



Analysis of the silicate of manganese from algiers

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formed by the mixture of solutions of proto-chloride of tin and of iodide of potassium. A more detailed account of the properties of the iodides of tin is reserved for a future communication.

Supplement to a Paper "On the Nervous Ganglia of the Uterus." By Robert Lee, M.D., F.R.S., Fellow of the Royal College of Physicians.

The author is confirmed in his views regarding the arrangement of the nervous filaments distributed to the uterus, as described in his papers printed in the Philosophical Transactions for 1841 and 1842, by his recent dissection of a gravid uterus at the full period, and which he considers as demonstrative of the accuracy of all the statements which are contained in those communications.

LXIII. *Intelligence and Miscellaneous Articles.*

ON THE RED COLOUR OF LITHARGE. BY M. LEBLANC.

THE author remarks, that M. Fournet is of opinion that red litharge contains more oxygen than yellow litharge, and that it owes its colour to a certain proportion of minium; and several specimens yielded him unquestionable traces of it. M. Thenard and most other chemists attribute the colour of litharge to the same cause.

The author, without denying that litharge slowly cooled may in certain circumstances absorb oxygen and give rise to minium, and which is stated to be a fact, is of opinion that another cause must be assigned for the production of red litharge; and his grounds for this opinion are the following:—1st, the red litharge which he examined yielded no oxygen by heat; 2nd, the same litharge, carefully examined by means of pure nitric acid, gave no binocide of lead, whereas a trace of minium, added to yellow litharge, without even modifying its tint, was discoverable by this test; 3rd, red litharge, heated to a temperature at which it disengaged no oxygen, and quickly thrown into water, became yellow. Experience shows that these variations of structure and colour in litharge, dependent upon the temperature at which it is produced, are not occasioned by changes of chemical composition, but by isomeric or dimorphous modifications; the differences are also connected with the different densities of the specimens.

The author concludes from his experiments, that oxygen may be dissolved by litharge in fusion, as it dissolves in silver, without forming a superoxidized compound; he is further of opinion that the differences between specimens of litharge are those of structure, colour, and density, without any variation in chemical composition; and these differences are produceable at pleasure in the dry way, according to the circumstances of temperature and rapidity of cooling.—*Journ. de Pharm. et de Ch.*, Septembre 1845.

ANALYSIS OF THE SILICATE OF MANGANESE FROM ALGIERS.

BY M. EBELMEN.

This mineral is found in veins in the primary formation of the en-
Phil. Mag. S. 3. Vol. 27. No. 181. Nov. 1845. 2 D

virons of Algiers, and it accompanies an ore of manganese which is now worked. It consists of two distinct portions, one lamellated in three directions and of a rose colour; the other, on the surface exposed to the air, is black and earthy, and about one-third of an inch thick; it is, however, easy to ascertain the junction of these two substances; it is very evident that the black portion is the rose-coloured mineral altered.

Red Mineral.—The density of this is 3·559; it scratches glass; its texture is sometimes laminated and sometimes granular; it fuses before the blowpipe, but not very readily; it does not effervesce with acid; boiling hydrochloric acid acts slowly and with difficulty upon it, and deposits silica; the solution was found to contain protoxide of iron and of manganese, with lime and magnesia.

In order to analyse this substance, a portion of it was fused with carbonate of soda; the fused mass was treated with hydrochloric acid, and the silica separated by the usual process; this was entirely dissolved, after being weighed, in solution of potash; the iron and manganese were precipitated together from the solution by means of hydrosulphate of ammonia; the sulphurets were dissolved in concentrated hydrochloric acid, to which was added a small quantity of nitric acid to peroxidize the iron; the peroxide of iron was then separated from the oxide of manganese by succinate of ammonia.

The liquor from which the iron and manganese were separated was saturated with an acid, boiled and filtered to separate the sulphur, then saturated with ammonia, and precipitated successively by oxalate and phosphate of ammonia; the lime was estimated in the state of sulphate. The results of the analyses were as follows:—

Silica.	45·49
Protoxide of manganese.	39·46
Protoxide of iron	6·42
Lime	4·66
Magnesia	2·60
	<hr/> 98·63

This rose-coloured substance is therefore bisilicate of manganese (rhodonite of Beudant), as indicated by its external characters. A very considerable portion of protoxide of manganese is replaced by isomorphous bases; the formula of this mineral is $(\text{Mn} . \text{Fe} . \text{Ca} \text{ Mg} .) \text{S}^2$.

Black Substance on the Surface of the Silicate.—This substance is friable; heated in a tube it yields water. Hydrochloric acid attacks it readily, with disengagement of chlorine, and leaves a rose-red residue.

To analyse this substance, it was acted upon by hydrochloric acid, and the chlorine evolved was received in a very clear solution of sulphurous acid mixed with chloride of barium; the boiling was discontinued soonafter the decoloration of the substance, and the complete expulsion of the chlorine from the receiver, in order that the red matter should be as little acted upon as possible. The solution of sulphurous acid boiled and filtered yielded sulphate of barytes,

the weight of which served to calculate the oxygen contained in the mineral above the protoxide.

The liquor derived from treating the black mineral with hydrochloric acid was filtered, then evaporated to dryness to separate some flocculi of silica, and again filtered; the manganese, iron and lime were separated by the means already described; no magnesia was found.

The residue unattacked by the hydrochloric acid was calcined and weighed, the gelatinous silica was then separated by liquid potash; the portion insoluble in the alkali consisted of small rose-coloured grains, which, examined by the glass, appeared to be perfectly similar to the bisilicate from the centre of the specimen. In fact, by acting upon this matter by carbonate of soda in the platina crucible, there was separated by acid 0·48 of its weight of gelatinous silica, a quantity very near that obtained by the analyses of the bisilicate.

To estimate the water of the black mineral, a portion of it was heated in hydrogen, by employing a platina crucible with a tubulated cover; a greenish substance was obtained which was acted upon by hydrochloric acid without evolving any chlorine. The loss of weight of the mineral heated in the hydrogen consisted of,—1st, the water; 2nd, the oxygen above that which corresponded to protoxide, which was known by the weight of the sulphate of barytes, so that the difference of the loss in the current of hydrogen would give the water.

The results of the analyses were—

Water.....	10·14
Oxygen	8·94
Protoxide of manganese.....	43·00
Peroxide of iron.....	6·60
Lime	1·32
Insoluble residue { Gelatinous silica.....	2·40
{ Bisilicate unacted upon	27·20
	<hr/> 99·60

When it is considered that the rose-coloured silicate is acted upon by boiling in hydrochloric acid, it will be admitted as probable, that the small portion of gelatinous silica occurring in the analyses is derived from a portion of the bisilicate. Admitting this supposition, and subtracting from the quantity of protoxide of manganese found that which corresponds to the gelatinous silica, and which is 2·10, the remainder, 40·90, contains a quantity of oxygen equal to that occurring in the sulphurous acid. It may also be concluded that the black substance is a mixture of hydrates of peroxide of manganese and iron, with a certain proportion of unaltered bisilicate.

If also this composition be compared with that of the rose-coloured matter, it will be seen,—1st, that the silica and the magnesia have completely disappeared during decomposition, as well as the greater part of the lime; 2nd, that the protoxides of iron and of manganese are converted into hydrates of peroxides, and occur in the black substance in the same relation as in the unaltered mineral.

—*Ann. des Mines*, tome vii.