

earthy matter of a yellowish brown colour, mixed with depositions of the oxides of iron and manganese. Two ice-borne fragments of granite, covered with manganese, are noted as having been obtained at this station, but these have not been preserved in the collections.

PACIFIC OCEAN.

Station 175, 1350 fathoms.—The trawl brought up a branch of a tree and a large number of fragments of pumice. The pumice fragments vary much in size, the largest being 6 to 8 cm. in diameter. They had all undergone considerable alteration, the surfaces being covered with hydroxides of iron and manganese. The fragments effervesced when treated with acid, owing to the presence of Foraminifera shells, the deposit having infiltrated in some cases into the pores, as well as the oxides of iron and manganese. Most of the fragments may be referred to augite-andesite, while others belong to the basic series and have rounded pores. In thin sections under the microscope it can be seen that in the external altered zones the manganese has been introduced following exactly the contours of the scoriaceous rock. It might be said that a replacement of the pumice had taken place, but in a certain sense it is rather an impregnation or moulding. This structure, however, apparently reappears in many of the manganese nodules at other stations, where all trace of the pumice has disappeared, but where, from all appearances, the nodules were originally formed around fragments similar to those above described.

Station 176, 1450 fathoms.—The sounding at this station seemed to indicate that there was a large amount of manganese in the deposit, associated with numerous fragments of pumice. Many of the Foraminifera were covered with minute grains of the peroxide of manganese, while others were filled and coated with a red-brown silicate, containing a considerable quantity of manganese.

Station 181, 2440 fathoms; Station 184, 1400 fathoms.—The trawl brought up from these stations pumice stones similar to those described from Station 175, although the alteration in most cases was not so far advanced.

Station 213, 2050 fathoms.—There came up in the trawl several hardened pieces of mud or clay of a slate colour, in which were embedded pieces of wood. These hardened lumps were made up of the same materials as the deposit procured in the sounding tube, but were traversed by, and in some places coated with, deposits of manganese; apparently the lumps came from a deeper layer than that usually procured in the sounding tube. The trawl may have dragged them up along with the remains of a water-logged tree.

Station 215, 2550 fathoms.—The trawl contained several pumice stones coated with manganese, all of them less than 4 cm. in diameter.

Station 216A, 2000 fathoms.—A large number of pumice stones, varying from the