

Sulpicius Severus de B. Martino loquens ait, gloriam martyris eum adeo affectasse, ut, si licuisset, *equuleum sponte ascendisset*<sup>a</sup>; machinae figura ac ratio suspensionis, quemadmodum id facere potuisset, aperte satis ostendunt: in furca autem se ipsum nemo suspendere potuit.

In summa autem, cum tota hujusce rei probatio veterum scriptorum testimoniis praecipue nitatur, ut plura adferre, quae haud parva copia sese obtulerunt, supervacaneum duximus; ita nec pauciora ad plenam ejus explicationem sufficere existimavimus. Verum quaecunque de ea apud antiquos leguntur, unum aut alteri speciei supra descriptae facile tribui possunt. Qui ad auctoris igitur aetatem, et diversos loquendi modos diversis temporibus de equuleo usurpatos attenderit; nihil, opinor, difficultatis in posterum inveniet, quid de hoc tormenti genere statuere debeat; in quo explicando tot viri eruditi haecenus se frustra torserunt.

<sup>a</sup> Epist. 2.

V. *An Account of a Treatise entituled, Calculations and Tables relating to the attractive Virtue of Loadstones, &c. Printed Anno 1729.*

THE Author, (the Hon. Lord *Paisley*) by several Experiments very carefully made, has observed, that if two Loadstones are perfectly homogeneous, that is, if their Matter be of the same specific Gravity, and of the same Virtue in all Parts of one Stone, as in the other, and that like Parts of their Surfaces are cap'd or arm'd with Iron, then the Weights they sustain will be as the Squares of the Cube Roots of the Weights of the

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Loadstones; that is, as their Surfaces. Upon this Principle the Tables are formed. The first Column of these Tables is in common to the four following, and helps to shew how many times its Weight any Loadstone sustains.

In the second, third, fourth and fifth Columns, are the Weights of Loadstones in different Denominations. The second, entituled Grains, reaches Grain by Grain to 480 Grains, or one Ounce, and will serve for any Loadstone, whose Weight does not exceed one Ounce. The third reaches, by Penny-weights, up to two Pounds, or 480 Penny-weights, and therefore serves for any Stone that weighs not less than one Penny-weight, nor more than two Pound. The fourth Column reaches, by Ounces, up to forty Pounds, or 480 Ounces, and therefore will serve for any Stone not exceeding that Weight. The fifth serves from one to 480 Pounds. The sixth Column entituled, Weight sustained, is in common to the four preceding; and the Numbers in this Table, if they were divided by 10, would be the Squares of the Cube Roots of the Numbers in natural Order, from 1 to 480, as they are found in the Column of Pounds. But these Squares of the Cube Roots are here multiplied by ten, because a Loadstone of the very worst Sort, if it weighs but one Grain, will sustain ten Grains; and so these Tables, by simple Inspection, shew what Number of Grains any Loadstone of that worst Character would sustain, if the Stone weigh not more than 480 Grains, or one Ounce. The Numbers in the first Column entituled, How often its Weight, are proportional to the Reciprocals of the Cube Roots of the natural Numbers, and are form'd by dividing the Numbers of the sixth Column, by the

the corresponding natural Numbers, as they are found in the Column of Pounds.

For the greater Convenience of Calculation, his Lordship has added Tables; first of Decimal Parts for Penny-weights, Ounces, and Pounds, in order to lose as little as possible of the Fractions, in the several Calculations. The next are Tables of Grains, Penny-weights, Ounces, and Pounds, which readily shew how many of each Denomination are contained in the others. The Tables entituled, From Grains to Penny-weights, &c. and the others from the several Denominations to others, are of Use for carrying the Computation readily from any one Denomination to another: And lastly, the Tables at the Bottom of these last mention'd are of the like Use, for the ready finding the Value in Money of any Loadstone, from the Numbers proper to Grains, to Penny-weights, to Ounces, and to Pounds.

The Honourable Author then proceeds to explain the Use of these Tables, by Instances under each Denomination. Thus, if a Loadstone does not exceed one Ounce, or 480 Grains, the particular Weight of the Stone, with the Weight it sustains, being known, he reduces the Weight sustained to Grains, by the Help of the Table of Grains. Then looking into the Column of Grains for the Weight of the Stone, against it, in the Column of Weight sustained, he finds the Number of Grains, which a Stone of the worst Sort of this Weight would sustain; and then dividing the known Number of Grains which this particular Stone will sustain, by the Number of Grains expressed in the Column, the Quotient shews the Character of Goodness in the Stone propos'd; and by the Help of this Number may be known what Weight any other Stone

Stone of equal Goodness with this would sustain, let its Weight be less or more, provided it does not exceed one Ounce, or 480 Grains. For looking into the second Column for the Weight of the Stone, and having found against it, in the sixth Column, the Weight sustained by a bad Stone, if you multiply the Quotient above found, which shews the Character of Goodness, by the Number in the Tables expressing the Weight sustained, the Product is the Number of Grains this particular Stone will sustain.

If a Stone of the same Character weighs more than one Ounce, or 480 Grains, and less than two Pound, to know what Weight this will sustain, the Computation must be transferred from the Column of Grains to that of Penny-weights. Now since one Penny-weight is equal to twenty-four Grains, and the Weight sustained is to be expressed, not in Grains, but in Penny-weights, the former Number, which gives the Character of Goodness of the Stone for Grains, must be altered, to do the same thing for Penny-weights. Multiplying therefore this Number by the Reciprocal of the Cube Root of 24, the Number of Grains contained in one Penny-weight (and the Numbers in the Tables are formed accordingly) the Product gives the Number shewing the Character of Goodness in this Stone, which being found, the remaining Part of the Operation is the same as in the former.

If a Loadstone exceeds 480 Penny-weights, and is less than forty Pound, we must in like manner find the Number of the Stone for Ounces; which may be done either by the Number already found for Grains, multiplying it by the Number against Unit in the Table from Grains to Penny-weights, or by the Number for Penny-weights, multiplying it by the Number

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ber against Unit in the Table from Penny-weights to Ounces, and the Product is the Characteristick Number of this Stone. Proceeding therefore as in the first Instance, the Weight it will sustain will be found.

The Column of Pounds is only useful where a Loadstone's Weight exceeds forty Pound, or 480 Ounces, in which Case the same Method must be used as in the others.

To know how many times a Loadstone will take up its own Weight, multiply the Number proper to the Denomination in Use, by the Number in the first Column (entitled, How often its Weight) which is against the Weight of the Stone in the Column of that Denomination.

His Lordship closes his Account with explaining the Use of the Tables relating to the Value of Loadstones in Money; and this he supposes to be in the compound Proportion of the Goodness of the Stone, and of the Weight it sustains; because if two Loadstones take up the same Weight, the lesser is more valuable, as it does more in Proportion to its Bulk, and what better Rule to estimate the Value by, than the Goodness of the Stone? On the other Hand, if the Stones are in Nature equally good, but sustain different Weights, it is reasonable, that their Value should be according to the Weights they sustain. Both these Circumstances therefore being considered together, in order to find the Value of any Loadstone by the Tables, we must multiply the characteristick Number for the Stone, by the Number entitled, Value in Money, taking this Value in Money from the particular Denomination that the Stone comes under; and this Product will be the Value, *per* Ounce, of what the Stone sustains. Then multiplying

riplying this Value *per* Ounce, by the Number of Ounces the Stone sustains, will give the Value in Money of the Stone propos'd.

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VI. *An Account of a Book entituled, Jo. Frider. Weidleri Observationes Meteorologicae & Astronomicae, Annorum 1728 & 1729, &c. Wittembergæ, Anno 1729.*

THE Author, after dedicating his Tracts to the Royal Society, gives a Description of the particular Sort of Barometer, Thermometer, Hygrometer, and Hyetometer, which he made use of in the subsequent Observations. The first of these is a Diary of the Weather, from the Vernal Equinox of the Year 1728, to that of the Year 1729; containing the daily State of the Barometer, Thermometer, Wind and Weather, together with the Quantity of Rain during that Time. To this he annexes some *select* Meteorological and Astronomical Observations, which he describes more at large.

The first he takes Notice of is a remarkable *Halo* round the Moon, on *February 20, 1728*, at forty-five Minutes past Seven in the Evening, when the Moon was not far distant from the Meridian, and about her first Quarter. The Diameter of the *Halo* occupied about 47 Degrees, being extended from  $\epsilon$  in *Procyon* to *Capella* towards the West. Its Arch was  $4\frac{1}{2}$  Deg. broad, as far, for Instance, as  $\alpha$  and  $\epsilon$  in *Procyon* are from each other. Within it was red, and towards the Extremity was pale; exhibiting entire a beautiful Spectacle