calcium as determined by analysis. The numbers within brackets in each of the other columns before *siliceous organisms*, *minerals*, and *fine washings*, give the estimated abundance of these in the deposit, as in the case of the relative abundance of the various carbonate of lime organisms under the heading carbonate of calcium; in short, all the numbers in the tables within brackets ( ) represent the estimated quantity present after examination, in contradistinction to those numbers without brackets, which are the result of quantitative determination.

1. **Siliceous Organisms.**—These consist generally of Diatoms, Radiolaria, and Sponge spicules of various kinds. The enumeration of the genera of these would much exceed the limits necessarily imposed by the style of the table, but full particulars are given in the special reports, to which the reader is referred. Under this heading are also grouped those Foraminifera, the tests of which are for the most part made up of the inorganic particles found in a deposit, like the Astrorhizidæ, Lituolidæ, &c. There are also placed under this heading the glauconitic and other casts of marine organisms which are occasionally found in considerable quantity in some deposits, and remain in the residue after the removal of the carbonate of calcium; these cannot, of course, be classed among siliceous organisms in the same sense as Diatoms, Radiolarians, and Sponge spicules, but their mineralogical characters are indistinct, and for descriptive purposes this appears the best place to note their occurrence. These casts bear distinctly the impress of the calcareous organisms, but their chemical composition has not been in all cases determined, though in many instances they are probably either a silicate corresponding to glauconite, or of a phosphatic nature. When glauconite is present with well-defined characters, it is placed among the mineral particles.

2. **Minerals.**—The fragments of minerals and rocks were examined on slides, first by reflected light, dry, and then by transmitted light, under the mineralogical microscope. Sometimes preparations were mounted in Canada balsam, or the particles were cemented together by gum copal, and then rubbed down till thin and transparent, by a process analogous to that used in making thin sections of rocks.[1] But this was possible only in certain cases, and generally we had to examine the mineral fragments on a slide with water, this mode of observation allowing the particles to remain free, and rendering easy chemical reactions under the microscope. The mean diameter and form of the mineral fragments are stated in all cases, as this is a matter of considerable importance in giving a clue as to the agents at work during the formation of the sediment under consideration. The order in which the species are mentioned in the tables is, generally speaking, that of their importance or abundance in the deposits. The characters which have guided us in diagnosing the mineral species most commonly met with in the deep-sea deposits are briefly stated below; the characters noted under the various species refer

[1] See F. G. Pearcey, Method of Consolidating and Preparing Thin Sections of Friable and Decomposed Rocks, Sands, Clays, Oozes, and other Granulated Substances, *Proc. Roy. Phys. Soc. Edin.*, vol. viii. pp. 295–300, pl. xi., 1884.