II. The Fossil Bone.

No. 13. *Portion of Ziphius Beak from Red Crag, Suffolk.*

A thin plate cut out of the beak, highly polished on one side. The specimen was wholly petrified and homogeneous. It was completely soluble in hydrochloric acid.

A complete analysis gave the following results :—

	P.	$\frac{P.}{E.}$	
Moisture,	1·67		
Combined water (H_2O),	2·31	0·2566	
Phosphoric acid (P_2O_5),	33·83	1·4294	
Carbonic acid (CO_2),	7·50	0·3409	1·8647
Fluorine 1·50 = ($F_2 - O$),	0·87	0·0789	
Sulphuric acid (SO_3),	0·62	0·0155	
Chlorine and silica,	*nil.*		
Lime (CaO),	48·81	1·7431	
Magnesia (MgO),	1·08	0·0540	
Ferric oxide (Fe_2O_3),	2·00	0·0577	
Alumina (Al_2O_3),	0·18	0·0105	
Potash (K_2O),	0·52	0·0111	1·9399
Soda (Na_2O),	1·97	0·0635	
	101·36		

Ratio of equivalents—

$(\frac{1}{3}P_2O_5)$	(CO_2)	(F_2)
1	0·239	0·055

In recent *Ziphius* bone, No. 11, they were—

1 : 0·197 : *nil.*

III. The Deep-Sea Bones.

No. 1. *Portion of a large piece of Whale's Bone.*

Station 286 ; 2335 fathoms, South Pacific.

The specimen was brown in colour, very porous, and readily reducible to a powder.

	P.	$\frac{P.}{E.}$	
Moisture,	3·06		
Combined water (H_2O),	3·66		
Phosphoric acid (P_2O_5),	27·49	1·162	
Carbonic acid (CO_2),	4·14	0·188	1·387
Fluorine 0·71 = ($F_2 - O$),	0·41	0·037	
Lime (CaO),	39·00	1·392	
Magnesia (MgO),	2·01		
Ferrous oxide (FeO),*	1·04		
Ferric oxide (Fe_2O_3),*	4·83		
Binoxide of manganese (MnO_2),*	1·61		
Alumina (Al_2O_3),	2·70		
Silica and substances insoluble in hydrochloric acid,	9·08		
Alkalies and loss,	0·97		
	100·00		

* Direct result of analysis—

Manganous oxide (MnO),	1·31
Ferric oxide (Fe_2O_3),	5·98
Loose oxygen (O),	0·18