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

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21.
The Second Part
of The Equilibrium of
Fluid Bodies
[[line]]
Discourse I
of ye

Equilibrium of Fluid Bodies by weight

To Explain well ye Equilibrium of fluid bodies between themselves or with other bodies one may use these following rules.

Rule I

A body doth not resist to be elevated up from ye base, but in proportion to its distance to ye centre of ye earth, and a weighty body may be moved with a small force if ye distance is changed in respect of ye same centre.

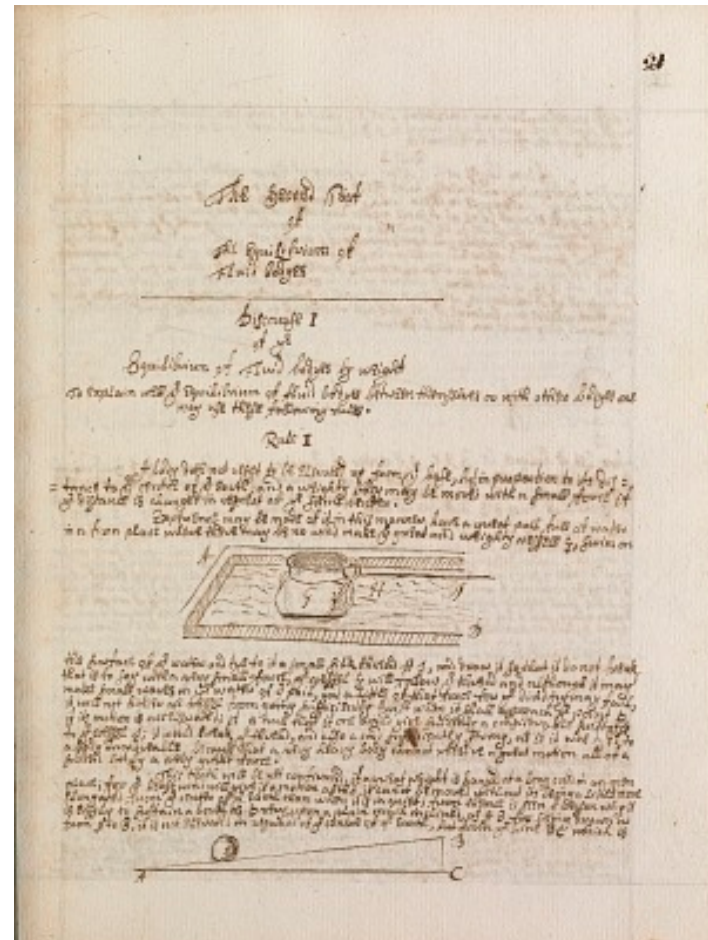
Experience may be made of it in this manner have a great pail full of water in a firm place where there may be no wind make a great and weighty vessel G, swim on

[[image: three dimensional drawing of a globular vessel (J) floating on water with a string (H and J) tied to the vessel's handle, in a raised box container labeled A at upper left corner and B at lower right.]]

the surface of ye water and tie to it a small silk thread H J, and draw it so that it do not break that is to say with very small force, ye vessel G will follow ye thread and although it may make small waves in ye water of ye [[?path]], and a little of that force for ye dividing may [[?faith]] it will not hinder ye vessel from going sufficiently swift when it shall approach ye point D if its motion is accelerated; it is true that if one would give suddenly a considerable swiftness to ye vessel J [[the thread]], it would break ye thread, and also a cord sufficiently strong, as if it was tyed to a body immoveable, because that a very heavy body cannot receive a great motion all of a sudden but by a very great force.

This truth will be yet confirmed, if a great weight is hanged at a long cord in an open place; for ye least wind will give it a motion altho it cannot be moved without its being a little more elongated from ye centre of ye earth than when it is in quiet; from thence is seen ye reason why it is easily to sustain a body as D [[?very]] upon a plain much inclined as A B for being drawn or from A to B, it is not elevated in regard of ye centre of ye earth, but from ye line B C which is

[[image: drawing of a long sloping triangle (inclined plane) labeled A on left, up to B at top and down to C on baseline; shaded ball (D) shown 1/5th way up the ramp.]]



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