



Action of anhydrous phosphoric acid upon anhydrous camphoric acid

M.P. Walter

To cite this article: M.P. Walter (1841) Action of anhydrous phosphoric acid upon anhydrous camphoric acid, Philosophical Magazine Series 3, 18:116, 238-239, DOI: [10.1080/14786444108650285](https://doi.org/10.1080/14786444108650285)

To link to this article: <http://dx.doi.org/10.1080/14786444108650285>



Published online: 01 Jun 2009.



Submit your article to this journal [↗](#)



Article views: 1



View related articles [↗](#)

The following considerations induced M. Levol to believe that minium is a compound of two oxides. In supposing that minium is a peculiar oxide intermediate between these oxides, it is inexplicable how it happens that minium cannot be converted into binoxide by calcination with chlorate of potash, an effect which it readily produces with the protoxide of lead.

Oxalic acid constantly converts binoxide of lead into protoxide, but does not alter minium; and this is at once a method of purifying, and a good characteristic of minium. As this acid, as well as protonitrate of mercury and sulphurous acid, reduce the binoxide of lead to protoxide, and has no action on minium, it may be inferred, not only that minium is a compound of the two oxides, but that it is a compound of remarkable stability.—*Ann. de Chim. et de Phys.*, 75, 108.

ACTION OF ANHYDROUS PHOSPHORIC ACID UPON ANHYDROUS CAMPHORIC ACID. BY M. P. WALTER.

The action excited by anhydrous phosphoric acid upon anhydrous camphoric acid, in nowise resembles that of Nordhausen sulphuric acid upon anhydrous camphoric acid: the anhydrous sulphuric acid acts, so to speak, in a less destructive manner; it re-acts according to the rules of substitutions. Instead of taking carbon from the camphoric acid, it adds the elements of sulphurous acid, and from this re-action a new acid arises; whereas, in causing anhydrous phosphoric acid to act upon camphoric acid, it attacks it in all its molecules and gives rise to several compounds. If several layers of anhydrous phosphoric acid, and anhydrous camphoric acid, be arranged in a tubulated retort, with a tubulated receiver, having a bent tube adapted to it, and immersed in mercury, on the cautious application of heat to the retort, a considerable and continuous disengagement of gas takes place; when this ceases, a liquid substance runs down the neck of the retort into the receiver; this has a slight yellow colour, and a penetrating, but not disagreeable odour; when repeatedly rectified from anhydrous phosphoric acid it is rendered perfectly colourless. In the bottom of the retort there remains a black matter, which is strongly acid.

The gas which is formed in this re-action is of a compound nature; it is a mixture of carbonic acid and oxide of carbon, but they are in indefinite proportions. Several experiments proved that, for one volume of carbonic acid, there were four of oxide of carbon. The liquid is a carburetted hydrogen: two analyses, performed with two different products, gave the same quantity of carbon, namely, 88.4 and 88.2 per cent.; but the quantity of hydrogen varied half per cent.; in one analysis 11.6, and in the other 11.07 were obtained. If the first analysis be correct, the carburetted hydrogen has the same centesimal composition as oil of turpentine; but I do not think that it is oil of turpentine, though its formation may be explained by means of the formula of anhydrous camphoric acid; I am more inclined to believe that the [carburetted] hydrogen in question is a species of naphtha which contains 89 per cent. of carbon, and that

the smaller quantity of carbon, found in my analyses, is due to the presence of a little phosphuretted hydrogen, which it is difficult to separate from the carburetted hydrogen. In the latter case, in order to explain the formation of this carburetted hydrogen by means of the formula for anhydrous camphoric acid, the formation of water must be admitted in the re-action. I should have decided this question long since, if the quantity of carburetted hydrogen, obtained during the re-action, had been more considerable than it actually was.—*Ann. de Chim. et de Phys.*, 75, 212.

METEOROLOGICAL OBSERVATIONS FOR JAN. 1841.

Chiswick.—Jan. 1. Hazy: fine with clouds. 2. Rain: clear and fine: hurricanes at night. 3. Thunder-storm about 7 A.M., accompanied with large and vivid flashes of lightning, rain, hail and sleet, and high wind, which soon after subsided into a perfect calm. 4. Sharp frost: slight fall of snow: clear at night. 5. Densely overcast: snow: large lunar halo in the evening. 6. Hazy. 7. Intense frost. 8. Dense fog: severe frost. 9. Intense frost. 10. Overcast: slight haze: rain at night. 11. Overcast. 12. Cloudy: clear. 13. Foggy: rain: fall of snow. 14. Cold haze: rain: sleet and snow. 15. Rain. 16. Thawing rapidly: occasioning inundations, the frozen crust preventing the water from sinking into the earth. 17. Continued thaw. 18. Rain. 19. Overcast. 20. Cloudy and cold: sharp frost at night. 21. Frosty: fine. 22. Frosty: rain at night. 23. Clear. 24. Boisterous: cold and dry. 25. Clear and frosty. 26. Overcast and fine. 27. Very fine. 28. Cloudy. 29. Fine. 30. Hazy. 31. Foggy: rain.

Previously to the thaw, in the beginning of the month, the frost had penetrated in some soils to a depth of 12 inches.

Boston.—Jan. 1. Cloudy. 2. Fine. 3. Cloudy: stormy with lightning and rain early A.M. 4. Cloudy: snow early A.M.: stormy with rain P.M. 5. Stormy. 6, 7. Fine. 8. Fine: thermometer 17°·0 three o'clock P.M. 9. Fine: thermometer 28°·0 three o'clock P.M. 10. Cloudy: large fall of snow early A.M. 11. Cloudy: snow early A.M. 12. Cloudy. 13. Fine: rain P.M. 14, 15. Cloudy. 16. Cloudy: snow early A.M.: rain P.M. 17. Fine. 18. Cloudy. 19. Cloudy: rain early A.M. 20. Snow: snow P.M. 21. Cloudy: snow early A.M. 22, 23. Fine. 24. Stormy: heavy snow-storm P.M. 25, 26. Fine. 27. Fine: beautiful morning. 28. Cloudy. 29. Fine. 30. Cloudy. 31. Rain: rain early A.M.: snow-storm P.M. N.B. The 8th of this month was the coldest day since Jan. 1, 1820.

Applegarth Manse, Dumfries-shire.—Jan. 1. Slight showers. 2. Slight showers: frost in the morning. 3. Snow-storm. 4. Snow-storm and frost. 5. Snow-storm. 6. Fair: snow lying. 7. Snow-fall: frost very keen. 8. Snow-fall slightly: frost keen. 9. Thaw, with slight snow. 10. Snow and frost again. 11. Fair: snow lying: thaw P.M. 12. Fair: but freezing hard. 13. Fair: freezing. 14, 15. Fair. 16. Storm of snow, sleet and rain. 17. Thaw: heavy rain P.M. 18. Frost again: clear. 19. Frost again. 20. Frost again: Aurora borealis. 21. Thaw: drizzling rain. 22. Wet and boisterous. 23. Wet and boisterous: slight snow-fall. 24. Fair: frosty: slight snow-fall. 25. Frost A.M.: drizzle P.M. 26. Thaw and thick fog. 27. Shower in afternoon. 28. Fair and fine: snow melting. 29. Drizzling. 30. Thick fog all day. 31. Clear and cold: moist P.M.

Sun shone out 25 days. Rain fell 10 days. Snow 8 days. Frost 16 days. Fog 2.

Wind north 2 days. North-east 5½ days. East 2 days. East-south-east 3½ days. South-east 1½ day. South-west 4 days. West-south-west 1 day. West 4 days. West-north-west 2½ days. North-west 3 days. North-north-west 2 days.

Calm 8 days. Moderate 8 days. Brisk 3 days. Strong breeze 7 days. Boisterous 4 days. Stormy 1 day.

Mean temperature of the month.....	31°·45
Mean temperature of January, 1840.....	37°·80
Mean temperature of spring-water	42°·00
Mean temperature of spring-water, 1840..	43°·30