

fully a foot in diameter, and had a thickness of several inches. The inferior surfaces were irregular and earthy, while the upper surfaces were mammillated and covered with little asperities, as is usually the case with the manganese nodules of the deep sea. The colour of the broken surfaces was black with reddish layers, and when polished they in places presented a massive appearance, with a dark lustrous aspect. The fragments were composed of successive, more or less concentric, layers, and were evidently torn away from very much larger masses or nodules by the action of the dredge; a small portion of one of the fragments is figured in Pl. III. fig. 1.

Along with these manganese fragments were numerous branches of a Gorgonoid Coral (*Pleurocorallium johnsoni*). In some instances the axis of the Coral was attached to the manganese nodules; at the upper right-hand side of Pl. III. fig. 1 a portion of the base of this Coral is seen to be attached to the nodule. All the Coral was dead, and in some instances had a much decayed and corroded appearance, as shown in Pl. III. fig. 2. The whole surface of the branches was coated by a thin rind of peroxide of manganese, sometimes about 0·1 mm. in thickness, which cracked off easily on receiving a smart blow. The axis of the Coral was sometimes 2 cm. in diameter, was generally pure white, and took on a high polish; it still retained a considerable quantity of organic matter, and contained 6 per cent. of carbonate of magnesia. In some instances the interior was dull white and largely impregnated with manganese following the minute structure of the branches, thus producing alternate zones of black and white. A portion of one of the smaller branches is represented in Pl. III. fig. 3, to which, at the lower part of the figure, a valve of *Lepas* is seen cemented to the branch of Coral by means of the manganese depositions. A large living siliceous Sponge (*Poliopogon amadou*) was attached to the branches of this dead Coral, along with other living animals. It is not impossible that the Coral may have lived at the depth from which it was dredged, but if the bottom has not sunk the other conditions of the locality appear to have changed since the time when the Coral lived, otherwise it is difficult to account for the fact that all the Coral obtained here, and at two neighbouring stations, was dead. From the large amount of organic matter in the axis of the Coral, it cannot be regarded as fossil, but the carbonate of magnesia indicates that it is, at least, very old.

Station 16, 2435 fathoms.—Three or four manganese nodules, some of them nearly an inch in diameter, were obtained in the dredge. They are round, with a mammillated surface; one of them had a palagonitic nucleus. Fragments of palagonite were also present in the deposit at this station, as well as at Station 12, 2025 fathoms. Along with the nodules there were two or three sharks' teeth and valves of *Scalpellum* thinly coated with manganese.

Station 61, 2850 fathoms.—In the trawl were a piece of pumice, about 4 cm. in length, and several concretionary lumps of tufa, the largest about 7 cm. in length. The fragments of tufa are quite unlike the deposit, and have a slight coating of