From the numbers found for $\frac{P.}{E.}$ it would appear probable that this bone contains a hydric phosphate such as $MgHPO_4$, 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.

No. 12. *Brain Case of Globiocephalus, European Seas.*

	P.	$\frac{P.}{E.}$	
Phosphoric acid (P_2O_5),	22·45	0·9485	1·1008
Carbonic acid (CO_2),	3·18	0·1446	
Chlorine 0·085 = (Cl_2 − O) or muriatic acid,	0·066	0·0024	
Sulphuric acid (SO_3),	0·21	0·0053	
Fluorine (F_2),	0·004		
Lime (CaO),	30·04	1·0727	1·1440
Magnesia (MgO),	0·38	0·0190	
Potash (K_2O),	trace		
Soda (Na_2O),	1·62	0·0523	
Phosphates of iron and alumina,	1·25		
Moisture,	8·93		
Organic matter,	31·79		
	99·92		

The fluorine was determined in 8 grms. of the ash of the substance, and found to amount to 0·57 mgrms., that is to 0·007 per cent. of the ash, or 0·004 per cent. of the original substance.

From these analyses it would appear that the percentage of fluorine in recent marine bones is very minute.

For the sake of comparison, I determined the fluorine in a sample of ordinary bone ash, and found it 0·004 per cent., *i.e.*, almost *nil.*

As it is stated that teeth contain more fluorine than ordinary bones, I procured a quantity of horses' teeth, ignited them, and determined the fluorine in the ash. It was found equal to 0·084 per cent., which, though decidedly higher than the number obtained with the bones, is still very minute.

I have no doubt that the 1 or 2 per cent. of fluoride of calcium, which we find reported in the older analyses of bones, is based on utterly erroneous determinations. This, however, only confirms what Nicklès gave some years ago as the result of an extensive investigation on the subject.

For the number of equivalents of carbonate present per equivalent of phosphate, we have in—

	No. 8.	No. 11.	No. 12.
	0·162	0·197	0·153
or,	$\frac{1}{6·2}$	$\frac{1}{5·1}$	$\frac{1}{6·6}$