

the latter applied in a greater Number in vain, even when the Symptoms were not so seemingly desperate as in the Case before you.

He took near one hundred and five Grains of Musk in about thirty Hours; but I can't say he either slept or perspired more than ordinary upon it.

XVI. *Part of a Letter from the Rev. Dr. Miles, F.R.S. to Mr. Henry Baker, F.R.S. concerning Electrical Fire.*

*Dear Sir,*

Read Feb. 20. 1745-6. **Y**OU query, Whether that subtil Fire which kindles warm'd Spirit of Wine, be resident in the Body from which it evidently issues, and be kindled occasionally? or, Whether it comes from the excited Tube pervading instantaneously the Body it is applied to? or, lastly, whether there are certain Principles in the Air, which are thus agitated into an extemporaneous Lightning? These Queries are certainly very comprehensive and important; I wish I were able to return you somewhat more satisfactory than Suppositions.

I incline to think the electrical and luminous *Effluvia* to be the same, and not distinct Substances. Mr. *Hauksbee* seems to distinguish them, intimating, that no luminous Matter would be communicated from an excited Cylinder of Wax to his Finger, when brought near to the Cylinder, though it attracted light Bodies; but it is to be observed, that this Cy-  
linder

Under of Wax was only a Coat of Wax, of about half an Inch thick, on a wooden Cylinder of four Inches Diameter: Now I have always found my Stick of Wax, which consists of nothing else, to emit luminous *Effluvia* very plentifully, and rather in a greater Degree than the glass Tube.

If we conclude with the *English* Philosophers, that Fire is mechanically producible from other Bodies, by Collision, Attrition, &c. or, according to Sir *Isaac Newton*, by putting the sulphureous Particles of Bodies into a very strong vibratory Motion; by which means they become hot and lucid, *i. e.* affect us with Ideas of Light and Heat; on this Supposition may we not conclude, that the Action on the glass Tube, when it is rubb'd, by putting the Parts of it into such a Vibration, and, consequently, agitating violently the sulphureous Particles therein, may heat and kindle them? And may it not also be supposed, that when the Air is in a due State, nitrous or other Particles in the Air may contribute to the kindling them? Or perhaps, rather that subtil, active, elastic Substance, which Sir *Isaac Newton* supposes to be the Cause of the Refraction, &c. of Light, and which communicates Heat to Bodies, and is universally diffused? These *Effluvia*, being thus agitated and convey'd by a non electric Body intervening, in a due Quantity, to the Vapour of the warmed Spirit, may be supposed to kindle them, without exciting any originally-resident Fire in the Body immediately communicating with them; the luminous *Effluvia* from the Finger, or Ice, &c. when brought near the inflammable Body, being, as far as we can perceive, of the very same kind with those which proceed

from the Tube; or there is nothing appearing in them which may lead us to suspect they are not the very same, tho' in a greater Quantity than what can come from the Part of the Tube you approach with the End of your Finger.

If we conclude with some of the foreign Philosophers, *Boerhaave*, *Homberg*, *Lemery*, *s' Gravesand*, &c. that Fire is equally diffused throughout the Universe by the Creator, pervading the Interstices of all Bodies, and that there is no Fire mechanically produc'd *de novo*; then, may we not conclude, that whereas, by Attrition of the glass Tube, there is produced a very quick and strong Vibration of its Parts, which must necessarily affect the Fire contain'd in the Vacuities, by Compression and Relaxation; so that, as *Boerhaave* expresses it, there must be, in the Bodies thus agitated, and in the Fire contain'd in its Pores, an exceeding great Motion excited, and, together herewith, the surrounding Fire, from both these Causes, must be agitated, and so much the more violently, the nearer it is; May we not conclude, that its Force will be hereby sufficiently increased to kindle the Spirit to which it is convey'd?

In this, as in the former Hypothesis, I would not exclude the elastic *Materia subtilis* from being supposed the having an Influence on the *Effluvia*. Whichsoever of the two *Hypotheses* we embrace, you may perceive, that I incline to think, that the kindling Fire rather proceeds from the excited Tube, I am very sensible I am in a great measure groping in the dark; but hope future Experiments will cast

a Light on this obscure Subject. I am, with very great Respect,

Dear Sir,

Tooting, Feb. 15.  
1745-6.

Your faithful Friend,

and obliged humble Servant,

H. Miles.

XVII. *An Account of a Book intituled, De quamplurimis Phosphoris nunc primum detectis Commentarius. Auctore Jac. Barthol. Beccario. Printed in 4to. at Bologna, 1744. Extracted and translated from the Latin by W. Watson, F. R. S.*

Read Feb. 27. 1745-6. **T**HE ingenious Author, in the Work before us, does not treat expressly of those Productions of the chemical Art, which we usually call *Phosphori*, but principally of such Substances, whether natural or artificial, which imbibe the Rays of Light in such Quantities, and in such a Manner, as to appear luminous for a Time, even in absolute Darkness.

Before I enter upon the Subject Matter of this Treatise, I must take notice of the *Apparatus* made use of in these Inquiries. Our Author caused a wooden Box to be made, large enough either to sit in, or stand in upright; yet not so large but he might with Ease be carried to any Place the most convenient

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