

Caput I. Newton and the *praefatio*

Isaacus Newton, Eques Auratus. Sir Isaac Newton; how may we describe him?

He was a mathematician, physicist, astronomer, alchemist, theologian. In his own words, he referred to himself as a “natural philosopher” apropos; **Philosophiae Naturalis Principia Mathematica, Mathematical Principles of Natural Philosophy**

Latin in the age of Enlightenment through Newton’s writings is the theme of this three-part blog

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Young Isaac’s formative years

Isaac has two birth dates. Under Old Style notation he was born 25 December 1642. From Julian to Georgian counting; New Style, his birth day is 4 January 1643. Death of his father, re-marriage of his mother, sent to live with his maternal grandmother, Isaac about age 12 is sent to The King’s School in Grantham. Two subjects were taught, Latin and ancient Greek. As for mathematics, it is presumed to have been taught. His mother’s second husband dies, with Isaac returned home to Woolsthorpe-by-Colsterworth, a hamlet in Lincolnshire. Henry Stokes, the master at The King’s School journeys to Woolsthorpe Manor. He pleads his case, allow Isaac to return to studies. Under Master Stokes, Isaac excels and graduates top-of-the-class, in spite of incessant school-yard bullying

Isaac’s university student life

Isaac, age 21; was admitted to Trinity College, Cambridge University in June 1661. Lacking funds, he earns his keep by odd-jobbing. Three years later he is awarded a scholarship which allows him to complete his Bachelor and Master degrees respectively in 1665 and 1668. Between these years, the Great Plague of 1665-66 sweeps England. In response to the contagion, Cambridge closed her doors. Isaac returned to Woolsthorpe Manor and pursues own studies. He investigated the binomial theorem which later became calculus. In addition, he also wrote papers on optics and gravitation. The salient thrust of the pandemic years was his vigorous correspondence with many of the era’s leading thinkers in mathematics, astronomy, and philosophy. He returned to Cambridge in April 1667, and in October was elected a Fellow of Trinity

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For England, to hold her own against Europe; publishing in Latin is astute

William Harvey, physician and anatomist graduated from **Gonville and Caius College, Cambridge** in 1593. He published his celebrated work **Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus, An Exercise in the Anatomy of the Movement of the Heart and Blood in Animals** in 1628

De Motu Cordis was published in Frankfurt to coincide with the annual book fair, to achieve widest distribution. Harvey was called “crack-brained” for his Latin. Europe reads Chapter IX, the definitive explanation of blood circulation in the **corpus**

Newton and Harvey : each man employs New Word vocabulary to express the Enlightenment. Newton’s *Preface* is quoted :

Nos autem non artibus sed philosophiae consulentes, deque potentiis non manualibus sed naturalibus scribentes, ea maxime tractamus, quae ad gravitatem, levitatem, vim elasticam, resistentiam fluidorum et eiusmodi vires seu attractivas seu impulsivas spectant: et ea propter, haec nostra tanquam philosophiae principia mathematica proponimus. Omnis enim philosophiae difficultas in eo versari videtur, ut a phaenomenis motuum investigemus vires naturae, deinde ab his viribus demonstramus phaenomena reliqua. Et huc spectant propositiones generales, quas libro primo et secundo pertactavimus. In libro autem tertio exemplum huius rei proposuimus per explicationem systematis mundani. Ibi enim, ex phaenomenis caelestibus, per propositiones in libris prioribus mathematice demonstratas, derivantur vires

gravitates, quibus corpora ad solem et planetas singulos tendunt. Deinde ex his viribus per propositiones etiam mathematicas, deducuntur motus planetarum, cometarum, lunae et maris. Utinam cetera naturae phaenomena ex principiis mechanicis eodem argumentandi genere derivare liceret. Nam multa me movent, ut nonnihil suspicer ea omnia ex viribus quibusdam pendere posse, quibus corporum particulae per causas nondum cognitatas vel in se mutuo impelluntur et secundum figuras regulares cohaerent, vel ab invicem fugantur et recedunt: quibus viribus ignotis, philosophi hactenus naturam frustra tentarunt. Spero autem quod vel huic philosophandi modo, vel veriori alicui, principia hic posita lucem aliquam praebeant.

Isaac Newton. Philosophiae Naturalis Principia Mathematica. Praefatio