no spicules occur, and only much modified elements in the two limiting lamellæ, the basis, the oscular margin, &c.

If we assume that the spicules in the body-wall serve essentially only for the support or stiffening of the soft parts, it is to be expected that that form and disposition of the skeletal elements will in each case be developed which in the given circumstances is best fitted to give the necessary firmness to the body-wall.

I am decidedly of opinion that it can be shown with convincing probability that such a necessary relation does exist between the structure of the soft parts in each of the three principal groups of sponges and the characteristically typical forms of spicule

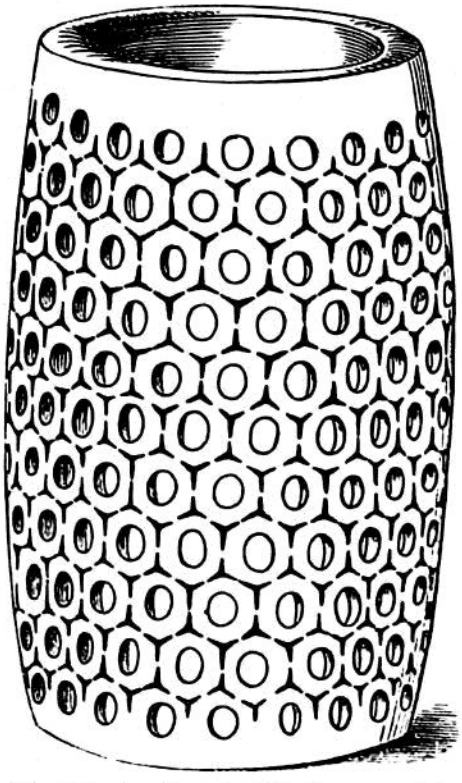

Fig. 10.—Triacts with each of the three rays lying at a uniform angle between two adjacent pores.

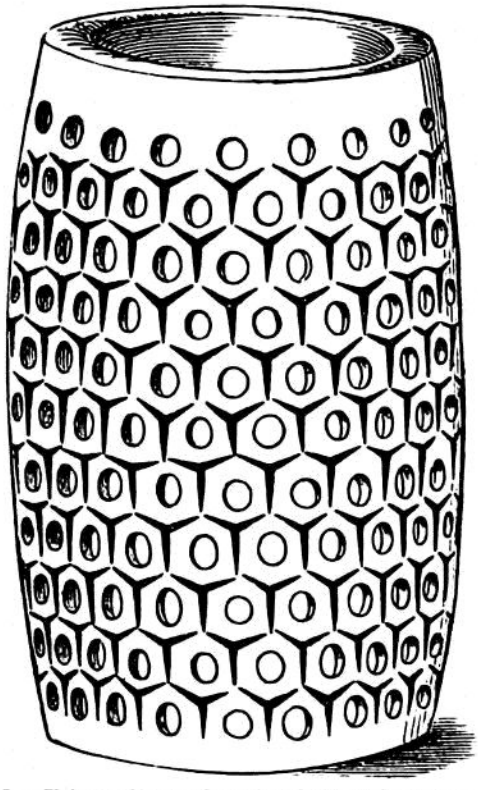

Fig. 11.—Triacts disposed so that half of the interspaces are occupied by their central portions and the other half by their convergent rays.

which we regard on anatomical and developmental ground as primitive and fundamental for each group.

If a plate is to be perforated by the maximum number of uniformly large spherical pores in such a way that the lumina of the pores have a certain scope for expansion or contraction, these pores can only exhibit one definite mode of arrangement, namely, that of the cells of a honeycomb, and will leave a network with somewhat broad beams between them.

If the plate consist of a mass which requires to be supported by the deposition of hard parts, and if these are, on the one hand, to preserve the maximum of firmness, and on the other to allow of a certain degree of expansion both to the entire tube and also to the