Action of phosphoric acid on cholestrine

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to one litre and a half of alcohol, than six times the quantity of cochineal.

Erythrosate of ammonia, after evaporating the excess of ammonia, possesses the same properties as the potash salt; but its colouring power is four times greater, and may be advantageously employed as red ink and for colouring soaps.

It appears that Russian rhubarb possesses the greatest colouring power, then Chinese, and lastly indigenous rhubarb; but the last-mentioned affords the most brilliant colour as a dye.—*Journ. de Pharm. et de Chém.*, Janvier 1850.

ACTION OF PHOSPHORIC ACID ON CHOLESTRINE.

BY M. C. ZWENGER.

Cholestrine is readily decomposed by concentrated phosphoric acid. The products of this decomposition, like those obtained by the action of sulphuric acid, are solid and well-defined carburetted hydrogens; but by their physical properties they are clearly distinguished from those obtained with sulphuric acid.

When one part of cholestrine is treated with six or eight parts of concentrated phosphoric acid, and the mixture is evaporated till its temperature reaches 278° F., the fusing point of cholestrine, this substance is completely decomposed. On the cooling of the fused mass, which must not have its temperature increased, a matter is obtained which has lost all crystalline appearance, and contains two carburetted hydrogens, *cholesteron* and *cholestearon*; these two carburets are separated by boiling alcohol, which dissolves the cholesteron. After purification by repeated crystallizations from absolute alcohol, this substance is obtained in brilliant rhombic prisms which fuse at 154° F. At a higher temperature the cholesteron boils, and may be distilled almost unaltered. It burns with a sooty flame; nitric acid oxidizes it, and sulphuric acid renders it of a red colour. It is insoluble in water, slightly soluble in cold alcohol, more soluble in it when concentrated and boiling, and very soluble in æther. Its mean composition is—

Carbon	87.78
Hydrogen	12.22
	<hr/> 100.00

Cholestearon is obtained in boiling the residue which has been exhausted by alcohol in æther. By cooling and evaporation of the æthereal solution, the new carburetted hydrogen is deposited in the form of a crystalline mass, which is readily purified by repeated solution in æther.

Cholestearon crystallizes from its æthereal solution in white silky needles, forming an interwoven mass. It dissolves with difficulty in æther, very slightly in alcohol, and not at all in water. Its proper solvents are the fixed oils. It fuses at about 347° F. At a higher temperature it distils, undergoing alteration. It burns with a sooty

flame. Its composition is expressed by the following numbers :—

Carbon	87·76
Hydrogen	12·24
	<hr/> 100·00

It is consequently isomeric with cholesteron.—*Journ. de Pharm. et de Chém.*, Novembre 1849.

METEOROLOGICAL OBSERVATIONS FOR JAN. 1850.

Chiswick.—January 1. Sharp frost: fine: cloudy. 2. Hazy: fine. 3. Foggy: hazy. 4. Foggy: overcast: clear. 5, 6. Frosty: very fine: clear and frosty. 7. Sharp frost: clear: severe frost at night. 8. Frosty: overcast. 9. Slight fall of granular snow: overcast. 10. Snowing slightly: overcast. 11. Hazy throughout. 12. Slight snow: dusky: hazy. 13. Hazy: clear and frosty. 14, 15. Cloudy and cold. 16, 17. Densely overcast. 18. Foggy: snow at night, with heavy rain. 19. Cloudy: drizzly. 20. Frosty. 21. Cloudy. 22. Hazy. 23. Hazy: clear at night. 24. Foggy and drizzly. 25. Foggy: densely overcast: rain at night. 26. Densely clouded: showery. 27. Sudden rise of barometer: frosty: very fine. 28. Overcast. 29. Very fine: rain. 30. Foggy: very fine. 31. Hazy and cold: heavy rain at night.

Mean temperature of the month	33°·11
Mean temperature of Jan. 1849	39·56
Mean temperature of Jan. for the last twenty-four years .	36·60
Average amount of rain in Jan.	1·60 inch.

Boston.—Jan. 1. Fine. 2. Cloudy. 3, 4. Cloudy: rain p.m. 5—8. Fine. 9—11. Cloudy. 12. Cloudy: snow a.m. 13. Fine. 14—17. Cloudy. 18. Cloudy: snow and rain p.m. 19. Cloudy: rain early a.m. 20. Cloudy: snow a.m. 21, 22. Cloudy. 23. Fine. 24. Cloudy. 25. Fine. 26. Cloudy: rain and snow p.m. 27. Fine. 28. Cloudy. 29, 30. Fine. 31. Fine: rain p.m.—N.B. This has been the coldest January since the year 1838.

Applethorpe Manse, Dumfries-shire.—Jan. 1. Frost: dull and threatening change. 2. Thaw: small rain. 3. Thaw: drizzle. 4. Slight frost early a.m.: rain and wind p.m. 5. Snow half an inch deep: frost. 6. Frost very hard: snow lying. 7, 8. Frost very hard. 9. Frost very hard: thermometer 11°. 10. Cloudy, looking like change. 11. Cloudy, but still freezing. 12. Still slight frost, but unsettled. 13. Frost still slight: cloudy. 14. Frost, slight a.m.: harder p.m. 15. Bright and clear: hard frost: a little snow. 16. Frost: slight shower of snow: looking dull. 17. Hard frost: clear: snow lying. 18. Hard frost, and heavy snow 4 inches deep. 19. Frost not so hard: thaw p.m.: frost again. 20. Frost: additional sprinkling of snow. 21. Frost hard again. 22. Frost moderate. 23. Thaw: mild: cloudy. 24. Thaw: snow melting fast. 25. Rain in the night: thaw continuing. 26. Thaw a.m.: came on to freeze at 6 p.m. 27. Hard frost a.m.: thaw and rain p.m. 28. Heavy rain: snow nearly gone. 29. Slight frost a.m.: keener p.m. 30. Frost moderate: snow all gone. 31. Slight shower of snow a.m.: frost: rain p.m.

Mean temperature of the month	30°·8
Mean temperature of Jan. 1849	36·3
Mean temperature of Jan. for the last twenty-eight years .	34·9
Average amount of rain in Jan. for the last twenty years .	2·60 inches.

Sandwich Manse, Orkney.—Jan. 1. Cloudy. 2. Bright: fine: rain. 3. Showers: sleet-showers. 4. Thunder: sleet-showers. 5. Thunder: showers. 6. Sleet-showers. 7. Sleet-showers: clear. 8. Cloudy. 9. Rain: cloudy. 10. Cloudy: sleet-showers. 11. Cloudy: clear. 12. Snow-showers: cloudy. 13. Cloudy: clear: frost: aurora. 14. Snow-showers: snow-drift. 15. Snow-drift. 16. Snow-drift: snow: thaw. 17. Rain: clear: frost: aurora. 18. Clear: frost: cloudy. 19. Snow-showers: cloudy: aurora. 20. Cloudy. 21. Cloudy: thaw. 22. Showers: drizzle. 23, 24. Drizzle. 25. Cloudy: snow-showers. 26. Snow-showers: snow: clear. 27. Snow: frost: snow-showers. 28. Showers: drizzle. 29. Bright: large halo. 30. Fine: frost: clear: aurora. 31. Bright: rain.