



Examination of a fossil resin found near Eu (seineinferieure)

M.M. Lassaigue & Chevallier

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ON THE BIBASIC ARSENIATE OF AMMONIA AND MAGNESIA.

BY M. LEVOL.

The author observes, that, notwithstanding the striking analogies presented by arsenical and phosphoric compounds, it does not appear to have been ascertained whether an arsenical compound exists, corresponding to the most important of the ammoniaco-magnesian double phosphates, or that which occurs among certain products of animal organization, and which is so frequently employed in chemical analyses, on account of its insolubility, to determine the quantity of phosphoric acid.

The author thought it would be interesting to determine if it were possible to produce an arseniate analogous to this phosphate, and to apply it, on account of its insolubility, to ascertain the quantity of arsenic acid; and he found, in fact, that such a salt exists, and that it resembles in every respect the bibasic phosphate of the same bases, and its formula is similar to that which Berzelius assigns to the phosphate 2NH^3 , 2MgO , $\text{AsO}^5 + 10\text{HO}$.

This salt is obtained like the corresponding phosphate, that is to say by pouring a soluble double ammoniaco-magnesian salt into a solution of arsenic acid, after having rendered it ammoniacal; like the phosphate, it does not immediately appear, but only after the lapse of a few seconds, unless it be agitated; it deposits in the same way in the form of very small crystals on the sides of the vessel; its insolubility may also be compared to that of the phosphate: one part of arsenic acid, diluted with 56818 parts of ammoniated water, was rendered sensible soon after the addition of a few drops of a concentrated solution of ammoniaco-magnesian sulphate; and the author is of opinion that it would be difficult to mention two salts more exactly comparable each to the other, than the phosphate and arseniate under consideration.

The new salt was applied in a very difficult case of chemical analysis, that of the quantitative separation of arsenious and arsenic acids, the former not yielding a double insoluble salt with ammonia and magnesia. When the precipitate is collected, it is to be dried and calcined to redness, taking care that it is not exposed to any reducing influence; there remains 2MgO , $\text{AsO}^5 = 55.74$ of 100 of the new salt, which represent 41.02 of arsenic acid. The author suggests that the ammoniaco-magnesian double salts might be employed as remedies in cases of poisoning by arsenic acid.—*Ann. de Ch. et de Phys.*, Août 1846.

EXAMINATION OF A FOSSIL RESIN FOUND NEAR EU (SEINE-INFÉRIEURE). BY MM. LASSAIGNE AND CHEVALLIER.

This substance may be mistaken for amber, which it resembles in its yellowish colour, transparency, fusibility and combustibility. One specimen of a pale yellow colour, was of sp. gr. 1.094; the other, which was reddish-yellow, had a sp. gr. of 1.

The first of these specimens was reduced to fine powder, and ma-

cerated during twelve hours in sulphuric æther, the action of which was assisted by repeatedly shaking the vessel, and eventually heating it to about 90° Fahr.

After this reaction the æther was filtered and had acquired a slight golden-yellow colour; it was introduced into a retort with a small quantity of water, and distilled with a gentle heat. After the distillation of the æther there remained a fluid resin of an amber-yellow colour, possessing the consistence and viscosity of common turpentine, and part of it solidified on cooling. The water in which this resin floated was poured off, it was colourless and reddened litmus paper strongly; it was slowly evaporated at the usual temperature, by placing under a glass with a vessel containing concentrated sulphuric acid. The product of this evaporation was an inodorous colourless mass, crystallized in small laminæ, possessing first a bitter and afterwards an acrid taste.

This crystallized residue reddened litmus paper strongly, its aqueous solution yielded no precipitate with barytes water, but gave a white flocculent precipitate with acetate of lead, readily soluble in excess of the acetate. A small quantity of this acid, saturated with ammonia, yielded a crystallizable salt, the solution of which precipitated persulphate of iron in yellowish-coloured flocculi. Lastly, a portion of the same acid, heated in a small tube, first fused, afterwards partially decomposed and sublimed in needles at a little distance from the heated portion of the tube.

The portion of the resin dissolved by the æther, again submitted to distillation with a little water, yielded traces of volatile oil, which were deposited on the surface of the water contained in the receiver in the state of a light pellicle. This resin, after cooling, had the form of a yellow transparent mass, which was so friable that it was pulverizable by slight pressure between the fingers. Digested in cold alcohol a part only of it was dissolved, and there remained a whitish insoluble resinous matter.

The residue upon which the æther had first acted, was treated first with cold and afterwards with hot alcohol, and it remained insoluble. This property resembles that of some fossil resins, and among others the insoluble resin stated by M. Berzelius to exist in amber, and which he has described as the bitumen of amber.

On recapitulating the facts arising during this examination, it will be observed that this fossil resin found in the vicinity of Eu, resembles amber in physical characters, in density, and in the different organic principles which have been separated from it.

MM. Lassaigue and Chevallier obtained the following substances, and in the annexed proportions, from 100 parts of the fossil resin :—

Resin insoluble in æther and alcohol	83·3
Resin soluble in æther and alcohol	14·2
Resin soluble in æther and insoluble in alcohol ..	2·0
Succinic acid	0·5
Traces of volatile oil.	

100·0

Journ. de Chim. Méd., Juillet 1846.