

when I washed away, I found Globules of Mercury in many places under the *Bronchia*, and upon Examination they proved to be in the *Arteria pulmonalis*. I have press'd these Globules backwards and forwards, and made some of them get out at the holes made in the *Vesiculae* above describ'd. I took some pains to find where the *Sanies* was received into the *Bronchia*, but could not satisfy my self. From hence may appear the danger of using Mercury in humane Bodies, so as that it may get into the Mass of Blood, especially into the Lungs; they wanting that brisk strong motion which the Muscles have in other parts, which are able to force it along with the Blood, in order to the raising a Salivation. Their lax spongy Texture makes them extremely unfit for clearing themselves of so troublesome a Guest as Mercury is. That it has this Effect on humane Lungs, is plain from what we daily see in persons that have been often-flux'd, who are after observ'd to dye of Consumptions that will not give way to Medicine.

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*Medicina Hydrostatica, or Hydrostaticks applied to the Materia Medica, shewing how by the Weight that divers Bodies used in Physick have in Water, one may discover whether they be Genuine or Adulterate. By the Honourable ROBERT BOYLE, Fellow of the Royal Society, London, 8vo 1690. Printed for Sam. Smith.*

THE Honourable Author designs in this Treatise to shew, that by weighing Bodies in Water, comparing their weight in Air, and from thence deducing the proportion of weight to Water, the Specific Gravity of Bodies may be more exactly determined; counterfeits distinguisht from Genuine, and the mixture of mineral Particles in Stone discovered. *Archimedes* first observed, That a Body heavier than Water, weighs less in Water

Water than in the Air, by the weight of as much Water as is equal to it in Bulk. The difference then of the Weights in Air and Water, gives the weight of so much Water, and dividing the greater number by the lesser, the Quotient compared to unity, will be the proportion of the Weights of the solid Body and Water.

*Rock Crystal*, and the *Icecles* of *Vaulis* are us'd as the Standard, ( being the most homogeneous and simple ) to compare other Stony Bodies with, which if found heavier are presum'd to contain matter heavier *in specie*. They are to water as  $2 \frac{1}{3}$  to 1. *Lapis Hematites* almost double to the Standard, and *Iron* is discover'd in it by the *Strytical* taste of its Flowers, and by the black colour when mixt with Galls. *Lapis Lazuli* having a vomitive Quality as 3 to 1. *Loadstone* more than 4 to 1. *Lap. Calaminaris*, us'd in the turning Copper into Brass, and of a Quality very restraining, appears to weigh as almost 5 to 1. *Coral*, truly therefore esteem'd a *Lithodendron* somewhat exceeds *Crystal*. *Pearl* near the weight of *Crystal*. *Calculi Humani* and *Bezoars* (Animal Concretions) amount not to twice the weight of Water, and are by a fifth part lighter than *Crystal*, by which counterfeit *Bezoars* are detected: such an one being found as heavy as a mineral. It is further observed that counterfeit *Crabs Eyes* are of much more weight than natural. *False Stones* are easily detected, the *Mineral* which gives the *Colour* making them preponderate to true *Gems*. *False Coyns* in this manner are easily discoverable.

Our Author having in these particulars shewn in what manner all solid Bodies heavier than Water may be compar'd to one another, and not only their Specific Gravity, but their qualities very often detected; comes now to consider and propose, 1. How Bodies lighter than Water may be examined in it, viz. by adding Lead to Wax or Fir-wood, and subducing for the heavy Body so added. 2. How Fluids, as Mercury, or Chymical Oyls of Cloves, &c. or Bodies dissoluble in Water, as *Sublimate*, *Alum*,  
*Vitriol*,

*Vitriol* or Fragments of any brittle Body, viz. by a little Glass Bucket or Viol stopp'd, which may receive these Bodies, adding so much Water as will fill the *Spatiola* of the Fragments, up to the brim of the Glass; for which allowance must be made in the computation of the weight, both in the *Air* and *Water*.

*Sublimate* which wants its due proportion of  $\Psi$  will be this way discover'd, and *Roman Vitriol* mixed with *Alum*. It is here observ'd that  $\Psi$  is to water as 14 to 1. But the more easie and simple Method of weighing Bodies dissoluble in Water, is to use the thinner *Oils*, such as *Oil of Turpentine* of the first rise in distillation.

Having hitherto examin'd Bodies by Water and Oils, our Author proceeds to examine the weight of *Liquors* by weighing *Solids* in them. For if a heavy Body in Water lose so much of its weight as the quantity of Water weighs that is of an equal bulk to the Body, the proportion of the weight of all *Liquors* will be easily obtained. For instance, A piece of *Amber* of between 3 and 4 Drains weighed in Water  $6\frac{1}{4}$  gr. in *Red French Wine*  $8\frac{1}{2}$  gr. in *Brandy*  $17\frac{1}{8}$  gr. in rectified Spirit of Wine  $34\frac{1}{2}$  gr. This way may be apply'd to compare all sorts of *Liquors*, as Wine in the Must, Mature, decaying, vappid. Juices of Herbs, Beer, Sider, &c. But Acids are heavier than Water. Hence the Degrees of their acidity may be observed. Of Waters, Rain Water seems the lightest, and scarce a 1000th part difference discover'd in any of them. This is particularly apply'd to the famed Water of *Ganges*, tho' Travellers assert an extraordinary lightness in it.

In the last place the bulk of solid Bodies may be found out by this Method. For since a Cubical Inch of Water weighs 256 gr. and as much of *Oil of Turpentine* 221 gr. if a Body of any magnitude and irregular shape lose so much or more times that weight in Water or Oil, it is of a Magnitude equal to one or more Cubical Inches.

In the subjoyn'd Tract, our Author treats particularly of Minerals, and observes that *Emery* is as 4 to 1 to Water. Yet lighter than *Crystal*; so is *Fossil Amber*, *Sulphur Vive*, *English* and *Venetian Talk*. In an *American Talk* heavier than *Crystal*, a Metalline Substance was observ'd. *Fine Gold* is as 19 to 1 to Water. Hence any Fallacious Mixture us'd by the *Negrees* in *Gold-sand* may be observ'd. *Brass* is not quite half so heavy as *Gold*, &c. The whole Book is made up of curious Remarks and Experiments, such as usually proceed from its renowned Author, whose single Name is more than sufficient to recommend it to the perusal of the Studious Naturalist.