

153A. PORTION OF RECENT EARBONE, BALÆNA MYSTICETUS (Dittmar).

	P.	E.	$\frac{P.}{E.}$
Phosphoric acid,	31.66	: 23.67	= 1.3377
Carbonic acid,	4.77	: 22	= 0.2168
Chlorine 0.038 = (Cl ₂ - O),	0.029	: 27.5	= 0.0011
Sulphuric acid,	0.21	: 40	= 0.0053
Fluorine, ¹	0.005	: 19	= 0.0003
Lime,	41.52	: 28	= 1.4828
Magnesia,	0.86	: 20	= 0.0430
Potash,	0.14	: 47	= 0.0030
Soda,	1.46	: 31	= 0.0470
Phosphates of iron and alumina,	0.20		
Moisture,	7.31		
Organic matter,	11.14		
	<u>99.30</u>		

1.5612

1.5758

153B. PORTION OF RECENT MESOROSTRAL BONE OF ZIPHIUS, CAPE OF GOOD HOPE (Dittmar).

Partly decayed; the undecayed portion was analysed.

	P.	$\frac{P.}{E.}$
Phosphoric acid,	34.64	1.4635
Carbonic acid,	6.35	0.2886
Chlorine 0.14 = (Cl ₂ - O),	0.11	0.0039
Sulphuric acid,	0.05	0.0125
Fluorine,	0.032	
Lime,	40.51	1.4467
Magnesia,	3.59	0.1795
Potash,	trace	
Soda,	2.13	0.0687
Phosphates of iron and alumina,	0.36	
Moisture,	3.51	
Organic matter,	7.49	
	<u>98.77</u>	

1.7685

1.6949

From the numbers found for $\frac{P}{E}$ it would appear probable that this bone contains a hydric phosphate such as MgHPO₄, which I remember having seen reported in other bone analyses, but I am more inclined to think that there is an unobserved error somewhere. Taking the deficiency (1.7685 - 1.6949) in bases to mean a loss of magnesia, we have for the percentage of that base 3.59 + 1.47 = 5.06, which would bring up the total percentage to 100.21.

¹ Having found by preliminary experiments that the deep-sea specimens contained appreciable quantities of fluorine, I devoted particular attention to the exact determination of this element. The method adopted was as follows:—A sufficient quantity of ignited material (5 to 20 grms.) was heated with a large excess of pure quartz sand and pure oil of vitriol (previously charged with sulphate of silver to retain the bulk of the chlorine), and the fluoride of silicon formed, after having been filtered through dry asbestos to retain any sulphuric acid that might have come over, passed into water and determined titrimetrically by means of pure standard caustic soda. In the resulting mixture, the chlorine, if present, was determined and allowed for.