

added in successive small quantities, while the substance was stirred continually, care being taken to have but a very feeble acid reaction during the operation. In this way there was obtained, after complete elimination of the carbonates and phosphates, an impalpable residue presenting a deep brown colour, similar to a Red Clay when wet and yellowish brown when dry. The physical characters resemble those of an impure argillaceous substance coloured by iron; before the blow-pipe it melts into a black vesicular glass, like ferruginous felspathic mud. These two residues from the Globigerina Ooze of Stations 224 and 338 were then analysed, with the following results:—

Station.	Depth in Fathoms.	No.	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	MnO ₂	CaO	MgO	K ₂ O	Na ₂ O	H ₂ O	Ba	P ₂ O ₅	Total.
224	1850	57	64.16	15.13	8.19	tr.	1.66	1.79	1.01	0.90	7.10	tr.	tr.	99.94
338	1990	59	50.47	18.01	12.75	3.00	1.71	2.44	1.11	1.05	10.93	tr.	tr.	101.47

These two analyses of residues of Globigerina Ooze show, as might be expected, remembering the variability of the deposits, considerable differences in all the substances estimated. It may be held, however, that these two residues, from the point of view of their constitution, present a very close analogy with the Red Clay of greater depths. In short, according to the percentages of water, alumina, and silicic acid, there must exist in the Globigerina Oozes an argillaceous matter coloured by oxides of iron and manganese, and mixed with this clay alkaline and other silicates, as shown by microscopic examination. The composition of this residue is, in fact, similar to a Red Clay. The materials have the same origin in both cases,—the inorganic portion of a Globigerina Ooze being, indeed, analogous to a Red Clay.

This conclusion receives further confirmation from the following analysis (No. 59A) of the portion of the residue soluble in hydrochloric acid, the results of which show the presence of argillaceous and ferruginous matter in these calcareous deposits. The Globigerina Ooze at Station 338 was submitted to the action of boiling hydrochloric acid and a certain quantity of silica, alumina, iron, and manganese was dissolved. After this operation there remained 2.21 grms. of insoluble residue, and the amount dissolved and re-precipitated by ammonia represented 0.0487 gm. of silica, 0.0404 gm. of alumina, and 0.0917 gm. of peroxide of iron.

SiO ₂	.	.	.	.	.	26.94 per cent.
Al ₂ O ₃	.	.	.	.	.	22.34 „
Fe ₂ O ₃	.	.	.	.	.	50.72 „
						100.00

The atomic relations of the silica and alumina are here those in which these two