

The mean percentage of fine washings in the 70 samples of Red Clay is 85·35; the following table shows the relation between depth and percentage of fine washings:—

18 samples from 2000 to 2500 fathoms,	. 80·44 mean per cent. fine washings.
42 " 2500 " 3000 "	. 85·80 " " "
7 " 8000 " 3500 "	. 95·28 " " "
3 " over 3500 "	. 80·28 ¹ " " "

The following table shows the average composition of the Challenger samples of Red Clay. It will be noticed that what we have called fine washings make up by far the larger part of the deposit, and it may be stated that the examination of many samples from other expeditions has yielded very similar results:—

Carbonate of Lime,	.	.	{	Pelagic Foraminifera,	4·77	
				Bottom-living Foraminifera,	0·59	
				Other organisms,	1·84	
					6·70	
Residue,	.	.	{	Siliceous organisms,	2·39	
				Minerals,	5·56	
				Fine Washings,	85·35	
					93·30	
					100·00	

Having thus pointed out the general results arising from a careful macroscopic and microscopic examination and analysis of a large number of Red Clays from many different regions of the ocean, it now remains to inquire how far these are confirmed and supported by chemical analysis. It seems rather unnecessary to dwell upon the difficulties connected with the interpretation of chemical analyses of mixed substances, of altered minerals, and of amorphous matters without any determinate composition like those which make up the greater part of Deep-Sea Deposits; there cannot be a discussion of the analytical data in the same sense as if, for example, we had to do with an analysis of a crystalline rock. But when we take into account the data furnished by macroscopic and microscopic examination, we are able notwithstanding to draw some conclusions from the analyses of these deposits.

The following table is compiled from the analyses made by the late Professor Brazier, as previously stated.² The various deposits were submitted to the action of hydrochloric acid, and the portion dissolved in the acid was analysed separately; the residue of this operation was afterwards treated with solvents, hence we divide the analytical tables into two divisions, the first containing the data relating to the part soluble in hydrochloric acid, the second those referring to the insoluble portion.

separate these matters by decantation; hence arises in part the heterogeneity of these fine washings (see E. W. Hilgard, "On the Flocculation of Particles," &c., *Amer. Journ. Sci.*, ser. iii. vol. xvii. p. 205, 1879; F. Senft, *Die Thonsubstanzen*, p. 41, Berlin, 1879).

¹ See p. 193 about sample from 3875 fathoms.

² Chap. i. p. 28; for details of analyses, see Appendix I.