criterion. On the other hand, from the morphological standpoint, they are to be classed as neutral Protista, for in this respect their unicellular character is the prominent feature, and distinguishes them from all true multicellular animals (Metazoa). Compare my Gastræa Theorie (1873, Jena. Zeitschr. für Naturwiss., Bd. viii. pp. 29, 53).

204. *Nutrition.*—The nutritive materials which the Radiolaria require for their sustenance, especially albuminates (plasma) and carbohydrates (starch, &c.), they obtain partly from foreign organisms which they capture and digest, and partly directly from the Xanthellæ or Philozoa, the unicellular Algæ, with which they live in symbiosis (§ 205). *Zooxanthella intracapsularis*, found in the ACANTHARIA (§ 76), is probably of the same significance in this respect as *Zooxanthella extracapsularis* of the SPUMELLARIA and NASSELLARIA (§ 90); and perhaps the same is true also of *Phæodella extracapsularis* (or *Zoochlorella phæodaris?*) of the PHÆODARIA (§ 89). The considerable quantity of starch or amyloid bodies, elaborated by these inquiline symbiontes, as well as their protoplasm and nucleus, are available, on their death, for the nutrition of the Radiolaria which harbour them. Nutrition by means of other particles obtained by the pseudopodia from the surrounding medium is by no means excluded; indeed it may be regarded as certain that numerous Radiolaria (especially such as contain no symbiotic Algoid cells) are nourished for the most part or exclusively by this means. Diatoms, Infusoria, Thalamophora (Foraminifera) as well as decaying particles of animal and vegetable tissues can be seized directly by the pseudopodia and conveyed either to the sarcodictyum (on the surface of the calymma) or to the sarcomatrix (on the surface of the central capsule) in order to undergo digestion there. The indigestible constituents (siliceous shells of Diatoms and Tintinnoidea, calcareous shells of small Monothalamia and Polythalamia, &c.) are here collected often in large numbers and removed by the streaming of the protoplasm.

The inception and digestion of nutriment, as it usually appears to take place by the pseudopodia, has already been so fully treated in my Monograph (L. N. 16, pp. 135–140), and since then in my paper on the sarcode body of the Rhizopoda (L. N. 19, p. 342), that I have nothing of importance to add. Quite recently Karl Brandt has expressed a doubt as to whether the taking up of formed particles by the pseudopodia and their aggregation in the calymma be really connected with the process of nutrition. He is disposed rather to believe that these foreign bodies are usually only accidentally and mechanically brought into the calymma, and that the nourishment of the Radiolaria is derived exclusively or pre-eminently from the symbiotic Xanthellæ (L. N. 52, pp. 88–93). I must, however, maintain my former opinion, which I have only modified insomuch that I now regard the sarcodictyum (on the outer surface of the calymma, § 94) rather than the sarcomatrix (on the outer surface of the central capsule, § 92) as the principal seat of true digestion and assimilation. From the sarcodictyum the dissolved and assimilated nutritive matters may pass by the intracalymmar pseudopodia (or sarcoplegma, § 93) into the sarcomatrix, and hence may reach the endoplasm through the openings in the central capsule. To what an extent the Radiolaria are capable of taking up even large formed bodies into the calymma, is shown by the