wasserhelle Bläschen"). I was in error, however, in regarding the latter as identical with the so-called "hyaline spherules" in the central capsule of many Monozoa, which rather belong to the category of intracapsular vacuoles (see § 72). The credit of recognising, by the aid of the modern methods of staining, the distinctness of these two structures, which may readily be mistaken for each other, and of demonstrating the true nature both of the serotinous and precocious nuclei, belongs to Richard Hertwig (1879, L. N. 33).

68. *The Nucleus of the Actipylea.*—The nucleus of the ACANTHARIA or ACTIPYLEA shows very peculiar relations in respect of structure and division, particularly special forms of lobular budding, which belong to the characteristic peculiarities of this singular legion, and are not found among other Radiolaria. The position of the nucleus is *always excentric*, even in the youngest ACANTHARIA, for the centrogeneous formation of the skeleton, the constant development of the earliest radial portions of it in the middle of the central capsule, forces the nucleus from its normal central position. The majority of the ACANTHARIA, like most Polycyttaria, are precocious, the primary nucleus early dividing into numerous small nuclei (see note A below). Nevertheless there are many exceptions to this rule in different families, *e.g.*, *Stauracantha*, *Xiphacantha*, *Phatnacantha*, and *Pristacantha* among the Acanthometra, and *Stauraspis*, *Echinaspis*, *Dodecaspis*, and *Phatnaspis* among the Acanthophracta. In these instances the primary nucleus remains for a long time as a simple excentric ellipsoidal or irregularly round body, even in the fully developed stage, and only at a very late period (sometimes just before the formation of the spores) divides into many small nuclei. Since this serotinous division of the nucleus takes place in different genera of very various groups, it can only be decided by further investigations how widely it is spread among the ACANTHARIA, and upon what circumstances it is dependent (see note B). The division of the nucleus appears to be precocious in the majority of this legion, and a number of small nuclei appear to be early formed by a peculiar process of budding; in most fully developed ACANTHARIA these are disposed in one or two layers under the surface of the central capsule, but if their numbers increase to any considerable extent, the whole space between the skeletal rods becomes filled with small nuclei; sometimes these are homogeneous, sometimes vesicular, 0·002 to 0·012 mm. in diameter; usually they are spherical and have a small nucleolus (compare Pl. **129**, figs. 6–11, and note C).

A. The numerous nuclei, which are to be found in the central capsule of most mature ACANTHARIA, were first described in my Monograph (1862) as "spherical, transparent vesicles, provided with a small dark granule" (p. 374, Taf. xv. figs. 2, 5; Taf. xvi. figs. 2, 4; Taf. xxi. fig. 7, &c.). Their more minute constitution and peculiar origin were first accurately delineated by R. Hertwig (1879, *loc. cit.*, pp. 11–24, Taf. i–iii.).

B. The fact that in a number of ACANTHARIA the nucleus does not divide early as in the majority of the legion, but only at a later period, was first observed by R. Hertwig in a species of Acanthometra (*Xiphacantha serrata*), and a species of Acanthophracta (*Phatnaspis*