

GENERAL INTRODUCTION.

ANATOMICAL SECTION.

A SKETCH OF OUR KNOWLEDGE OF THE ORGANISATION OF THE RADIOLARIA
IN THE YEAR 1884.

CHAPTER I.—THE UNICELLULAR ORGANISM.

(§§ 1-50.)

1. *Definition of the Radiolaria.*—RADIOLARIA are marine Rhizopoda, whose unicellular body always consists of two main portions, separated by a membrane; an inner *Central capsule* (with one or more nuclei) and an *Extracapsulum* (the external calymma, which has no nucleus, and the pseudopodia); the endoplasm of the former and the exoplasm of the latter are connected by openings in the capsule-membrane. The central capsule is partly the general central organ of the Radiolarian cell, partly the special organ of reproduction, since its intracapsular protoplasm, along with the nuclei embedded in it, serves for the formation of flagellate spores. The extracapsulum is partly the general organ for intercourse with the outer world (by means of the pseudopodia), partly the special organ of protection (calymma) and nutrition (sarcotrix). The majority of Radiolaria develop also a skeleton for support and protection, which presents the utmost variety of form, and is generally composed of silica, sometimes of an organic substance (acanthin). The Radiolarian cell usually leads an isolated existence (*Monozoa vel Monocyttaria*); only in a small minority (of one legion) are the unicellular organisms united in colonies or cœnobia (*Polyzoa vel Polycyttaria*).

The extent of the Radiolaria, as limited by the above definition, which I have made as compact as possible, differs in several important respects from that allowed to the group by all previous diagnoses. The shortest expression of its scope might perhaps be:—Rhizopoda with central capsule and calymma; for the most important character of the Radiolaria, and that by which they are distinguished from all other Rhizopoda, is the differentiation of the unicellular body into two principal parts of equal importance and their separation by a constant capsule-membrane,

2. *The Two Subclasses of the Radiolaria.*—The systematic catalogue of the Radiolaria, which forms the second part of this Report, and is brought up to the year