

## PLATE XVII.

- Fig. 1. Section of nucleus of manganese nodule from Station 285 ; 2375 fathoms, South Pacific. This section shows two fragments of grey coloured sideromelan or unaltered basic glass, the one in the centre of the figure, and the other on the left hand side, containing little crystals of olivine. Around these two centres extends a yellowish mass, which contains similar crystals of olivine, and is derived from the alteration of the sideromelan. The preparation shows a phase of decomposition in which the palagonite still preserves a certain homogeneity. Manganese has infiltrated into the characteristic fissures of the rock in the form of dendrites, especially in the upper part of the figure (magnified 145 diameters).
- Fig. 2. Section of nucleus of manganese nodule from Station 293 ; 2025 fathoms, South Pacific. This figure represents a frequent mode of decomposition of vitreous basic rocks ; the vitreous matter has been entirely transformed into reddish palagonite, but it shows, like the preceding figure, a certain homogeneity of structure, no fissures being visible in some parts. Among the mineralogical elements, crystals of plagioclase are to be observed in the form of rhombic tables, completely encased in the palagonite, as seen in the lower part of the figure. In the fractures there are abundant infiltrations of manganese (magnified 145 diameters).
- Fig. 3. Section of nucleus of nodule from Station 160 ; 2600 fathoms, Southern Indian Ocean. This nucleus is formed of a brownish basaltic volcanic glass, surrounded by products of decomposition. The unaltered glass is represented by the greenish grey patch across the middle of the figure ; it is perfectly isotropic, and contains little crystals of plagioclase, olivine, and augite. Similar minerals are found in the yellowish brown altered zones at the upper and lower parts of the figure. These yellowish zones are traversed by undulating lines, along which the substance breaks ; these zones present between crossed nicols spherulithic polarisation, as observed in some zeolites (magnified 37 diameters).
- Fig. 4. Section of nucleus of manganese nodule from Station 302 ; 1450 fathoms, South Pacific. This section represents a fragment of palagonite, with the perlitic structure and fissures usually accompanying the advanced decomposition of this substance ; the parallel lines of the convex and concave zones are highly characteristic, being rendered more distinct by the penetration of peroxide of manganese (magnified 280 diameters).