quantity of substance available, only a qualitative analysis could be made, which showed the presence in them of silica, magnesia, and iron.

"These remarks have been limited to these succinct details, but it is believed that enough has been said to show that these spherules in their essential characters are related to the chondres of meteorites, and have the same mode of formation. In conclusion, it may be stated that when the coating of manganese depositions, which surround Sharks' teeth, earbones of Cetaceans, and other nuclei, is broken off and pounded in a mortar to fine dust, and the magnetic particles then extracted by means of a magnet, these latter are found to be composed of silicate spherules, spherules with a metallic centre, and magnetic iron, in all respects similar to those found in the deposits in which the nodules were embedded."

Mr. Murray[1] has pointed out the large part played by volcanic débris and the products arising from its decomposition in the formation of deep-sea deposits, and the microscopic characters of these materials have been described by Messrs. Murray and Renard in more recent papers.[2] Since these volcanic materials were especially abundant in the deep water of the Central Pacific, and as they, owing to the slow accumulation of the deposits, have been long subjected to hydrochemical action, the chief peculiarities of the rocks and minerals brought up by the dredge in this region may be pointed out. At two Stations near the 38th parallel of south latitude, one or two fragments of granite, gneiss, and arkose were obtained, which fact seems to show that a stray iceberg may occasionally reach this low latitude. With the above exception all the rocks and minerals dredged from the Central Pacific were of volcanic origin. Pumice was present in all the dredgings, but the most abundant fragments belonged to the family of the basalts, and the majority of these belonged to the vitreous series of those basic rocks. Rarely some specimens contained hornblende and sanidine. The basaltic, generally vitreous, rocks are represented by fragments rarely exceeding a few centimetres in maximum diameter. From their form, their association with volcanic ash, and their lithological constitution, they cannot be considered as derived from lava flows spread over the sea bottom, but rather as fragmentary materials such as lapilli and volcanic ash, the accumulation of which at some spots on the floor of the Pacific appears to constitute submarine tuffs, which by their mode of origin probably resemble in many respects that attributed by Murchison and Ramsay to certain igneous beds regularly intercalated among the Palæozoic formations of the British Islands.

The fragments are usually incrusted with and infiltrated by peroxide of manganese,

[1] On the Distribution of Volcanic Debris over the Floor of the Ocean, &c., *Proc. Roy. Soc. Edin.*, vol. ix. pp. 247–261, 1877.

[2] On the Nomenclature, Origin, and Distribution of Deep-Sea Deposits, *Ibid.*, vol. xii. pp. 495–529, 1884; On the Microscopical Characters of Volcanic Ashes and Cosmic Dust, and their Distribution in Deep-Sea Deposits, *Ibid.*, pp. 474–495, 1884.