

they pass insensibly into Blue and Green Muds, in others into Coral Muds and Sands, or with increasing depth into Globigerina, Pteropod, and Diatom Oozes or Red Clays—their chief characteristic being the relative abundance of volcanic materials.

*Volcanic Muds.*—There are 38 examples of Volcanic Muds among the Challenger soundings and dredgings, described in the Tables of Chapter II. In depth these range from 260 to 2800 fathoms, the average depth being 1033 fathoms. Of these—

9	are under	500	fathoms.
13	„ from	500 to 1000	„
7	„ „	1000 „ 1500	„
3	„ „	1500 „ 2000	„
2	„ „	2000 „ 2500	„
4	„ over	2500	„

The colour of these deposits was in the majority of cases brown or grey. In depths between 2000 and 2800 fathoms there was only a trace of carbonate of lime, but in one sample from 260 fathoms there was 56·59 per cent., the average percentage in these Volcanic Muds being 20·49. Arranged in groups of 500 fathoms, the mean percentages of carbonate of lime are as follows:—

In less than	500	fathoms,	.	.	24·69	average per cent. CaCO <sub>3</sub> .
From	500 to 1000	„	.	.	26·04	„ „
„	1000 „ 1500	„	.	.	20·34	„ „
„	1500 „ 2000	„	.	.	31·30	„ „
„	2000 „ 2500	„	.	.	trace.	
Over	2500.	„	.	.	trace.	

The carbonate of lime derived from pelagic Foraminifera is in some cases as high as 35 per cent., the average being 10·50 per cent.; that from bottom-living Foraminifera ranges as high as 10 per cent., the average being 2·82 per cent.; that from the remains of other organisms ranges to 21·59 per cent., and averages 7·17 per cent.

The amount of residue varies from 43·41 to nearly 100 per cent., averaging 79·51 per cent., and is usually brown or black. The siliceous organisms range from 1 to 5 per cent., the average being 1·82 per cent., and consist of Radiolaria, Sponge spicules, Diatoms, and arenaceous Foraminifera. True glauconitic casts or characteristic glauconitic grains have not been observed in typical Volcanic Muds.

The mineral particles make up from 5 to 75 per cent. of the whole deposit, the average being 40·82 per cent. The particles are nearly always angular, and have a mean diameter of 0·11 mm., the range being from 0·06 to 0·20 mm. Quartz is mentioned only once and glauconite twice, but, as above stated, typical glauconite grains may be said to be absent.