

Anguli BCDEFG, in planum per Centrum (Axii ad Angulos rectos) projiciantur. Non quod illi omnes sint in eodem plano; sed BDF sunt in plano superiori quod ab A (polo proximo) distat Axis triente; reliquiq; CEG, in plano huic parallelo quod tantundem distat ab opposito polo latente. Sed omnes hi Anguli, demissis in planum illud per centrum perpendicularibus projecti, formabunt in illo hexagonum regulare BCDEFG. Cui si intelligatur Circulus circumscriptus; non erit ille, Circulus Sphæræ maximus (quia puncta sic projecta non pertingunt ad extremum ambitum Circuli Sphæræ maximi per centrum;) sed qualis ille est qui per BDF, vel per CEG, transit. Cujus itaq; Diameter est $=\sqrt{\frac{8}{7}}$. Et $PB = \sqrt{\frac{1}{6}}$. Et $PG = \sqrt{\frac{1}{2}}$. Et $BM = \sqrt{\frac{1}{2}} - \frac{1}{2}$. Et $MQ = \sqrt{2} - \frac{1}{2}\sqrt{3}$. Cum itaq; $MH = \frac{1}{2} = 0.500$. (semilatus incumbentis Cubi transituri) minus sit quam $MQ = \sqrt{2} - \frac{1}{2}\sqrt{3} = 0.548 +$; Manifestum est (facto foramine HIKL) transire posse cubum incumbentem, perforato æqualem.

VIII. Account of Books. 1. *Refractio solis in-occidui in septentrionalibus oris jussu serenissimi ac potentissimi Principis Caroli II. Suecorum, Gothorum, Vandalorum, &c. Monarchæ Clementissimi, circa Solstitium æstivum, 1695. aliquot observationibus Astronomicis detecta. Holmiæ in 4°. Sweedish and Latin, and now Translated into English, and Printed for Ed. Castle next Scotland-Yard Gate by White-Hall, in 8°.*

IN Chap. I. the Author, J. Bilberg, gives an Account of the King of Sweden's Observation, which was, that being at Torneo in Westro-Bothnia, situated in $65^{\circ} 43'$. Lat. he

he went up by Ladders into a Tower or Steeple in that City, 100 Foot high, where he, and those with him, saw the Sun on the 14th of *June*, 1694. till 11 Hours, 53 Min. at Night, when a little Cloud covering it, it disappear'd, and at 12 Hours 6 Minutes, it shined with most Bright Rays rising out of the Cloud. The Natives used to see the Sun all Night, when 'tis Fair Weather at this time of the Year. This Observation was wrote down by the King, and he used to talk with Mathematicians about it at his return; who telling him much depended on the Situation of the Place, he resolv'd to send the best Mathematicians of his Kingdom thither next Year, to note and relate every thing exactly.

In the Second Chapter he tells us, he, the Author, and one *Andrew Spole*, Mathematick Professor at *Upsal*, were sent into the North Countries, and designed to go further North than *Torneo*; they went out the 21st of *May*, O. S. and after Sixteen Days hazardous Travelling, by reason of the Difficulties of the Ferries, Rivers and Ways, which were but just thawed, and not yet firm, came to *Torneo*. This Town has considerable Traffick with *Lapland*, *Finland*, and *Muscovy*, whither they go in Winter with Rain Deer. The first Night the Sun was hid in a Cloud at 11 h. 15'. and 45". They observed the Latitude of the Place to be 65°. 43' and that it was 4°. 50'. more Eastwardly than *Stockholm*, which was observ'd by Three Pendulum Clocks and Watches carried with them, agreeing with the Maps. The Variation of the Needle 7°. West.

In *Chap. III.* we are told they observ'd in the Night between the 10th and 11th of *June*, $\frac{3}{4}$ of the Sun and its Center above the Horizon, only $\frac{1}{4}$ under, and that not only in the Turret, but also on the Ground where the North Prospect appeared clear (which came from Refraction). They went Northward Ten Miles, through a River, where

where were Mountains of Ice, and in a Town call'd *Pello*, there observed the Sun all Night Two Diameters above the Horizon. The 14th of *June* they went to *Kenges* Copper and Iron Works, where they observed it Three Diameters above the Horizon, the Place being $66^{\circ} 45'$ Lat. by Observation. They were hindered to proceed further, the Roads into North *Lapland* being impassable except in Winter. They got the Metals of the Country, and a piece of Magnet. They find them in the *Swedish* Iron Mines, but the *Lappish* have greatest Vertue of any the Author ever saw. They return'd by many Precipices through a Desert Country only here and there an Inhabitant on the Banks side, (who live by Fishing, and the spade) to *Torneo*, where they made an Observation for the Latitude of the Place, which agreed with the other.

In the Fourth Chapter he treats of Refractions, and how they come, and are greater in some Places than others, through the different Constitution of the Air. Nearer the Poles they are the greater, so that the *Dutch* in *Nova Zembla*, saw the Sun through Refraction, when it ought to have been 4° under the Horizon, by ordinary Refraction Tables, he asserts this to be the Reason of their seeing the Sun at *Torneo*, which ought to have been $47'$ below the Horizon. He recounts other Observations, and makes them plain with proper Schemes.

In the Fifth Chapter he treats of the *Frigid Zone*; and says, at *Torneo* they were *Periscii*, having the Shadow go round them. In Sea Towns they make Observations better than at Land, because of the Interposition of Trees and Mountains. The Sun ripens their Corn in Six or Seven Weeks, which they saw in the Grass in *West Bothnia*, which in *June*, passing, was come out of its Stalk, a Month after in their Return was mowed. The Inhabitants live long. They have seldom Thunder.

In the Sixth he treats of the Latitudes of Places they observed in their Return, as *Cublea* to be $65^{\circ} 25'$. and the Magnetick Variation was 6° . West. At *Schelesta*, Lat. $64^{\circ} 37'$. Variation the same. At *Uhma*, Lat. $63^{\circ} 48'$. At *Sodechamn*, $61^{\circ} 12'$. At *Geffle*, $60^{\circ} 31'$. *Lomesbeden*, $60^{\circ} 41'$. *Fahlun*, $60^{\circ} 32'$. *Upsal*, $59^{\circ} 54'$. *Var*, 8° . They came to the King at *Kongfor*, in $59^{\circ} 34'$. Lat.

In the Seventh Chapter he treats of the Figure of the Earth, Variation of the Needle, and Difference of Refractions under the Pole and Equator. He observes the Places where they travel'd, all laid too Northerly in the Maps; and discourses of the Figure of the Globe, which he is apt to believe is not Spherical: and of the Variation of the Variation of the Needle.

2. *De Fontium Mutinensium admirandâ Scaturigine Tractatus Physico Hydrostaticus, Bernardini Ramazzini, in Mutinensi Lyceo Medicinæ Professoris. Mutinæ 1691. in 4to. Translated into English, and illustrated with many curious Remarks and Experiments, by the Author, and Translator, Dr. Rob. St. Clair. London, Sold by W. Newtown in Little Britain. 1697. in 8vo.*

THE Author *Ramazzini* begins his Treatise with a Description of the Wells, and in the Beginning he tells us, that in any part of the Plain of *Modena*, one cannot miss by digging Sixty Three Foot deep to have an excellent Spring of most pure Water That in digging the first Fourteen Feet, they met with the Footsteps of an old City, Causeways of Flint, Tradesmens Shops, the Pavements of Houses; which he says, cannot be attributed to the City's being Ruin'd and Rebuilt, for all the Plain is of the same Height with the City.

Secondly,

Secondly, Below that is Fenny or Marshy Ground, full of Reeds, which continues till they come to the Depth of Twenty Eight Feet; where they *Thirdly*, Meet with a Bed of Clay Eleven Feet deep. Then *Fourthly*, appears a Marshy Ground, not unlike the former, and *Fifthly*, a Bed of Clay, but not so thick as the former. *Sixthly*, a Bed of Marshy Ground. *Seventhly*, A Bed of Clay and Sand, mixt with Sea Products, this last Bed they pierce with an Auger, upon the pulling up of which, the Water flows up with so great Violence, that it casts up Sand and Pebbles that sometimes weigh Four or Five Ounces.

Before they bore this last Bed, they hear a remarkable Murmur and Noise, which upon the Authors stamping on the Ground with his Foot, did encrease to that Degree, that he fearing all would suddenly fall about his Ears, ordered himself quickly to be pull'd up.

Upon the First rising of the Water in one of these Wells, the Water settles in the next Wells, the Number of these Wells is such, as to make a Canal big for carrying Vessels in which they go to *Venice*.

Chap. II. He says, that these Waters are running Waters, which he proves by the Noise they make before their boring, and by their sudden rising after the Auger is drawn out, nor can this be occasion'd by the Pressure of the Ground squeezing up the Water at the open Hole, for so the Ground would fall into the Place of the Water that rises up which yet is not observed; but he derives them from a Cistern in the Appenine Mountains, that runs through a of Sand lying under the last Bed of Clay, which the Author in this and the Fifth Chapter illustrates with many curious Experiments, that make his Opinion highly probable.

Chap. III. He proves, that this Source cannot be from a Subterraneous River, on which Occasion he makes
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mention of the River *Timavus*, that Ebbs and Flows as the Sea does. Which wonderful Phænomenon is better explain'd by the Translator, than seems ever yet to have been accounted for.

Chap. 4. Treats of the antient State of the Country on this and the other side of the River *Po*.

Chap. 5. Treats of the Nature and Condition of this hidden Spring.

Chap. 6. The Progress and End of the Waters is inquired into, and a Reason is given of the use of things, which are observed in the digging of the Wells.

Chap. 7. Contains very curious Experiments about the Motions of Fluids tending highly to illustrate the Subject in Hand; and in this he gives Proof how much those that take Pleasure in framing Hypotheses, might be assisted in making more rational Conjectures than they do, if they were well acquainted with experimental Philosophy.

Chap. 8. Contains many Remarks about the excellency and goodness of the Wells of *Modena*.

With the Book translated, are published several Observations and Experiments by the Translator, *Dr. Rob. St. Clair*, who formerly was Operator and used to try Experiments for the Honourable *Robert Boyle*, Esq.

E R R A T A.

PAG. 723. l. 31. for *have* read *half*. p. 724. l. 5. for *Nerf* read *Nerve*. l. 24. for *Parts* read *Lines*. l. 30. for *Parts* read *Lines*.

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