144 and 145. Half of Earbone of Balæna.—Station 286.

Lat. 33° 29′ S., long. 133° 22′ W., 2335 fathoms (Dittmar).

One corner of this specimen had a considerable cavity, which was pretty well filled with a brownish black friable substance. This substance was scraped out and constitutes Analysis No. 144. The remainder consisted of a black coating (which was separated as far as possible), and a very white siliceous looking core, which was used for Analysis No. 145.

144. *Contents of Cavity.*

Note.—The analysis of this substance was all but completed when it was found that it contained a small admixture of an "oil," which had no doubt become mixed with it accidentally in the cutting of the original specimen. The greater part of the substance dissolved readily in hydrochloric acid, with evolution of chlorine. Only the solution was analysed.

	P.	
Portion insoluble in hydrochloric acid,[1]	13·66	
Total water,	27·00	
Manganous oxide,	27·13	: MnO = 0·764 ÷ 0·764 = 1
Loose oxygen,	3·13	: O = 0·398 ÷ 0·764 = 0·52
Ferric oxide,	8·34	
Lime,	4·34	
Magnesia,	4·03	
Alumina,	6·54	
Silica,	1·31	
Phosphoric acid,	2·39	
Potash,	1·07	
Soda,	2·39	
Nickel and copper,	traces	
	101·33	

The bulk of the portion soluble in acids apparently consists of hydrated sesquioxides of manganese and iron and decomposible silicates.

[1] Apparently all amorphous silica.

145. *Central Portion of Earbone.*

	P.	$\frac{P.}{E.}$
Insoluble in acid,	0·06	
Moisture,	2·21	
Combined water,	2·22	
Phosphates of iron and alumina,[2]	0·42	
Phosphoric acid,[2]	34·13	1·4420
Carbonic acid,	6·61	0·3042
Fluorine 1·4 ~ $F_2 - O$,	0·81	0·0736
Sulphuric acid,	0·81	
Chlorine,	trace	
Lime,	49·85	1·7801
Magnesia,	0·77	0·0385
Alkalies and loss,	2·11	
	100·00	

Ratio of equivalents of phosphoric acid, carbonic acid, and fluorine—

$(\frac{1}{3}P_2O_5)$		(CO_2)		(F_2)
1	:	0·211	:	0·051

[2] Total phosphoric acid found = 34·33 per cent. 34·13 per cent. of phosphoric acid = 74·5 per cent. of tricalcic phosphate.