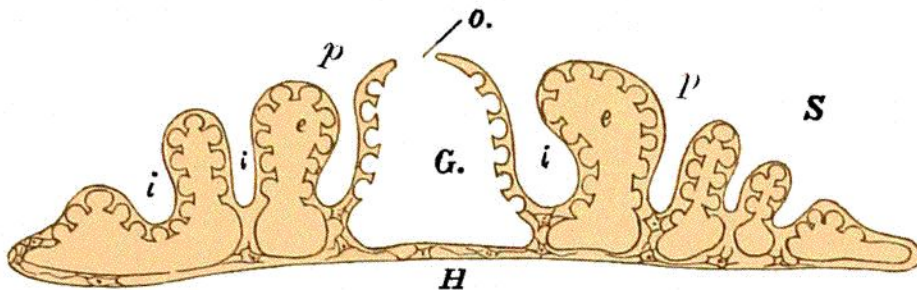


FIG. II.—Diagram of a young sponge, showing the folded spongophare. S, spongophare; H, hypophare; O., oscule; G., paragastral cavity; e, excurrent canal; i, incurrent canal; p, pore.

In the case of many spherical sponges which in their earliest known stages are not attached, but free, the hypophare is probably not developed at all (or possibly metamorphosed at a very early stage), the Rhagon in all probability having a spherical form and consisting wholly of the spongophare.

Doubtless the Rhagon is readily derivable from the Ascon; but it never actually passes through an Ascon stage, differing in this respect from the Sycon, from which it is also distinguished by the more spherical form of its flagellated chambers. The whole course of embryological history of the Rhagon differs from that of the Megamastictora in numerous details, and particularly in the absence of an amphigastrula stage.

The successive stages by which the Rhagon passes into the adult sponge have not been traced, but Schulze has sufficiently shown, at least in some instances, the probable course of events, which consists simply in a folding of the spongophare which proceeds

<sup>1</sup> These terms are used merely for convenience; it is far from certain that the tissues they denote are homologous with those similarly named in the Metazoa.