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On the rotary motion of camphor

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platinate of lime; but according to my process for obtaining it, it is a compound of chloride of platina and platinate of lime ($\text{Pt Ch}^2 + \text{Ca Pt}^3$).

If this compound be heated in a platina crucible to bright redness, it loses about 25 per cent., being water and a part of the oxygen combined with the platina. It becomes a deep violet-coloured powder, which becomes very hot when sprinkled with water, and when treated with dilute nitric acid, &c, is decomposed into muriate of lime, lime, and oxide of platina, of a deep violet colour.

This oxide is, I believe, the protoxide of platina (Pt), the base of the coppery oxalate already mentioned. This oxide does not dissolve in any oxyacid, but it combines by long digestion with oxalic acid. When treated with formic acid it is reduced to spongy platina, and evolves carbonic acid tumultuously, and in such quantity that its volume shows the quantity of oxygen contained in the protoxide. Eight grains of this oxide dried at 212° , being reduced by formic acid, gradually heated to ebullition, gave such a quantity of carbonic acid as showed its composition to be 92.204 metal, and 7.796 oxygen: according to Berzelius, the protoxide of platina contains 7.6 per cent. of oxygen. This difference probably arises from the circumstance of the oxide which I examined, and that once only, containing a small quantity of peroxide, or that the protoxide of Berzelius contained, as asserted by Liebig, some chlorine.—*Ann. de Chim. et de Phys.*, tom. liii. p. 204.

ON THE ROTARY MOTION OF CAMPHOR. BY M. CHARLES MATTEUCCI.

The phænomena exhibited by camphor, when put upon water, have been long known, and several philosophers have examined them; but if they are generally agreed as to the circumstances of these curious phænomena, this is not the case as to their cause. Thus, it has been said they were owing to the development of electricity, or to the solution of camphor, and lastly, to the evaporation of the camphor and water. It is easy to prove that it is not owing to the solution of the camphor in the water, for there are several substances which are much more soluble, but which do not turn when placed on water. Nothing indicates the development of electricity, and in this case it is not conceivable how it could produce the effect. The evaporation of water ought not to be considered in the explanation of the phænomena. It is therefore entirely to the evaporation of the camphor and its solution in the strata of water which surround it, that the cause of the motion must be attributed; and it is this opinion which I propose to develop and maintain.

Potassium is a substance which, when thrown on water, resembles camphor in the phænomena it produces: in this case it is to the disengagement of hydrogen and the vapour of water that the rapid movement must be attributed. It is even possible to imitate this rotation in a more simple manner; for this, it is sufficient to throw a small piece of red-hot charcoal upon water, or a very fine metallic

wire, suspended and previously heated. The motion, in this case, is produced simply by the vapour of water disengaged around the floating body. It is this hypothesis which very readily explains the suspension of rotation when a drop of oil is thrown on the surface of the water, or when it is covered with a plate of glass.

The following are the most convincing facts in favour of this explanation of the motion of camphor. I took rather a large piece of it, in order that when put upon water its motion might be very slow. I afterwards put the glass in which the experiment was made under the receiver of the air-pump and exhausted it. I then observed that the movements of the camphor, which were at first scarcely perceptible, become more rapid, and that they ceased when the action of the pump was stopped. On allowing the air to enter, the rotation occurred for some seconds, which was undoubtedly occasioned by the agitation produced by the reentering air. Lastly, and it is the most unexceptionable proof, I have observed these phenomena of rotation on water in all volatile bodies. I took raspings of cork and impregnated them with sulphuric æther: when placed upon water these small light bodies turned very rapidly. If it be wished to cause this rotation to continue for a long time, it is sufficient to immerse a wire in æther, and to make the other end touch the surface of the water; the æther descends as by a syphon, and the motion is continued.

It is, then, I think, proved that the rotation of volatile bodies is owing to the currents of their vapours. I will add a word respecting the well-known phenomenon produced by a stick of camphor immersed in water: I mean that of its being cut precisely according to the line which touches the exterior surface of the liquid. It is easy to prove, that of all the strata of water which are in contact with the camphor, it is in the upper that the solution is greatest. In fact, camphor dissolves in small quantity in water, but it is only at the surface that the dissolved camphor can evaporate: this water then dissolves a fresh portion, and so on repeatedly. When this solution is prevented, the phenomenon ceases to be produced. If a stick of camphor be placed in a concentrated solution of potash, and another in water, the latter is cut in two in three or four days, and the other is not at all attacked.—*Ann. de Chim. et de Phys.*, tom. liii, p. 216.

ON MARGARON, STEARON, AND OLEON.

M. Bussy prepared margaric acid by distilling suet, and purifying the product by pressure and crystallization in alcohol: it melted at 131° Fahrenheit. This acid was preferred to that obtained by saponification, because the margaric acid contained no stearic acid, and because it is more easily purified from the fluid products with which it is mixed.

A quantity of this acid was mixed with a quarter of its weight of lime, and distilled in a retort. First a quantity of water came over, and then a soft mass, from which there is obtained, by pressure, a matter similar to that which the suet furnishes. The last portions

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