



On the products of the decomposition of amber by heat

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M. Ebelman determined the state of oxidation of the uranium in pechblende, by a modification of a process which he has described in the sixteenth volume of the *Annales des Mines*, and the results of his analyses are—

Black oxide of uranium	75.23
Sulphuret of lead	4.82
Protoxide of iron	3.10
Protoxide of manganese	0.82
Silica	3.48
Lime	5.24
Magnesia	2.07
Soda	0.25
Carbonic acid	3.32
Water	1.85
	<hr/> 100.18

Ann. de Ch. et de Phys., Août 1843.

ON THE COMPOSITION OF WOLFRAM. BY M. EBELMAN.

Until lately wolfram has been considered as a compound of tungstic acid with the protoxides of iron and manganese; but recently, M. Schaffgotsch (*Ann. de Ch. et de Phys.* ii. p. 532) has stated that it contains the oxide of tungsten and not the acid. He has deduced this from the results of his analyses, which all gave an excess of five or six hundredths when the tungsten was estimated as tungstic acid. M. Wöhler arrived at the same conclusion from the action of chlorine on wolfram.

M. Ebelman remarks, that an experiment which is easy of execution appeared to him to be sufficient to decide the question: wolfram is acted upon by hydrochloric acid when boiling, and leaves a residue which is evidently tungstic acid.

The mean of five experiments on wolfram from the environs of Limoges gave the following results:—

Tungstic acid	76.20
Protoxide of iron	19.19
Protoxide of manganese	4.48
Magnesia	0.80
	<hr/> 100.67

The mean of two experiments made upon fragments of a large crystal of wolfram from Zinnwald, gave

Tungstic acid	75.99
Protoxide of iron	9.62
Protoxide of manganese	13.96
Lime	0.48
	<hr/> 100.05

Ann. de Ch. et de Phys., Août 1843.

ON THE PRODUCTS OF THE DECOMPOSITION OF AMBER BY HEAT. BY MM. PELLETIER AND PHILIPPE WALTER.

The authors remark, that the phenomena of the distillation of amber have been observed with the greatest attention by MM. Robi-

quet and Colin (*Ann. de Chem. et de Phys.*, tom. iv. p. 326); they state, that when amber is heated in a glass retort it softens, fuses, swells up considerably and yields succinic acid, oil and combustible gases; as the production of the acid proceeds the swelling up diminishes, and soon ceases altogether. If the fused matter be now examined, it is found to possess an even fracture of a vitreous and resinous aspect; if, on the contrary, it be heated quickly, it boils rapidly without swelling, and produces so large a quantity of oil that it flows in small streams; lastly, when the matter appears to be so completely carbonized that it yields scarcely any oil, and the retort be then heated till it softens, a yellow substance sublimes which has the consistence of wax.

If this waxy matter be treated with cold æther the *micaceous* matter of MM. Robiquet and Colin is obtained, but if it be boiled in absolute alcohol, taking care not to use enough to dissolve the whole mass, it will be observed that the portion which does not dissolve is of a much deeper yellow, less micaceous and more pulverulent than the original substance; it will also be seen that the first portions which crystallize, either by the evaporation or cooling of the æther, is of a much less intense yellow than the original matter; lastly, by the almost complete evaporation of the æther, a crystalline matter of a still less deep colour is obtained.

When each of these three products is separately treated with alcohol they behave in the same manner; a very yellow substance which does not dissolve, a less yellow substance which crystallizes first, a still paler substance remaining in the mother-water.

Eventually, however, after numerous experiments, the authors obtained only two substances; one in a very small quantity: this was pulverulent, scarcely crystalline, of a fine yellow colour, insoluble in cold alcohol, and scarcely soluble in it or æther when boiling; the other substance is white, in very fine flattened acicular crystals, more soluble in alcohol and in æther. This last is the true peculiar crystalline substance which constitutes the pyrogenous wax of amber; it is in quantity to the yellow matter insoluble in alcohol as 90 to 10.

The authors then state, that by various modes of treatment with alcohol of different strengths and æther, they obtained from heated amber,—1st, oil; 2ndly, yellow substance; 3rdly, white crystalline matter; 4thly, a brown bituminous matter, very soluble in alcohol, and possessing the characters of the non-acid pyretin of Berzelius.

Yellow substance.—The properties of this are that it is insoluble in water, scarcely soluble in boiling alcohol or æther; it is rather pulverulent than crystalline; requires a temperature of 464° Fahr. to melt it; it then volatilizes, and the greater part of it is decomposed. When heated in nitric acid it is converted into a reddish yellow resinous matter. Cold sulphuric acid has no sensible action upon it; when heated it dissolves it, acquiring a deep blue colour with a shade of green. By analysis it yielded

Hydrogen	5.8
Carbon	94.4
	<hr/> 100.2

This analysis, and the properties of this substance, prove its identity with that which M. Laurent calls *chrysène*.

White crystalline substance.—This is inodorous, insipid, scarcely soluble in cold alcohol, very sparingly soluble in æther, but more so than the preceding substance; soluble [fusible?] at 320° Fahr.; when heated in close vessels to above 576° Fahr. it is volatilized, a small portion, however, is decomposed with a small residue of charcoal; it dissolves in the fixed and volatile oils, but the alkalies do not act upon it. The mineral acids when cold do not attack it; when heated, sulphuric acid dissolves it, and assumes a deep blue colour without any shade of green, and it is soon carbonized. If before this effect is produced the acid be diluted, it becomes colourless, but recovers its colour by concentration; by hot nitric acid it is converted into a resinous matter. By analysis it yielded

	I.	II.	III.
Hydrogen	5·6	5·8	5·5
Carbon	95·6	95·3	95·8
	<u>101·2</u>	<u>101·1</u>	<u>101·3</u>

From these results the authors are of opinion that this substance is not merely isomeric, but identical with the *idrialine* of M. Dumas; and they propose to call it *succistérene*.—*Ann. de Ch. et de Phys.* ix. 89.

METEOROLOGICAL OBSERVATIONS FOR OCTOBER 1843.

Chiswick.—October 1. Fine: clear: overcast. 2. Overcast: showery. 3, 4. Cloudy and mild. 5. Very fine. 6. Densely clouded: rain. 7. Cloudy: rain. 8. Boisterous: overcast. 9. Rain. 10. Clear: overcast: rain. 11. Boisterous: heavy rain. 12. Boisterous: rain. 13, 14. Clear: cloudy and fine. 15. Foggy: cloudy: frosty and foggy. 16. Frosty: clear and cold: frosty. 17. Stormy, with rain. 18. Cloudless: clear and frosty. 19. Frosty haze: clear: frosty. 20. Frosty haze: fine: cloudy. 21. Cloudy: showery: clear. 22. Cloudy and fine: stormy at night. 23. Clear: cloudy: clear. 24. Densely clouded. 25. Cloudy: clear. 26. Frosty: very fine: clear. 27. Very fine: boisterous, with rain at night. 28. Boisterous: clear and fine. 29. Hazy: clear: foggy. 30. Hazy: rain. 31. Heavy rain.—Mean temperature of the month $2\frac{1}{2}^{\circ}$ below the average.

Boston.—Oct. 1, 2. Cloudy: rain early A.M. 3. Fine. 4, 5. Cloudy. 6. Cloudy: rain P.M. 7. Fine. 8. Cloudy: rain early A.M. 9. Rain: rain early A.M.: rain A.M. 10. Fine. 11. Rain. 12. Rain and stormy. 13. Fine. 14. Windy: ice this morning. 15, 16. Fine. 17. Cloudy: rain early A.M.: stormy night, with rain. 18—20. Fine. 21. Cloudy: rain early A.M. 22. Cloudy: rain P.M. 23. Fine. 24. Fine: rain P.M. 25—27. Fine. 28. Stormy: rain early A.M. 29. Fine. 30. Cloudy: rain early A.M.: rain P.M. 31. Cloudy.

Sandwich Manse, Orkney.—Oct. 1. Showers. 2. Showers: clear. 3. Showers: large hail. 4. Rain. 5. Drizzle. 6. Rain: showers. 7. Bright: showers. 8, 9. Cloudy: clear. 10. Showers. 11. Frost: showers. 12. Showers: hail. 13. Large hail. 14. Bright: showers. 15, 16. Hail-showers. 17. Snow-showers: clear frost. 18. Clear frost: showers. 19—21. Showers. 22. Clear frost: showers. 23. Showers. 24. Showers: sleet: showers. 25. Showers. 26. Showers: aurora. 27. Cloudy: rain. 28. Drizzle. 29. Showers. 30. Showers: fine. 31. Showers: fine: clear.

Applegarth Manse, Dumfries-shire.—Oct. 1. Cloudy: rain P.M. 2. Fine. 3. Dull. 4. Cold: dull. 5. Fine: mild. 6. Wet, but mild. 7. Rain. 8. Showers. 9. Clear: fair. 10. Dull: fair. 11. Wet. 12. Cold: snow on the hills. 13. Cold: hail-shower. 14, 15. Fine and clear. 16. Fine: dry. 17. Rain and sleet. 18. Fine: frosty. 19. Clear: fair. 20. Dull: wet P.M. 21. Clear and sunny. 22. Very wet: cleared P.M. 23. Boisterous: showers. 24. Wet. 25, 26. Fine: frost A.M. 27. Fine. 28. Fair: chill. 29. Heavy rain. 30. Fair: frost. 31. Wet: frost A.M.