Edme Mariotte Manuscript: A Treatise of the motion of water and other fluid bodyes

p1

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A Treatise of The motion of water, and other fluid bodyes
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Part I of
many properties of fluid body's of ye origins of fountains
[[line]]

Discourse I of many properties of fluid bodyes.

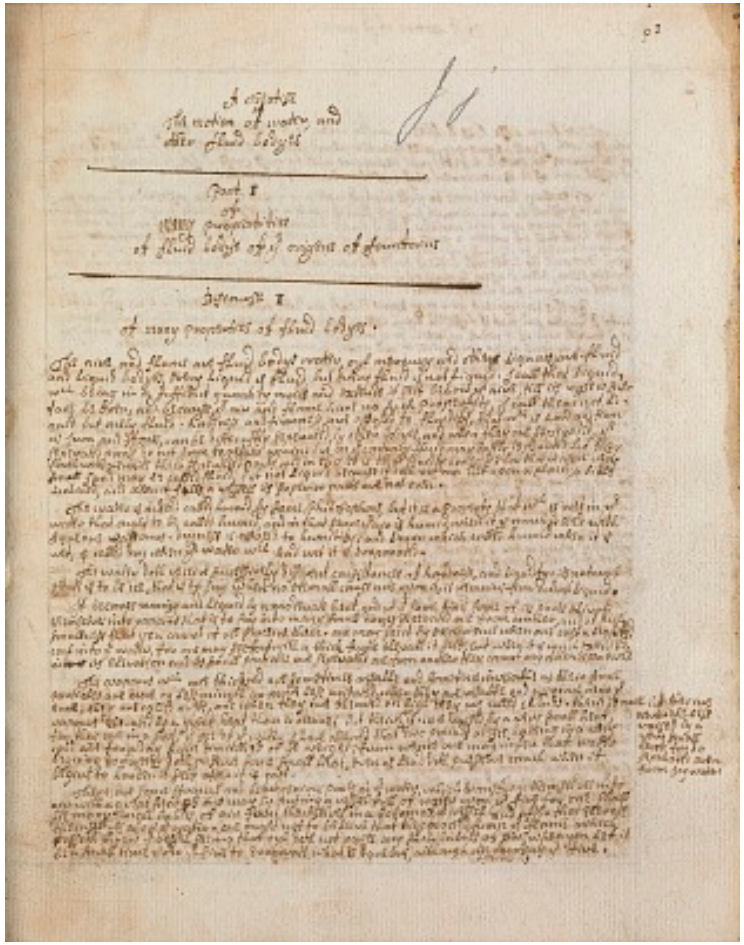
The aire and flame are fluid bodys water, oyl mercury and other liquors, are fluid and liquid bodyes, every liquid is fluid, but every fluid is not liquid. I call that liquid, which being in a sufficient quantity runds and extends it self below ye aire, till its upper surface be even, and because ye air and flame have no such propertyty, I call them not liquid but only fluid. Hardness and firmness are opposed to fluidity, that which is hard and firm as Iron and stones, can be difficultly seperated by other bodyes, and when they are seperated, the ye seperated parts do not joyn together again: but on ye contrary fluid may easily separated but they forth with reunite their seperated parts and in this it is that fluidity consists. For that reason very small sand may be called fluid, but not liquid because it doth not run but upon a plain, a little inclined, and when it fills a vessel its superior parts are not even.

The water is indeed called humid by some philosophors, but it is a property that which is wet in ye water, that ought to be called humid, and in that sence ye air is humid, when it is much filled with Aqueous vapours. Dryness is opposed to humidity, and Linnen which called humid when it is wet, is called dry when ye water wch had wet it is evaporated.

The water doth receive successively different consistances of hardness, and liquidity: its naturall state is to be ice, that is to say when no eternall cause acts upon it, it remains firm and not liquid.

It becomes running and liquid by a moderate heat, and at ye same time some of its parts elevate themselves into vapours that is to say into many small drops seperated one from another, and of such smallness that you cannot at all perceive them. One may see it by experience when one cast a lighted coal into ye water, for one may see fort with a thick fume elevate itself, but when it is much extended in [[strikethrough]]to a [[/strikethrough]] its elevation and its small particles are seperated one from another they cannot any of them be perceived.

The vapours wch are thickned are sometimes visable and sometimes invisable as their small particles are more or less minute or more less agitated when they are visable and approach near ye earth, they are called mists, and when they are elevated on high they are called clouds. There is more vapours elevated by a great heat than a meane; but theire ^[[+]] is none [[?raised]] by a very small heat, for they are in a sort of ice of ye water. I have observed that ^[[+]]^ two pounds of ice heating in a very cold aire for a day have diminished of ye weight; from wence one may infer that water beginning to freeze doth preserve some small heat, even as lead doth preserve much when it begins to harden it self



after it is cast.

[marginalia]] but they are nevertheless raised by a very small heat, for so seperated even from icy water. [[/marginalia]]

There are some strange and hetrogenius parts in ye water, which transform themselves into aire with a great heat as one may by putting a vessel full of water upon ye fire for one shall see many small bubles of air form themselves in a bottom of a vessel and after that elevate themselves above ye water. One ought not to beleive that they proceed from ye flame which passeth throw ye vessel seeing that oyl doth not raise any such bubles of air, when you let it be a small time over ye fire to evaporate what is aqueous, although one augments ^or [[?]]^ ye fire.

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