yellow either with nitric acid or with iodine. In dilute mineral acids they dissolve more rapidly than in concentrated. My usual method of cleansing the skeleton of ACANTHARIA (which has been practised with the same result on thousands of specimens) consists in heating the preparation in a small volume of concentrated sulphuric acid and then adding a drop of fuming nitric acid; all other constituents (the whole central capsule and the calymma) are thus very rapidly destroyed; the skeleton remains quite uninjured and withstands the combined action of the mineral acids for a longer or shorter time, though on prolonged heating it also is dissolved. I do not therefore regard acanthin as an albuminous substance, but as one related to chitin.

D. Calcareous skeletons have not been certainly demonstrated in the Radiolaria, and probably do not occur. Sir Wyville Thomson in his Atlantic (1877, L. N. 31, vol. i. p. 233, fig. 51) described under the name *Calcaromma calcarea*, a Radiolarian which contained scattered in its calymma numerous calcareous corpuscles "resembling the rowels of spurs." These are identical with the "toothed bodies, recalling crystal balls," which Johannes Müller figured in the Mediterranean *Thalassicolla morum* so early as 1858, and compared with the "siliceous asterisks of *Tethya*" (L. N. 12, p. 28, Taf. vii. figs. 1, 2). I formerly regarded these peculiar calcareous corpuscles, whose solubility in mineral acids I had observed, as spicules of a Thalassicollid, and hence described the species in my Monograph as *Thalassosphæra morum* (L. N. 16, p. 260). I have, however, seen reason to change my view, and am now led to suppose that those peculiar calcareous corpuscles, which may be named "*Calcastrella*," are not formed by the Radiolarian itself, but are foreign bodies which have been accidentally incorporated into the calymma of a Thalassicollid (*Actissa*). These corpuscles occur, often in large numbers, in many preparations in the Challenger collection, and in the calymma of other Radiolaria, chiefly Discoidea, hence it would appear that they are foreign bodies taken up by the pseudopodia and carried into the calymma by the circulation of the sarcode. The Radiolaria which Sir Wyville Thomson figured as *Calcaromma calcarea*, and Müller as *Thalassicolla morum*, I regard as species of *Actissa* (see p. 13), perhaps *Actissa radiata* of the Pacific, and *Actissa primordialis* of the Mediterranean (compare the description of the Thalassosphærida of the Challenger collection, pp. 30, 31).

103. *The Physical Properties of the Skeleton.*—The skeletons of all Radiolaria are characterised pre-eminently by a high degree of *firmness*, which fits them to serve as protective and supporting apparatus. This is obvious in the case of the pure siliceous shells of the Polycystina; but the acanthin framework of the ACANTHARIA also possesses a degree of stiffness but little inferior, whilst the silicate skeletons of the PHÆODARIA seem on the whole to be not so firm. The hollow skeletal tubes of the last-named, which are filled with gelatinous material, are very brittle on account of the delicacy of their walls. Their *elasticity* also is very small, whilst that of the acanthin spines is considerable. The thin long needles of many ACANTHARIA are very elastic, as are also the bristle-like siliceous spicules of many SPUMELLARIA. The *refractive power* of the skeleton in the various legions is very different, depending upon the chemical constitution. The siliceous skeleton of the Polycystina (SPUMELLARIA and NASSELLARIA) and the silicate skeleton of the PHÆODARIA have the same refractive index as glycerine, and hence become invisible when mounted in that fluid; they then become visible only on addition of