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On Cubebin

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Potash precipitates a perfectly black heavy powder from the red solution of the protosalt, which is rendered colourless at the same time. This black powder is obtained also by the direct decomposition of the dry salt by means of a solution of potash; this precipitate remains black after drying; by pressure it becomes of a deep metallic lustre, and by heat is reduced to metallic silver, evolving oxygen. The black colour seems to indicate that it is pure protoxide of silver; but this supposition does not always depend on the colour, for this powder might also be, consistently with its properties, an intimate mixture of deutoxide of silver and metallic silver, to which the protoxide may have given rise at the moment of its separation. It is also decomposed by the acids into metal and deutosalts, and ammonia exerts a similar action. Hydrochloric acid converts it into a brown substance, which is a chloride corresponding with the protoxide or perhaps merely a mixture of silver and common chloride of silver; this substance is also obtained in the state of a brown, curdy precipitate, which speedily subsides, by precipitating the red solution of protonitrate of silver by hydrochloric acid; it acquires the metallic lustre by pressure. When heated to the temperature at which chloride of silver fuses, it becomes merely a yellow mass, and is a mixture of silver with the common chloride. When treated with ammonia, or even with concentrated solution of the hydrochlorate, the brown chloride is decomposed immediately into chloride which is dissolved, and into metallic silver which remains.

Oxalate of silver when exposed at 212° to the action of hydrogen gas, becomes of a bright yellow tint; but the decomposition seems to remain only partial at this temperature. It became brown at 284° ; but it soon afterwards produced a very loud explosion. Succinate of silver becomes lemon-yellow at 212° in hydrogen gas. At a higher temperature, half of the succinic acid sublimed. The protosuccinate of silver thus formed is insoluble in water. Pure deutoxide of silver is reduced to the metallic state precisely at 212° in hydrogen gas.—*Journal de Pharm. Juillet 1839.*

ON CUBEBIN. BY MM. CAPETAINE AND SOUBEIRAN.

We have discovered on cubebs a peculiar matter, to which we give the name of *Cubebin*. Although M. Monheim has already applied this word to a product which he obtained in his experiments on cubebs, it is certain that he did not procure the true cubebin, as may be seen by the properties which he assigns to it. The cubebin of M. Monheim is greenish, has an acrid taste, melts at 68° , boils at 86° , and then is partly volatilized, whereas the true cubebin is white, insipid, inodorous, and decomposes before it fuses.

The process which we found to succeed best in obtaining cubebin, consists in pressing the marc which remains after the preparation of the volatile oil of cubebs to make an alcoholic extract of it, and to treat this extract with a solution of potash, as proposed by Poulet for the preparation of pipesin. The cubebin is to be washed with a little water, and to be purified by crystallization repeatedly from alcohol.

Cubebin is white, insipid, inodorous. It occurs in groups of small acicular crystals. At 392° *in vacuo*, it loses no weight. It is not volatile, and is scarcely soluble in water; cold alcohol dissolves but a small quantity of it; at 53° , 100 parts of absolute alcohol dissolved but 1.31 part; alcohol of 82° dissolved 0.70, but when boiling both dissolved so much that on cooling the liquor became a mass. At 53° , 100 parts of æther dissolve 3.73 of cubebin; it is more soluble in it when hot; it is also soluble in acetic acid, in the volatile and fixed oils.

Concentrated sulphuric acid renders it of a deep red colour. This substance was analysed by means of oxide of copper, it being previously dried in a dry vacuum at 322° ; it was found to consist of

Hydrogen	5.56
Carbon	68.29
Oxygen	26.25—100.

which are equivalent to nearly

Eight equivalents of hydrogen	8	or	5.33
Seventeen „ carbon..	102		6.8
Five „ oxygen..	40		26.67
	150		100.

Cubebin is neutral, and does not appear susceptible of forming any compound from which its true atomic constitution can be inferred. In this respect it is a substance of little interest; but the following two consequences result from its composition: first, that it differs essentially from the crystalline matter of black pepper in several respects, and especially in its composition, since it contains no azote; that it is not derived from the volatile oil of cubebs, this, according to our experiments, containing hydrogen and carbon in the atomic relation of 5 to 8, as the oil of turpentine does.—*Journal de Pharm.*, Juillet 1839.

ANHYDROUS PHOSPHORIC ACID. BY M. MARCHAND,

A small porcelain capsule is to be placed on a stand, in a large porcelain vessel; some pieces of dry phosphorus are to be put into the small capsule, and a tubulated glass receiver is to be placed over it; a cork containing two glass tubes is to be inserted into the tubature; of those tubes, one is large and almost reaches the small capsule, and it is to be fitted with a cork; the other tube is narrow, and is to be bent at an angle externally. The narrow tube is to be connected with an apparatus, from which dry oxygen gas is disengaged; a retort in which chlorate of potash is heated is to be preferred. It is more convenient to convey a current of gas from a gasometer, and to dry it perfectly by chloride of calcium and sulphuric acid in the potash apparatus of Liebig. At first oxygen is to be passed through the receiver to expel the atmospheric air from it; the phosphorus is then to be inflamed with hot iron rod passed through the larger straight glass tube. When all the phosphorus is burnt, more is passed through this tube into the small capsule. The retort may also be readily changed when all the chlorate of