On the influence of temperature on the production of iodoform

M. Bouchardat

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oxygen to sulphurous acid; but the peracetate of iron becomes protoacetate by its action.

9th. Molybdic acid is not reduced by sulphurous acid, but molybdate of potash is reduced to a low state of oxidizement, to the blue compound or molybdous acid.—*Journal de Pharmacie et de Chimie*, Sept. 1843.

EXTRACTION OF PALLADIUM IN BRAZIL.

The extraction of palladium from the auriferous sand of Brazil consists in fusing it with silver, and consequently forming a quaternary alloy of gold, palladium, silver and copper, which is granulated by projecting it into water.

By treating this alloy with nitric acid the gold is separated from the other metals which are soluble in the acid; the silver is precipitated by a solution of common salt in the state of insoluble chloride, which being separated, the copper and palladium are precipitated by plates of zinc. The pulverulent deposit of these metals is redissolved in nitric acid and the solution precipitated by excess of ammonia, which redissolves the oxide of copper and of palladium; when the ammoniacal solution of these metals is saturated with hydrochloric acid, a double chloride of palladium and ammonia is deposited in the state of a crystalline yellow powder, and this when calcined in a crucible is readily decomposed, and leaves spongy palladium — *Journal de Chimie Médicale*, October 1843.*

ON THE INFLUENCE OF TEMPERATURE ON THE PRODUCTION OF IODOFORM. BY M. BOUCHARDAT.

Many instances of the influence of temperature in chemical reactions are known, to which M. Bouchardat has added that which it exerts in the production of iodoform.

If to water containing iodide of potassium and a little alcohol, iodine and potassium be alternately added in sufficient quantity to decolorize and colour the liquor, it becomes hot, and there are successively produced acetic æther, and iodoform without any trace of iodate of potash.

But if instead of this the iodine be dissolved in the water and alcohol holding iodide of potassium in solution, and to these there be added an aqueous solution of potash, but not in sufficient quantity to decolorize the liquors, and then fresh iodine be added and successively potash in sufficient quantity to decolorize, then no trace of iodoform is produced. The oxygen which the iodine displaces from the potash acts upon the alcohol to convert it into acetic æther, which may be easily separated; but the action goes no further; as soon as the alcohol is converted into acetic æther, the oxygen displaced acts upon the iodine to produce iodate of potash which is deposited.

Thus with excess of iodine at common temperatures, there is no

* See p. 16 of the present volume.

production of iodoform by the mutual reaction of iodine upon alcohol, under the influence of potash; acetic æther only is formed.

If, on the other hand, to an aqueous solution of carbonate of potash there be added alcohol, iodide of potassium, and iodine in excess (the alcohol not being sufficient to separate the saline solution), and the mixture be exposed to a temperature of 140° Fahr., there is an abundant production of iodoform in a few hours, iodine in excess always remaining.

M. Bouchardat observes, that it was long before he could account for the difference of action under circumstances which appeared so similar, for while with caustic potash acetic æther only was obtained, whereas with the carbonate the product was iodoform; it afterwards appeared that as it was requisite to employ a temperature of 140° with the carbonate of potash, whilst with the caustic potash it was only about 60° to 68° Fahr., this difference might account for the different effects produced. To determine this a solution of iodine and iodide of potassium in water and alcohol was heated to 140° Fahr., and a solution of caustic potash was then added, in which the formation of iodoform immediately took place; it is therefore evident that the different reactions were occasioned by variations of temperature. —*Journal de Pharmacie et de Chimie*, Juillet, 1843.

METEOROLOGICAL OBSERVATIONS FOR SEPT. 1843.

Chiswick.—Sept. 1. Foggy: sultry. 2, 3. Slight haze: sultry. 4. Clear and fine. 5. Heavy dew: clear. 6. Cloudless. 7. Slight haze: cloudless and hot. 8, 9. Very fine. 10. Foggy: heavy thunder-showers. 11. Very fine. 12. Overcast. 13. Clear and fine. 14. Overcast. 15—20. Exceedingly fine. 21. Foggy: very fine. 22, 23. Clear and fine. 24, 25. Overcast. 26. Fine: clear and cool. 27. Cloudy and cool: clear, with slight frost at night. 28. Very clear: overcast. 29. Cold and dry: overcast. 30. Rain.—Mean temperature of the month 3°·81 above the average.

Boston.—Sept. 1—6. Fine. 7. Fine: quarter-past 2 P.M. heat 77°. 8. Foggy. 9. Cloudy. 10. Fine: rain P.M. 11, 12. Cloudy. 13—15. Fine. 16. Cloudy. 17—19. Fine. 20. Cloudy: rain early A.M. 21, 22. Fine. 23, 24. Foggy. 25. Cloudy: rain A.M. 26. Windy. 27. Cloudy. 28. Windy. 29. Cloudy. 30. Cloudy: rain early A.M.

Sandwich Manse, Orkney.—Sept. 1. Clear. 2. Cloudy: showers. 3. Showers. 4. Showers: cloudy. 5. Damp: drizzle. 6. Damp: fine. 7—9. Clear: hot: fine. 10. Damp. 11. Haze: fog. 12. Fine. 13. Haze: clear. 14. Clear. 15. Clear: cloudy. 16. Clear. 17. Cloudy: fine: damp. 18. Showers. 19. Clear: aurora. 20. Rain. 21. Showers: cloudy. 22. Cloudy. 23. Damp: drizzle. 24. Drizzle. 25. Showers: drizzle. 26. Bright: cloudy: aurora. 27. Showers. 28. Showers: cloudy. 29. Rain. 30. Cloudy: rain.

Applegarth Manse, Dumfries-shire.—Sept. 1. Fair and fine: one slight shower. 2. Fair and fine. 3. Showery. 4, 5. Fine harvest-day. 6. Fine harvest-day: one slight shower. 7. Fine harvest-day: fair. 8, 9. Fine harvest-days. 10. Fine harvest-day, but cloudy. 11. Fine: shower early A.M. 12, 13. Fine harvest-days. 14. Fine harvest-day: thunder. 15. Fine harvest-day. 16. Fine harvest-day: sheet lightning. 17. Showery. 18. Fair and fine: thunder. 19. Fair and fine. 20—24. Fine harvest-day. 25. Fine harvest-days: hoar-frost. 26. Fine harvest-day: no frost. 27. Fine harvest-day: hoar-frost. 28. Dull: wet evening. 29. Cloudy: rain. 30. Cloudy.

Sun shone out 28 days. Rain fell 7 days. Thunder 2 days. Hoar-frost 2 days.

Calm 14 days. Moderate 9 days. Brisk 4 days. Strong breeze 3 days.
Mean temperature of the month 56°·3