

In this analysis, even better than in those of the Radiolarian Ooze, the large part taken by the remains of siliceous organisms in the composition of the deposit is rendered evident by the quantity of soluble silica. In the portion soluble in hydrochloric acid and treated with potash the soluble silica amounts to 67.92 per cent. Having regard to the low percentage of alumina and peroxide of iron, with which the silica and water lost on ignition might be combined, it must be admitted that amorphous silica exists in a free state, and that the water must be combined with silica, thus forming hydrated silica, analogous to that which, as we have seen, forms the skeletons of Radiolarians. As the quantity of water is variable for hydrated silica, and as the loss on ignition comprehends also organic substances, it would be useless to lay too much stress on the figures, but it may be said that they represent approximately the mean hydration of opals, viz., about 8 per cent. In this case the soluble silica may be said to make up about three-fourths of the deposit. With the exception of 19.29 per cent. of carbonate of calcium, which is chiefly derived from pelagic Foraminifera and shells of Molluscs, &c., the deposit may be regarded as very pure, for all the substances soluble in hydrochloric acid, except the silica, are represented by very small quantities, in comparison with what is met with in other deposits. In the specimen analysed there can have been but little argillaceous matter or ferric hydrate, and in the insoluble portion the anhydrous silicates are represented by only 4.72 per cent. The specimen taken for this analysis may have been exceptionally pure, for it must be remembered that in the large quantity dredged by the Challenger at this station there were many fragments of rocks of considerable size, and associated with these we would expect to find a larger quantity of argillaceous matter than is indicated in the above analysis.

Another analysis of material from the same station is, properly speaking, one of those portions comprised in our Tables under the headings "siliceous organisms" and "fine washings." The substance analysed had been treated with hydrochloric acid to remove the calcareous organisms, and therefore consisted as nearly as possible of siliceous organisms, chiefly Diatoms, but mixed with these were a few Radiolaria and Sponge spicules.

Station.	Depth in Fathoms.	No.	Loss.	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	CuO	MgO	BaO	K ₂ O	Na ₂ O	P ₂ O ₅	Total.
157	1950	32	5.85	90.56	1.31	0.88	0.33	0.30	0.20	0.15	0.40	tr.	99.98

In this analysis, again, the high percentage of silicic acid shows the true nature of the deposit, and considering the percentage of water (loss) and the low percentage of all the bases, it may be concluded that almost all the portion of the deposit here under consideration is composed of a form of hydrated silica derived from Diatom frustules and remains of other siliceous organisms, mixed with a very small quantity of ferruginous clayey matter.