

the chart as red clay or gray ooze are in all cases entirely, or even chiefly, produced by the more or less complete decomposition of the shells of surface animals with calcareous shells, and the mixture of their ash in varying proportions with the tests of Radiolarians. That they are so to a great extent, I fully believe; but they always contain a certain amount of mineral matter: very usually, perhaps universally, small particles of a substance which has nearly the composition of "wad," and which often occurs, as I have already mentioned, in the form of large concretionary nodules and cakes; and very frequently crystals and groups of crystals of sulphate of lime. Everywhere near land—for example, at Station 25, near St. Thomas, where the depth was 3875 fathoms—the deposit is colored grayish with foreign matter; and everywhere in volcanic regions, and notably over nearly the whole area of the Pacific, the red and gray clays owe a considerable portion of their material to the disintegration of pumice, which appears to be drifted about and distributed by currents until it becomes water-logged, when it falls to the bottom and undergoes slow decomposition.

The serial temperature soundings of this section (Appendix A), taken with extreme care, bear internal evidence of accuracy in the way in which, in almost all cases, the curves or lines representing a number of observations indicate permanence or change in perfect harmony. Thus on Plate V. the isotherm of 11° C., although the combined result of twelve separate observations, is almost straight, while at every station in the section the aggregate of the isothermal lines either spread out consistently, or gather together, as if by a common impulse.

The thermometers have been read with very great care, and the corrections for pressure required for each individual thermometer have been in all cases calculated; but it is difficult to read a thermometer of the ordinary construction to tenths of a Fahrenheit degree, and it is possible that when reduced to a diagrammatic form, as in Plate V. and Figs. 57 and 58, slight