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To cite this article: J.B. Van Mons (1799) V. Extract of a report, on the means to be used for purifying the air in the apartments of sick persons, made to the society of medicine at Brussels, Philosophical Magazine Series 1, 3:11, 258-260, DOI: [10.1080/14786449908676991](https://doi.org/10.1080/14786449908676991)

To link to this article: <http://dx.doi.org/10.1080/14786449908676991>

Published online: 18 May 2009.

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V. *Extract of a Report, on the Means to be used for purifying the Air in the Apartments of Sick Persons, made to the Society of Medicine at Brussels. By J. B. VAN MONS.*

THE principal object of the author, in this Report, is to prove that it ought not invariably to be the aim of the physician to repair the loss of a portion of the respirable air in the atmosphere which furrounds the patient ; since diseases may occur, such as those of a putrid and inflammatory nature, where an augmentation of the unrespirable part may be beneficial. In such diseases, if air of the common standard be respired, the patient is furnished with such a portion of oxygen as, by increasing animal heat and accelerating circulation, must naturally increase the fever, inflammation and putrefaction, or decomposition of the blood and other humours. A lowered atmosphere, which in health is improper for respiration, must in these states prove salutary, as, by affording less oxygen to the system, it will abate inflammation, check the putrefaction, and diminish other bad symptoms, producing the good effect of what are called cooling medicines. These principles are confirmed beyond a doubt by daily experience*.

“ It is,” says this author, “ to the salutary effect produced by diffusing through the atmosphere a new portion of unrespirable and of diminishing the respirable air that fumigations have been so long indebted for their being employed as correctors of corrupted air, while those who prescribed them often did so on a very contrary supposition.

“ In general I have found the air in the apartments of sick persons to consist of abundance of carbonic acid gas, hydrogen gas, oxygen gas, and azotic gas ; sometimes of a

* No facts of this kind are known in England ; and from the experience of Dr. Thornton and others, it would seem, that a super-oxygenated air is highly beneficial in putrid diseases, although it be inimical to those of an inflammatory nature. EDIT.

little ammoniacal gas, and a peculiar emanation called contagious miasm, which appears to be a particular combination of hydrogenous carbonic acid gas, holding in solution animal fluids as yet little known. Hydrogen gas almost always holds in solution pure carbon, phosphorus, &c. from which arises the smell of these gases, often so disagreeable. Carbonic acid gas would form a much more considerable part of the atmosphere which surrounds sick persons, were not this gas continually neutralised and rendered concrete by the ammonia, which is formed and evolved in all diseases where animal substances containing azot are decomposed. It may readily be perceived into what contradiction those have fallen who suppose air to contain at the same time carbonic and ammoniacal gas. The absurdity of exposing in the apartments of the sick, vessels filled with quick-lime, must also be obvious; the inconvenience of which, in all cases, is to leave in a disengaged state, or to return to the air, the ammoniacal gas; the carbonic acid gas, which would otherwise neutralise it, being taken up by the stronger affinity exerted upon it by the lime; and, in some cases, to take away an unrespirable gas, the presence of which would be beneficial.

“ I have ascertained that in a state of health we form by respiration more water, and in a state of disease more carbonic acid. The carbon seems, at a certain temperature, to exercise on the oxygen a stronger attraction than the hydrogen can in the same temperature. Among the principal means for purifying infected air I class vaporised water, which incommodes the patient very little, and takes putrid emanations out of circulation better than the muriatic and acetous acids, or than spirits, being a better solvent than these liquids. When the air is surcharged with ammonia, I would rather let loose into it the carbonic acid gas than the acetous or any other acid. The case in which C. Guyton employed with so much success the muriatic acid vapours

was totally different from those which have been the objects of my researches.

The fulphurous acid gas would be useful in some cases to decompose miasmata, by giving up to them a portion of its oxygen; but it leaves behind it an oxyd of sulphur, the smell of which is extremely offensive: the oxygenated muriatic acid gas ought therefore to be preferred.

The gases which in my opinion ought to be employed for augmenting the portion of unrespirable air, are the carbonic acid gas and hydrogen gas. The first ought to be made to pass through water, and the second through oil. By these means you free the carbonic acid gas from that portion of the acid employed to disengage it from the carbonate used, which it carries along with it; and you precipitate from the hydrogen gas the carbon it holds in solution. The oil, after being used some time for this purpose, is found quite black, and converted into empyreumatic or carbonated oil.

VI. *Simple and Easy Method of Cleaning and Whitening Prints or Engravings.* By M. FABBRONI. From *Annali di Chimica*, by BRUGNATELLI. Vol. XIV.

THE methods formerly employed for cleaning engravings consisted in washing them in pure water, or a weak lixivium of pot-ash, or in exposing them a very long time to the dew. Aquafortis has also been sometimes employed. Leys, however, together with the dirt and filth, carried away part of the colour of the engraving, and aquafortis attacked the vegetable fibre of which the paper of the print was composed.

Since the discovery of the oxygenated muriatic acid by Scheele, and the application of its properties, by Berthollet, to the bleaching of cloth, trials have been made of it also for whitening prints and engravings; and Chaptal's experiments on this subject were attended with the best success *.

* For Chaptal's process see *Phil. Mag.* Vol. II. p. 28.