

PLATE II.

- Fig. 1. A very characteristic manganese nodule as regards shape and general appearance (natural size). Over thirty nodules more or less like this one were procured at this station. The general form is round, and the mammillæ are not prominent, but run the one into the other without forming marked reliefs. The upper and under surfaces present a sensible difference of aspect. The inferior surface, here figured, we believe to have been plunged into the ooze; it is covered with an immense number of rugosities,—little rounded points 1 or 2 mm. in diameter, and the same in height,—which, being scattered over the whole surface, render the nodule rough to the touch, and somewhat like shagreen. These asperities are not so abundant on the upper surface, which is on the whole much smoother. Station 248; 2900 fathoms. North Pacific.
- Fig. 2. Similar nodule (natural size), in the interior of which were found the remains of a siliceous Sponge (*Farrea*). A portion of the skeleton of the Sponge is represented, more highly magnified, in fig. 2a; the minute canals of the Sponge are seen to be filled with manganese. Some portions of the siliceous skeleton appear to have been removed by solution. The nodule has probably been formed round a fragment of a Sponge. Station 248; 2900 fathoms. North Pacific.
- Fig. 3. Irregular pyramidal-shaped variety of nodule (natural size). The nodule is wedge-shaped, and the entire surface is mammillated. The reliefs are more or less pronounced in two directions, the first being parallel to the lateral edges of the wedge, along radii, the second being more or less parallel to the superior surface of the figure, and following a curved direction. Station 160; 2600 fathoms. Southern Ocean.
- Fig. 3a. Section showing the internal structure of a nodule similar to the preceding (natural size). The alternating zones, from 1 to 2 mm. in diameter, are yellowish white and black-brown. The light coloured bands are traversed by dendritic depositions of manganese, which is in greater abundance in the dark layers. Station 160; 2600 fathoms. Southern Ocean.
- Fig. 3b. Portion of one of these nodules from which the manganese has been removed by concentrated hydrochloric acid. An examination of these clayey skeletons shows that the yellowish white matter extends also into the black bands in the interior of the nodule. Station 160; 2600 fathoms. Southern Ocean.
- Fig. 4. Section of one of the larger nodules from the North Pacific (natural size). The external surface is similar to that of fig. 1. The several white nuclei are found on examination to be highly-altered fragments of pumice, around which layers of manganese have been deposited, the whole being ultimately formed into one nodule. Station 248; 2900 fathoms. North Pacific.
- Fig. 5. One of the larger nodules from the South Pacific (natural size). The interior of these nodules consists of light brown concentric layers arranged round small altered volcanic fragments, or sharks' teeth and their fragments. The outer layers, for a depth of about 5 mm., are of a much darker colour than the inner ones. Station 285; 2375 fathoms. South Pacific.
- Fig. 6. Five instances of small sharks' teeth, and little pellets of pumice, surrounded and cemented together by depositions of the hydrated peroxide of manganese (natural size), showing, as it were, the nodules in process of formation around various nuclei, and their agglomeration into larger nodules. Station 286; 2335 fathoms. South Pacific.
- Fig. 7. Four small nodules (natural size) in a later stage of growth, so to speak, than those represented in fig. 6. The nuclei in both cases are of the same nature. Station 285; 2375 fathoms. South Pacific.