them quite fresh, others partially crusted with peroxide of manganese, and some wholly and thickly surrounded with that substance. We cannot suppose that sharks and whales so abounded in the sea at one time as to cover the floor of the ocean with a continuous stratum of their remains. No doubt each haul of the dredge, which brought up so many bones, represented the droppings of many generations. The successive stages of manganese incrustation point to a long, slow, undisturbed period, when so little sediment accumulated that the bones dropped at the

Fig. 173.—Magnetic Spherules (Cosmic Dust) of the ocean-bottom (Murray and Renard).

a, Black spherule with metallic centre (magnified 60 diameters) from a depth of 2375 fathoms in South Pacific. This represents the common form of these particles, and shows the usual depression on one part of the surface. There is a lustrous crust of magnetite outside.

b, Similar spherule (60 diam.) from which the crust of magnetic oxide has been broken off to show the inner metallic nucleus, here represented by the central lighter part. 8150 fathoms in the Atlantic.

beginning remained at the end still uncovered, or only so slightly covered as to be easily scraped up by the dredge. In these deposits, moreover, occur numerous minute spherular particles of metallic iron and "chondres," or spherical internally radiated particles referred to bronzite, which are in all probability of cosmic origin—portions of the dust of meteorites which in the course of ages have fallen upon the sea-bottom (Figs. 173, 174). Such particles, no doubt, fall all over the ocean; but it is only on those parts of the bottom which, by reason of their distance from any land,