

the *Danish* and *Saxon* tongues: but that can be no other then the natural effect of the two Nations being jumbled together in this part of the World. Our Borderers, to this day, speak a Leash of Languages (*Brittish, Saxon, and Danish*) in one; and 'tis hard to determine, which of those three nations has the greatest share in the Mottly Breed.

S^r,

Your, &c. W. N.

An account of the Latitude of Constantinople, and Rhodes, Written by the Learned Mr. John Greaves, sometime Professor of Astronomy in the University of Oxford, and directed to the most Reverend James Usher, Arch-Bishop of Armagh.

UPON Intimation of your *Grace's* desires, and upon importunity of some Learned Men, having finished a Table, as a key to your *Grace's* exquisite disquisition, touching *Asia* properly so called; I thought my self obliged to give both you and them a reason, why in the situation of *Byzantium*, and the *Island Rhodus*, (which two eminent places I have made the *ὠκεανῶν* and bounds of the Chart,) I dissent from the traditions of the Antients, and from the Tables of our late and best Geographers, and consequently dissenting in these, have been necessitated to alter the Latitudes, if not Longitudes, of most of the remarkable City's of this discourse. And first for *Byzantium*, the received Latitude

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of it by *Appianus*, *Mercator*, *Ortelius*, *Maginnus*, and some others, is 43 degrees and 5 minutes. And this also we find in the *Basil* Edition of *Ptolemy's* Geography, procured by *Erasmus* out of a Greek MS. of *Pettichius*. The same likewise is confirmed by another choice MS. in Greek, of the most learned and judicious M^r *Selden*, to whom for this favour and several others I stand obliged. And as much is expressed in the late Edition of *Ptolemy* by *Bertius*, compared and corrected by *Sylburgius*, with a Manuscript out of the Palatine Library. Wherefore it cannot be doubted, having such a cloud of witnesses, but that *Ptolemy* assigned to *Byzantium*, as our best modern Geographers have done, the Latitude of 43°. 5'. And this will farther appear, not only out of his Geography, where it is often expressed, but also out of his *μεγάλη συντάξις* or *Almagest*, as the *Arabians* term it, where describing the Parallel passing διὰ Βυζαντίου, he assigns to it 43°. 5'. What was the opinion concerning *Byzantium* of *Strabo* preceding *Ptolemy*, or of *Hipparchus* preceding *Strabo*, or of *Eratosthenes* ancienter, and it may be accurater then all of them, (for *Strabo*, (Lib. 2.) calls him τελευταῖον περὶ γεγραμμένον περὶ τῆς γεωγραφίας) though *Tully* (Lib. Ep. ad *Att.*) makes *Hipparchus* often reprehended *Eratosthenes*, as *Ptolemy* after him doth *Marinus*, their writings not being now extant, (unless those of *Strabo*.) cannot be determined by us. But as for *Strabo*, in our inquiry, we can expect little satisfaction; for his description of places, having more of the Historian, and Philosopher, (both which he hath performed with singular gravity and judgement,) then the exactness of a Mathematician, who strictly respects the Position of places, without inquisition after their nature, qualities, and Inhabitants, (though the best Geography, would be a mixture of them all, as *Abulfeda*, an *Arabian* Prince in his *Rectification of Countries* above Three Hundred years since hath done.) I say

say for these reasons, we can expect little satisfaction from *Strabo*, and less may we hope for from *Dionysius Afer*, *Arrianus*, *Stephanus Byzantinus*, & others. Wherefore next having recourse to the *Arabians*, who in Geography deserve the second place after the *Græcians*, I find in *Nassir Eddin* the Latitude of *Byzantium*, which he terms *Buzantiya*, and *Constantiniya*, to be 45 degrees, and in *Ulug Beys* Astronomical Tables the same to be expressed. *Abulfeda* chiefly follows four Principall Authors as his Guides, in the compiling of his Geographical Tables, those are, *Alfaras*, *Albiruny*, *Hon Saiid Almagraby*, lastly *Ptolemy*, whose Geography he terms a description of the *Quadrant*, (or the fourth part of the Earth) inhabited; and all these, according to his assertion, place *Byzantium* in 45 degrees of Latitude. And here it may justly be wondered, how this difference should arise between the Greek Copies of *Ptolemy*, and those translated into *Arabick* by the command of *Almamon*, the Learned Calife of *Babylon*; for *Abulfeda* expressly relates, that *Ptolemy* was first interpreted in his time, that is, in the computation of *Almecinus* in *Erpenius's* Edition, and of *Emir Cond* a *Persian* Historiographer, more then 800 years since: Concerning which *Abulfeda*, writes thus, *This Book* (discourfing of *Ptolemy's* Geography) *was translated out of the Græcian Language into the Arabick, for Almamon*: And in this I find (by three fair MSS of *Abulfeda*) *Byzantium* to be constantly placed in 45°. and as constantly in the Greek Copies in 43°. 5'. But in the *πρόχρησις* *ναυόνες* of *Chryfococca*, out of the *Persian* tables, (made about the year 1346 in *Scaliger's* Calculation,) it is placed in 45°. To reconcile the difference between the *Greeks* and *Arabians* may seem impossible, for the common refuge of flying to the corruption of numbers by Transcribers, and laying the fault on them, which sometimes is the *Authors*, will not help us in this particular; seeing the *Greek* Copies a-

gree amongst themselves, and the *Arabick* Copies amongst themselves. The best way to end the dispute, will be, to give credit concerning the Latitude of *Byzantium*, neither to the *Greeks*, nor *Arabians*. And that I have reason for this assertion, appears by several observations of mine at *Constantinople*, with a brass Sextant of above 4 foot Radius. Where taking, in the Summer Solstice, the Meridian Altitude of the Sun, without using any *πρόσοψαίσεις*, for the Parallax, and refraction, (which at that time was not necessary,) I found the Latitude to be 41 degrees 6 minutes. And in this Latitude in the Chart I have placed *Byzantium*, and not in that either of the *Greeks*, or *Arabians*. From which observation, being of singular use in the Rectification of Geography, it will follow by way of Corollary, That all Maps for the North East of *Europe*, and of *Asia*, adjoining upon the *Bosphorus Thracius*, the *Pontus Euxinus*, and much farther, are to be corrected; and consequently the situation of most Cities in *Asia* properly so called, are to be brought more Southerly then those of *Ptolemy*, by almost two intire degrees, and then those of the *Arabians*, by almost four.

Concerning *Rhodes*, it may be presumed, that, having been the Mother, and Nurse of so many Eminent Mathematicians, and having long flourished in Navigation, by the direction of these, and by the vicinity of the *Phenicians*, they could not be ignorant of the precise Latitude of their Country, and that from them *Ptolemy* might receive a true information. Though it cannot be denied, but that *Ptolemy* in places remoter from *Alexandria*, hath much erred. I shall only instance in our own Country, where he situates *Λονδίνιον*, that is *London*, in 54 degrees of Latitude; and the *Ἰνσουλὴν* or the middle of the *Isle of Wight*, (which in the printed Copies is falsely termed *Ἰνσουλὴν*, but in the MSS. rightly *Ἰνσουλὴν*;) in 52. degrees and 20 minutes of Latitude.

tude. Whereas *London* is certainly known to have for the Altitude of the Pole, or Latitude of the place, only 51 degrees and 32' minutes: and the middle of the *Iſle of Wight* not to exceed 50 degrees and some minutes.

But in my judgement *Ptolemy* is very excusable in these and the like errors, of several other places far distant from *Alexandria*; seeing he must for their position necessarily have depended either upon relations of Travellers, or observations of Mariners, or upon the Longitude of the day, measured in those times by *Clepsydrae*: all which how uncertain they are, and subject unto error, if some Celestiall observations be not joyned with them, and those exactly taken with large Instruments, (in which kind the Ancients have not many, and our times, (excepting *Tycho Brahe*, and some of the *Arabians*) but a few,) I say no man, that hath conversed with modern travellers, and Navigators, can be ignorant. Wherefore to excuse these errors of his (or rather of others fathered by him) with a greater absurdity, by asserting the Poles of the World since his time to have changed their site, and consequently all Countries their Latitudes, as *Mariana* the Master of *Copernicus*, and others after him have imagined: or else to charge *Ptolemy*, being so excellent an Artist, with ignorance, and that even of his own Country, as *Cluverius* hath done, (from which my observations at *Alexandria*, and *Memphis*, may vindicate him,) the former were too great a stupidity, and the latter too great a presumption. But to return to *Rhodes*: an Island (in *Eustathius*'s comment upon *Dionysius*'s *ᾠδῆς*) of 920 furlongs circuit, where according to *Ptolemy* the Parallel passing *διὰ ῥόδου*, hath 36 degrees of Latitude, and so hath *Lindus*, and *Ἰηλουσός* the chief Cities of the Island; the same is confirmed by the MS. but where the printed Copy, and *Eustathius* read *Ἰηλουσός*, which *Mercator* renders *Talyssus*, the MS renders *Ιλιός*.

Abulfeda in some Copies situates the Island *Rhodes*, (for he mentions no Cities there) in the Latitude of 37 degrees, and 40 minutes: and the Geography of *Said Ibn Aly Algiorgany*, commended by *Gilbertus Gaulmyn*, in 37 degrees, if it be not by a transposition in the MS. of the numerical Letters in *Arabic* 37 for 36, which by reason of their similitude, are often confounded in *Arabick* MSS. By my observations under the Walls of the City *Rhodes*, with a fair brass Astrolabe of *Gemma Frisius*, containing 14 inches in the diameter, I found the Latitude to be 37° and 50'. A larger Instrument I durst not adventure to carry on shore in a place of so much jealousy. And this Latitude in the Chart I have assigned to the City *Rhodes*, (from the Island so denominated, upon which on the North East side it stands situated,) better agreeing with the *Arabians*, then with *Ptolemy*, whom I know not how to excuse.
