

*mülleri* = *Haliommatidium mülleri*) (*loc. cit.*, pp. 11 and 27). This serotinous division of the nucleus seems, however, to be rather widely spread in both sublegions of the ACANTHARIA; I have found, not only in the forms above mentioned, but also in several others belonging to different genera, a single large excentric nucleus, even in those individuals in which the skeleton was fully developed.

C. The peculiar mode of nuclear budding, by which these small nuclei arise, appears to proceed in the following manner (Pl. 129). The vesicular primary nucleus, which, in consequence of the centrogenous development of the skeleton protrudes as it grows into irregular lobes (Pl. 129, fig. 9), assumes a peculiar concavo-convex form, sometimes that of a hood or dish, sometimes that of a kidney or sausage. The convex surface is apposed to the capsule-membrane, while the concave is turned towards the central star of the skeleton (fig. 6). There is now formed at the centre of the convex surface of the strong, doubly-contoured, nuclear membrane, a flask-shaped invagination with a narrow neck and expanded base; the membrane now becomes disposed in peculiar folds, which at the narrow aperture of invagination appear as folds, but on the expanded body of the flask take the form of concentric rings, laid closely side by side (Pl. 129, fig. 10). The convex bottom of the flask, which is directed towards the concave proximal side of the nucleus, becomes again invaginated by a central conical apophysis of the enlarged nucleolus, which is situated between them. Usually the nucleolus has already become flattened into a lentiform shape, and upon its distal face a conical apophysis has been developed, which is divisible into a darker proximal and clearer distal portion. The tip of the latter appears to be in direct connection with the nuclear membrane at the centre of the base of the flask-shaped invagination (figs. 6, 10). At this stage of development the nucleus of the ACANTHARIA generally presents the characteristic form of a hood-shaped, concavo-convex vesicle, whose radial axis is also the axis of the flask-shaped distal invagination, and of the depressed conical nucleolus, which lies between the latter and the concave side of the nucleus. After this peculiar invagination has persisted for some time in connection with the enlarged nucleolus, both disappear, and then a remarkable growth of lobular processes takes place on the concave proximal side of the hood or kidney-shaped nucleus; from four to eight knobs of unequal size usually appear, and their thickened wall encloses a variable number of small nucleoli; these are at first few but afterwards more numerous (fig. 7). Subsequently these knobs or lobes become completely separated by constriction from the original central mass of the nucleus, and appear as so many separate independent "sausage-shaped bodies" in the hollow central capsule (fig. 8). Each of the bodies now appears, and at first on its convex aspect, to form a large number of small nucleoli, which either separate by constriction from it or become free by its breaking up and lie in numbers in the central capsule. Finally the buds or lobes of the nucleus break up entirely into such nucleoli, which are evenly distributed in the central capsule, and become the nuclei of the swarm-spores (fig. 11). Compare R. Hertwig, L. N. 33, Taf. i.-iii. pp. 19-25.

69. *The Nucleus of the Monopylea.*—The nucleus in the mature forms of the NASSELLARIA or MONOPYLEA is generally simple or lobate, homogeneous or vesicular and *excentric*, and appears only to divide into numerous small nuclei just before the formation of the spores. Nevertheless I have sometimes, though not often, seen in representatives of very various families of the MONOPYLEA, the central capsule filled with many small spherical homogeneous nuclei (Pl. 53, fig. 19). Hence all the families of this legion appear to be serotinous, their simple primitive nucleus persisting for a long period. It