



# On Bresilin and Bresilein

M. Preisser

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added to it; the capsule being again covered, the heat is to be continued till vapour ceases to appear; the glass plate must then be removed and replaced by folds of blotting-paper, the heat being continued in the bath, until a glass rod being immersed in the capsule, it becomes covered, on removing it, with yellow, solid chloride of gold.

The capsule is then to be removed from the salt-water bath, and the chloride of gold soon crystallizes in small prismatic crystals, of a fine yellow colour, with an orange tint. The chloride thus obtained is perfectly soluble in water without reduction; it is successfully employed in Daguerreotype and other operations.

The red chloride of gold (terchloride) is prepared in the same manner, except that the *aqua regia* employed is prepared with two parts of hydrochloric and one part of nitric acid. The operation is commenced by acting upon gold with excess of *aqua regia* on a sand bath, the salt water bath not being used until the gold is entirely dissolved; the remainder of the operation is conducted in the same manner as that for the yellow chloride.—*Journ. de Ph. et de Ch.*, Mai 1844.

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ON BRESILIN AND BRESILEIN. BY M. PREISSER.

Bresilin is the colouring matter of Brazil, Fernambuc or Nicaragua wood; this colouring principle was discovered by M. Chevreul, who obtained it by treating Brazil wood with alcohol, in the same manner as he obtained hematin from logwood.

This process, however, M. Preisser states, yields only an impure product; he procured it by acting on the interior and slightly coloured part of Brazil wood, in a state of great purity.

The properties of bresilin are like those of hematoxylin, recently isolated by Erdmann; it exists in small colourless needles, which appear to be rectangular prisms. Its taste is sweet, with a slightly bitter after-taste. It is soluble in water, and the solution may be long kept without alteration; it becomes coloured only on the edges, of a lively red colour. By boiling the colouring takes place much more rapidly; the liquor becomes of a fine crimson-red colour, and if this red coloured liquid is evaporated, it deposits numerous satin-like crystals of a bright and very fine red colour.

M. Preisser gives the name of *bresilein* to bresilin coloured of a bright red. Bresilin is soluble in alcohol and in ether; with the contact of air it is coloured bright red by means of hydrochloric acid; sulphuric acid dissolves it, renders it yellow and soon blackens it. Dilute nitric acid reddens it very strongly; if the mixture be heated, red vapours are disengaged and oxalic acid is produced.

The action of chromic acid and the alkaline chromates is very remarkable, and it is the more important to insist upon this action, as it explains numerous important applications in calico printing.

As soon as chromic acid or bichromate of potash in fine powder is added to a concentrated solution of bresilin, brisk effervescence ensues, and by distillation the liquor yields a notable quantity of formic acid; the liquor becoming of a deep brown colour, and after some hours a deep crimson lake separates. This lake is formed of the modified

colouring matter (*bresilein*) and oxide of chromium; when it is washed with diluted hydrochloric acid, the colouring principle is dissolved, and pure green oxide of chromium is left.

When solution of ammonia is poured directly upon the crystals of bresilin, they become immediately of a deep purple-red colour; but without the contact of air little change is produced.

Potash and soda give with bresilin, in contact with air, the colour of venous blood, which hydrochloric acid precipitates in an hour. Lime water reddens the solution of bresilin; nitrate of silver and chloride of gold are reduced when boiled with bresilin, while acetate of lead gives a whitish-yellow precipitate, becoming brown by drying. When decomposed by heat no traces of ammonia are perceptible.

By analysis bresilin yielded,—

Carbon . . .	66·36
Oxygen . . .	29·46
Hydrogen ..	4·18
	100·

and bresilein gave—

Carbon . . .	63·07
Oxygen . . .	32·97
Hydrogen ..	3·96
	100·

It will appear by calculation that the first of these substances is converted into the second by absorbing two equivalents of oxygen from the air.—*Journ. de Ph. et de Ch.*, Mars 1844.

#### METEOROLOGICAL OBSERVATIONS FOR MAY 1844.

*Chiswick*.—May 1. Dry haze: excessively dry: clear and fine. 2, 3. Cloudless: excessively dry. 4. Slight rain. 5—7. Overcast and fine. 8. Dry haze. 9. Sultry. 10. Overcast: very fine. 11, 12. Very fine. 13. Sultry. 14, 15. Very fine. 16. Cloudy and fine. 17. Cloudy and windy. 18, 19. Boisterous. 20. Boisterous: cold and dry. 21. Drizzly. 22. Dry haze: very fine. 23. Cold haze. 24. Cloudy and cold: fine. 25. Overcast: fine: clear. 26, 27. Cloudy and cold. 28. Cloudy. 29. Overcast: slight drizzle: rain at night. 30. Cloudy. 31. Overcast: fine: clear.—Mean temperature of the month 1°·2 below the average.

*Boston*.—May 1—3. Fine. 4. Cloudy. 5—7. Fine. 8, 9. Cloudy. 10. Cloudy: rain p.m. 11. Fine. 12. Cloudy. 13, 14. Fine. 15. Cloudy. 16. Fine. 17. Rain. 18. Cloudy: rain p.m., with rainbow. 19. Windy. 20, 21. Windy: rain p.m. 22, 23. Cloudy. 24. Cloudy: rain p.m. 25—31. Cloudy.

*Sandwich Manse, Orkney*.—May 1. Bright: clear. 2. Bright: cloudy. 3. Damp: clear. 4. Bright: clear. 5. Bright: cloudy. 6. Bright: rain. 7, 8. Bright: clear. 9. Damp: rain. 10. Drizzle: damp. 11, 12. Cloudy: clear. 13. Clear: showers. 14. Bright: cleared. 15. Cloudy. 16. Cloudy: showers. 17. Showers. 18. Clear: showers. 19. Bright: clear. 20. Bright: cloudy. 21, 22. Bright: damp. 23. Cloudy. 24. Cloudy: clear. 25. Bright: clear. 26, 27. Bright: cloudy. 28, 29. Cloudy. 30, 31. Cloudy: damp.

*Appletharsh Manse, Dumfries-shire*.—May 1—3. Fine, but parching. 4—6. Very droughty. 7. One slight shower a.m. 8. Fair. 9, 10. Showers, slight. 11. Fair, but cloudy. 12, 13. Fair and clear. 14. Cool. 15—17. Fair and withering. 18. Hoar-frost a.m. 19, 20. Fair and very dry. 21. Very high wind. 22—28. Very withering. 29. Hoar-frost. 30. Hoar-frost: dry. 31. A few drops of rain.