This article was downloaded by: [Ohio State University Libraries]
On: 24 August 2012, At: 17:24
Publisher: Taylor & Francis
Informa Ltd Registered in England and Wales Registered Number:
1072954 Registered office: Mortimer House, 37-41 Mortimer
Street, London W1T 3JH, UK

Philosophical Magazine Series 1

Publication details, including instructions
for authors and subscription information:
[http://www.tandfonline.com/loi/
tphm12](http://www.tandfonline.com/loi/tphm12)

XXXVII. Extract from a memoir upon the existence of alcohol in wine

M. Gay Lussac

Version of record first published: 27 Jul
2009

To cite this article: M. Gay Lussac (1814): XXXVII. Extract from a memoir upon the existence of alcohol in wine , Philosophical Magazine Series 1, 43:191, 192-193

To link to this article: <http://dx.doi.org/10.1080/14786441408638000>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: [http://www.tandfonline.com/
page/terms-and-conditions](http://www.tandfonline.com/page/terms-and-conditions)

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae,

and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

clines horizontally: the *hyper-oxygenated muriate of potash* is introduced into the retort B, and it is screwed to the cylinder: the lamp is lighted, and the bellows E are applied to the mouth of the patient, while an assistant holds the nostrils firmly with his fingers. The oxygen gas begins to be developed; and as in the interior of the cylinder the aperture of the retort communicates with that of the tube *ddd*, this gas, not having any other vent, proceeds into the bellows, which are kept open on purpose. When the bellows are supposed to be full, or nearly so, they are shut; and the gas, not having any way of escaping, from the valve being shut, is compelled to enter into the patient's mouth and lungs. This process, which may be repeated at intervals, along with the other methods already known, forms the essential part of the very simple method which I propose. I have had the pleasure, with the above apparatus, to restore animation to one person, who was taken out of the sea, and supposed to be drowned.

XXXVII. *Extract from a Memoir upon the Existence of Alcohol in Wine.* By M. GAY LUSSAC. Read at the French Institute, March 1, 1813*.

IT was my object to determine more precisely than has hitherto been done, the true epoch at which alcohol is formed in wine. Is it formed during distillation, as many chemists suppose from the experiments of M. Fabroni†, or at the moment of fermentation, as Mr. Brande thinks, without however giving any thing like satisfactory proofs?

It will be recollected that M. Fabroni established his opinion, by demonstrating from his experiments that alcohol could not be extracted from wine when saturated with subcarbonate of potash; whereas, by the same method, the smallest quantity of alcohol which might have been added to the wine was recovered.

Mr. Brande proves incontestably‡, that we cannot extract alcohol from wine by M. Fabroni's process; but he does not destroy his opinion, without showing that we constantly obtain the same quantity of alcohol from wine by distilling it at the varied temperatures of 93°·3, 87°·7, and 82°·2. It is nevertheless evident that the temperature 82°·2 is still high enough for the formation of the alcohol during distillation: hence it follows, that M. Fabroni's opinion is not completely overturned—far less is that of Mr. Brande very clearly established.

I have proved that subcarbonate of potash may be used to de-

* *Annales de Chimie*, tome lxxxvi. p. 175. † *Ibid.* tome xxx. p. 220.

‡ *Phil. Trans.* 1811, p. 337. Vide *Phil. Mag.* vol. xxxviii.

monstratē

Incident Light not decomposable into the prismatic Colours. 193

monstrate the presence of alcohol in wine; but we must begin by isolating the foreign substances which are mixed or combined with it, and which oppose its separation. The process which I consider as the most advantageous for this purpose, consists in shaking the wine with well pounded litharge: it speedily becomes limpid like water, by giving to the litharge its colouring and extractive matter: the subcarbonate of potash then very easily demonstrates the presence of alcohol.

I can give another proof of the existence of alcohol in wine, equally conclusive, by distilling wine in vacuum at the temperature of 15° , which, as is well known, is very inferior to that which is developed during fermentation, for I obtain a product decidedly alcoholic.

These two experiments prove beyond doubt that alcohol is not formed during fermentation, as was generally supposed previously to M. Fabroni's experiments.

I shall terminate my memoir, which is about to appear in the third volume of the *Mémoires d'Arcueil*, by showing that we may obtain the pure alcohol of Richter by employing quicklime, or rather barytes, in place of muriate of lime.

XXXVIII. *Experiments tending to prove, that neither Sir ISAAC NEWTON, HERSCHEL, nor any other Person, ever decomposed incident or impingent Light into the prismatic Colours.* By JOSEPH READE, M.D.

Cork, January 24, 1814.

SIRS,—SIR ISAAC NEWTON, for the purpose of decomposing light, made a small hole in his window-shutter a quarter of an inch in diameter, and, having placed a prism so as to refract and receive a spectrum on a sheet of white paper, perceived seven colours in the following order: red, orange, yellow, green, blue, indigo, and violet: these he supposed to be primary colours, which when combined in certain proportions gave white or transparent lights. The necessary shortness of a letter will not permit me to enumerate his experiments; I therefore refer to his *Optics*. That this philosopher was mistaken in supposing he analysed incident light, will appear evident from the following experiments and observations. When we look with a prism at a window, the light passes through the panes, and likewise through the prism, to the eye, undecomposed, and consequently colourless; but when we look to the frames, we perceive an artificial rainbow of reflected blue, red, and yellow. Any opaque substance, as a piece of black cloth or paper, when pasted on the window, will produce the same effect; and the more dense or dark, the deeper the tints or fringe*.

* I use the word *fringe* as much more appropriate than *penumbra*, whose derivation is absurd.