

to the south. Only I would suggest two things, which if they tend not to clear what is proposed, they will further hold out how wonderful the loadstone and its properties are. First, upon the ordinary supposition, whereby these properties are explained, that the earth is as a great loadstone, on the surface and exterior parts whereof a great number of volatile screw-like particles, called the magnetic matter, do incessantly move, travelling from pole to pole alongst the surface of the earth, whereby the poles of the loadstone, and the point of the needle affected with its virtue, are obverted to the poles of the world; which supposition being made, we would know that this magnetic matter may not always have the same motion, but in some places it may be upward and perpendicular to the surface of the earth; so that in these places, where they thus move perpendicularly, the needle will not be determined to one point more than to another of the horizon, this matter alike affecting all the parts of the needle by its perpendicular motion; which the ingenious Rohault alledgeth as the reason why the compass serveth not the use of the Hollanders, when they have sailed far to the north in order to find out a new and shorter passage to the East Indies, their needle then not turning to the poles as it doth in other places, but alike to all the points of the horizon, the motion of the magnetic matter in these more northern places being in lines perpendicular to the surface of the earth: and so likewise it may fall out in other places, where a greater quantity of this magnetic matter riseth from the earth.

A second thing that I would take notice of is, that this magnetic matter in its passage from pole to pole meets with several iron mines, into which it goeth aside, so diverting its straight course between the poles, because it finds an easier passage through the pores of the iron than by passing through other places; hence the variation of the compass is judged to be, so much talked of by mariners, in some places greater, and in others less, accordingly as the magnetic matter is more or less determined by the several iron mines into which it turneth aside; now in some places it may so fall out, that there may be a greater quantity of iron, through which the magnetic matter passing, and from which it arising, may cause such a motion, whereby the needle not only inclines not to one point more than to another in the horizon, but also, by the magnetic matters ascending from and returning to the iron mines, it may produce such an irregular motion in the needle; and that there is a great quantity of iron in Zetland may be known by the remarkable variation of the compass there, for, as mariners inform us, when they sail by the south end of Zetland they find the variation to be but one point, but when passing the north end they find it varies two points, and upon this variation in directing their course to this or the other place they make their reckoning: which is very observable, that in less than a degree of latitude (for no more will the length of the isles of Zetland be) it varies a point of the compass, which must be according to the reason commonly assigned, because there is much iron in these isles, and more especially on the west side of the isle of Fetlor; for other places of the same isle have no such influence on the compass.

That yet much if not the greatest part of the difficulty remains I readily grant, and leaves it to the study of the learned and curious, and indeed in many things to acknowledge our ignorance hath been reputed no small part of wisdom, so hard it is to solve and unriddle nature's secrets, wherein the greatest lights have been benighted, the following often raising the foundations of the doctrines of the former: how wonderful are the works of God, that in wisdom he hath made them all; and how narrow and shallow are our capacities, that we cannot find out the works of God, even the most sensible and obvious; how thankful also should we be to God, who has vouchsafed to