carbonate of lime is due to the presence of the dead shells of pelagic Foraminifera, the other carbonate of lime organisms present not making up more than 3 or 4 per cent. of the whole deposit in any case.

The mineral particles vary greatly in nature, size, and abundance in the Diatom Oozes, sometimes volcanic rocks and minerals, sometimes those of ancient and sedimentary formations predominating. This was to be expected, for all the Challenger samples of this deposit lie within the region of floating ice in the southern hemisphere. The minerals range from 3 per cent. in 1950 fathoms to 25 per cent. in 600 fathoms, the average being 15.6 per cent. The mean diameter is 0.12 mm., but rocks and minerals from the Antarctic Continent and islands are found of all dimensions, and are spread over the whole region from their source in the shallow water near the Ice Barrier to north of the latitude of 40° south, for they were dredged in considerable numbers by the Challenger in all the Diatom ooze areas. These consist of fragments of granite, granitite, chloritic sandstone, micaceous sandstone, amphibolite, gneiss, schists and slates, and other ancient and recent volcanic rocks.

The fine washings range from 12.53 in 1260 fathoms to 27.92 in 1975 fathoms, the average being 20.44 per cent.

The average composition of the five samples of Diatom Ooze is as follows:-

					10 <del>75</del> 1						
Carbonate of Lime,		<b></b>			Pelagic Foraminifers			٠		18.21	
		ne,	•	•	Bottom-living Foraminifera,				•	1.60	
					Other organisms,			•		3.15	
					200						<b>22</b> ·96
Residue, .				Siliceous organisms,		٠			41.00		
	•	•			Minerals,		•		•	15.60	
					Fine Washings, .	•	•			20.44	
					A Market Market						77.04
											100.00
											100.00

The Challenger's trawlings revealed the presence of a large number of deep-sea animals living at the bottom in the Diatom ooze areas; at Station 157, 1950 fathoms, a single haul of the trawl procured over 150 specimens belonging to 77 species and 68 genera.

The following is an analysis of an average sample of the deposit from Station 157, 1950 fathoms:—

				PORTION SOLUBLE IN HCL.										Portion insoluble in HCl.		
Station	Depth in Fathoms.	No.	Loss on Ignition.	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>8</sub>	MnOg	CaCO <sub>3</sub>	CaSO <sub>4</sub>	Ca <sub>3</sub> 2PO <sub>4</sub>	MgCO <sub>3</sub>	Total.	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>8</sub>	
157	1950	31	5:30	67·P2	0.55	0.39		19-29	0.29	0.41	1.18	89.98	4.72			