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Analysis of human bones

Berzelius & Marchand

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With the intention of ascertaining the condensation of the elements of the equivalent of paraffin, M. Lewy attempted to determine its density in the state of vapour; this operation requires many precautions, for paraffin undergoes incipient decomposition at a temperature but little higher than that of its boiling point; it is difficult not to obtain some carburetted hydrogen gas, of which the eudiometric analysis must be performed in order to calculate with greater exactness the density according to the data of the experiment; when however the operation is carefully conducted, the paraffin remains white in the receiver, and analysis indicates no alteration in it. The results of three determinations did not sufficiently agree to admit of proving the equivalent of paraffin with certainty. The numbers oscillated between 10 and 11·8. All that can be stated with certainty is, that the molecule of paraffin contains at least 40 equivalents of carbon.

Taking the composition as C^{40} H^{24}, calculation will give the following numbers :—

40 vol. of vapour of carbon = 33·728
84 vol. of hydrogen = 5·779

$$\frac{39\cdot507}{4} = 9\cdot879.$$

Assuming the formula C^{48} H^{100}, we shall have

40 vol. of vapour of carbon = 40·32
100 vol. of hydrogen = 6·88

$$\frac{42\cdot20}{4} = 11\cdot8$$

This formula gives

C^{48}	3600	..... 85·20
H^{100}	625	..... 14·78
	4225	99·98

numbers which agree equally well with the experiments.

M. Lewy remarks, that it is evident that the formula for paraffin requires to be verified by means less subject to error; he states also that he has made several attempts to obtain products derived from paraffin by the influence of several chemical agents; chlorine has a marked action, and yields under favourable circumstances a crystalline body which contains much chlorine.

An examination of the products derived from paraffin, as well as researches on wax and its relation to paraffin, will undoubtedly furnish new data for establishing the equivalent of paraffin.—*Ann. de Chemie*, Juillet 1842.

ANALYSIS OF HUMAN BONES. BY BERZELIUS AND BY MARCHAND.

The analysis of Berzelius has not we believe been very recently performed, but that of Marchand has; we give them both that they may be compared.

Berzelius.—Cartilage completely soluble in water .... 32·17
Vessels ..... 1·13

Basic phosphate of lime, with a little fluoride of calcium	53·04
Carbonate of lime	11·30
Phosphate of magnesia	1·16
Soda, with a very small quantity of chloride of sodium	1·20
	100·
Marchand.—Cartilage insoluble in hydrochloric acid	27·23
Cartilage soluble in hydrochloric acid	5·02
Vessels	1·01
Basic phosphate of lime	52·26
Fluoride of calcium	1·00
Carbonate of lime	10·21
Phosphate of magnesia	1·05
Soda	0·92
Chloride of sodium	0·25
Oxides of iron and manganese, and loss	1·05
	100·

Journal de Pharmacie, Decembre 1842.

COMPOUNDS OF PHOSPHORIC ACID WITH OXIDE OF LEAD. BY M. WINCKLER.

According to the researches of Prof. Graham, phosphoric acid forms, under certain circumstances, three different hydrates; common phosphoric acid ($P^2 O^5 3 H^2 O$), pyrophosphoric ($P^2 O^5 2 H^2 O$) and metaphosphoric acid ($P^2 O^5 H^2 O$), the atoms of water of which may be replaced by a corresponding number of atoms of different basic oxides. It is indicated in the German translation of Graham's Chemistry by M. Otto, in what manner the formation of the salt of silver, whether uni- bi- or tribasic, is effected by employing the corresponding salts of soda and nitrate of silver. It is also stated at the same time, that nitrate of lead yields, in an analogous manner, corresponding salts of phosphate of lead. M. Winckler has verified the accuracy of this latter assertion. He obtained with the metaphosphate, pyrophosphate and phosphate of soda, the following series of compounds: $Pb O P^2 O^5$ (metaphosphate of lead), $2 Pb O P^2 O^5$ (pyrophosphate of lead), $3 Pb O P^2 O^5$ (phosphate of lead).—*Journal de Pharmacie,* Novembre 1842.

NEW METHOD OF PRECIPITATING METALS IN THE STATE OF SULPHURET. BY M. C. HIMLY.

This method consists in replacing, in the first operation, sulphuretted hydrogen, the use of which is not free from inconvenience, by the alkaline hyposulphites. Hyposulphurous acid may, in fact, be considered as formed of sulphurous acid and sulphur; it readily decomposes into these two substances, when separated from its salts by more powerful acids; a mixture is then formed, in which the sulphurous acid, on account of its great tendency to pass to a higher degree of oxidizement, at the expense of the oxygen of other substances, is capable of replacing the hydrogen of the sulphuretted hy-