XL. On the pretended formation of oxalic acid in a mixture of alcohol and sulphuric acid

M. Vogel

To cite this article: M. Vogel (1814) XL. On the pretended formation of oxalic acid in a mixture of alcohol and sulphuric acid , Philosophical Magazine Series 1, 43:191, 200-201, DOI: [10.1080/14786441408638003](https://doi.org/10.1080/14786441408638003)

To link to this article: <http://dx.doi.org/10.1080/14786441408638003>

Published online: 27 Jul 2009.

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

Article views: 2

View related articles [↗](#)

certainly imitate every tint in nature; with gamboge and carmine the prismatic red, and all the other gradations of orange, may be made: and carmine with Antwerp blue gives the prismatic violet, indigo, &c. But if instead of carmine he takes vermilion, or any other pigment of the hue of the prismatic red, he will find it impossible by joining it with blue to produce crimson, pink, violet, or any of the purples.

On looking through the prism, or a convex lens, objects are tinged on their edges with a fringe of colour; according to the relative positions of light or dark, that fringe is either yellow running into prismatic red, or blue running into violet. These two fringes united in the prismatic spectrum form the whole range of colours there shown. But, from what I have said, I think it is evident that it is deficient one third of the circle, which third includes the true primary colour of red with its most immediate compounds.

I am unpractised in writing; but if I have advanced any thing that may be useful, in language that may be understood, I hope that any defect of style will be treated with indulgence.

I am, sir, yours respectfully,

THOMAS HARGREAVES.

P.S.—Is Mr. Sowerby's work on Colours published?*

To the Editors of the Phil. Mag.

XL. *On the pretended Formation of Oxalic Acid in a Mixture of Alcohol and Sulphuric Acid.* By M. VOGEL†.

A CONSIDERABLE time has elapsed since M. Cadet de Gassicourt announced, that oxalic acid could be formed by the simple contact of sulphuric acid and alcohol. The author expresses himself in the following manner‡: "I made a mixture of equal weights of well rectified alcohol and sulphuric acid: this mixture remained at rest for about thirty hours. At the end of this period I perceived at the bottom of the flask, and attached to the lower sides, a quantity of crystals about ten or twelve millimetres long, and formed by tetrahedral prisms terminated by a dihedral summit. After having decanted the liquor, I examined these crystals; and I ascertained, with the help of calcareous salts and reagents, that it was oxalic acid." M. Cadet then promises to resume this experiment on a large scale; which, so far as I know, he has not yet done.

This very remarkable result of the formation of oxalic acid by means of the sulphuric acid, has been nevertheless quoted in a

* Yes; and may be had of the ingenious Author, No. 2, Mead Place, Lambeth.

† *Annales de Chimie*, tome lxxxvi. p. 219.

‡ *Ibid.* xxxv. p. 200.

great

great number of works, and no person has hitherto called the fact in question.

Having occasion annually to make a quantity of sulphuric ether, I have always remarked that the mixture of equal parts of alcohol and sulphuric acid becomes milky, and deposits a white crystalline powder.

With a view to collect this crystalline deposit, I mixed the liquids in a large flask, and I decanted it after a few days in order to proceed to distillation.

After having preserved the precipitates for several years, I mixed them together in order to subject them to an ulterior examination.

This powder, when mixed with some fine needle-formed crystals, being dried with a gentle heat, had an acid taste, owing to a little sulphuric acid which was interposed, and which I took up by washing with alcohol. This alcoholic liquor contains merely, as I have said, sulphuric acid, and not a trace of oxalic acid. The powder when thus washed was perfectly neutral: it did not even contain any substance of the organic kingdom; for, when heated in a retort, it is not carbonised, and no gas is extricated. Boiling water dissolves a small quantity, and this solution is turbid with oxalate of ammonia, as well as by the muriate of barytes. The white residue, insoluble in boiling water, immediately becomes black on placing it in contact with sulphuretted hydrogen, or rather with the hydrosulphuret of ammonia.

I pass over other details of experiments; for it is easily seen that the crystals, which are deposited from a mixture of equal parts of sulphuric acid and alcohol, are nothing else than a compound of sulphate of lime and sulphate of lead*.

XLI. *The Propagation of Sound, according to the Newtonian Theory, demonstrated;—with Remarks on the one advanced by LA PLACE, and other Observations.* By RICHARD WINTER.

Whithy, March 15, 1814.

SIRS, **T**HE theory of the propagation of sound through the atmosphere, is a problem that has engaged the attention of mathematicians and philosophers of the first celebrity; but the great differences deduced from the most accurate observations of experimentalists, and the investigations of mathematical theorists, have almost rendered the researches of modern philosophers hopeless of acquiring the truth from theory alone.

We shall merely notice a few of the many observations which have been made to determine this problem.

* A mixture of twenty pounds of alcohol and sulphuric acid gave only 25 grains of this dried powder.