chamber still has several prosopyles, through which it receives water from the ultimate branches of the inhalant canals, while it opens into a relatively large exhalant canal by a wide apopyle. This is the highest type of canal-system met with amongst the Calcarea. It is sometimes known as the Leucon type and is seen in most species of the genus *Leucandra,* as well as in many others.

It is almost identical with one of the types commonly found in non-calcareous sponges (e.g. *Plakina,* fig. 4), but has of course been evolved independently. The various types of canal-system met with in the Calcarea are connected together by numerous intermediate forms, thus forming a very interesting evolutionary series, while both the Sylleibid and Leuconoid types appear to have been in­dependently evolved several times, thus affording excellent examples of the phenomenon of. convergence, a phenomenon which is very frequently met with amongst sponges.

In describing the anatomy of *Plakina* as a type of non-calcareous sponge, we have traced the development of a fairly complex canal-system from the so-called Rhagon form. We can, however, hardly regard the Rhagon as representing a fundamental type of canal-system common to all the Non-calcarea, for in some of the Myxo- spongida, which are the most primitive of all, and again in the Hexactinellida, we find a type characterized by the presence of elongated sac-shaped flagellated chambers resembling those of the Sycon type amongst the Calcarea, and these chambers are arranged radially around the exhalant canals *(Halisarca,* Hexactinellida). The first recognizable stage in the evolution of the canal-system of the Non-calcarea would thus appear to be a condition not unlike that of *Sycon,* with a number of elongated chambers arranged radially around a central gastral cavity and having their blind outer extremities covered over by a dermal membrane. This stage is very nearly reproduced in the young form of a Hexactinellid sponge, *Lanuginella pupa.* From some such form the Rhagon type may perhaps be derived by flattening out of the lower end of the sponge into a broad base of attachment, and by reduction in the size of the flagellated chambers, accompanied by a more irregular arrangement.

Starting from the primitive Myxosponge ancestor, with large sac-shaped chambers, radially arranged, the Non-calcarea have apparently developed along four main lines, giving rise to the exist­ing Myxospongida, the Hexactinellida (Triaxonida), the Tetraxonida

and the Euceratosa. The Myxospongida have retained the large size of the chambers in certain forms *(Halisarca, Bajalus)* but have lost this primitive character in the more advanced members of the group *(Oscardla).* The Hexactinellida have retained the large size and radial arrangement of the flagellated chambers throughout their entire series. The chamber layer, however, tends to become more or less folded (fig. 19), and always lies between two layers of

loose trabecular tissue in which the canals are represented by irregular spaces. the Tetraxonida appear to have suffered reduction in the size of the flagellated chambers at a very early date, and it is of this group especially that the Rhagon type is characteristic (e.g. *Plakina,* fig. 4). The Euceratosa exhibit a beautiful series,