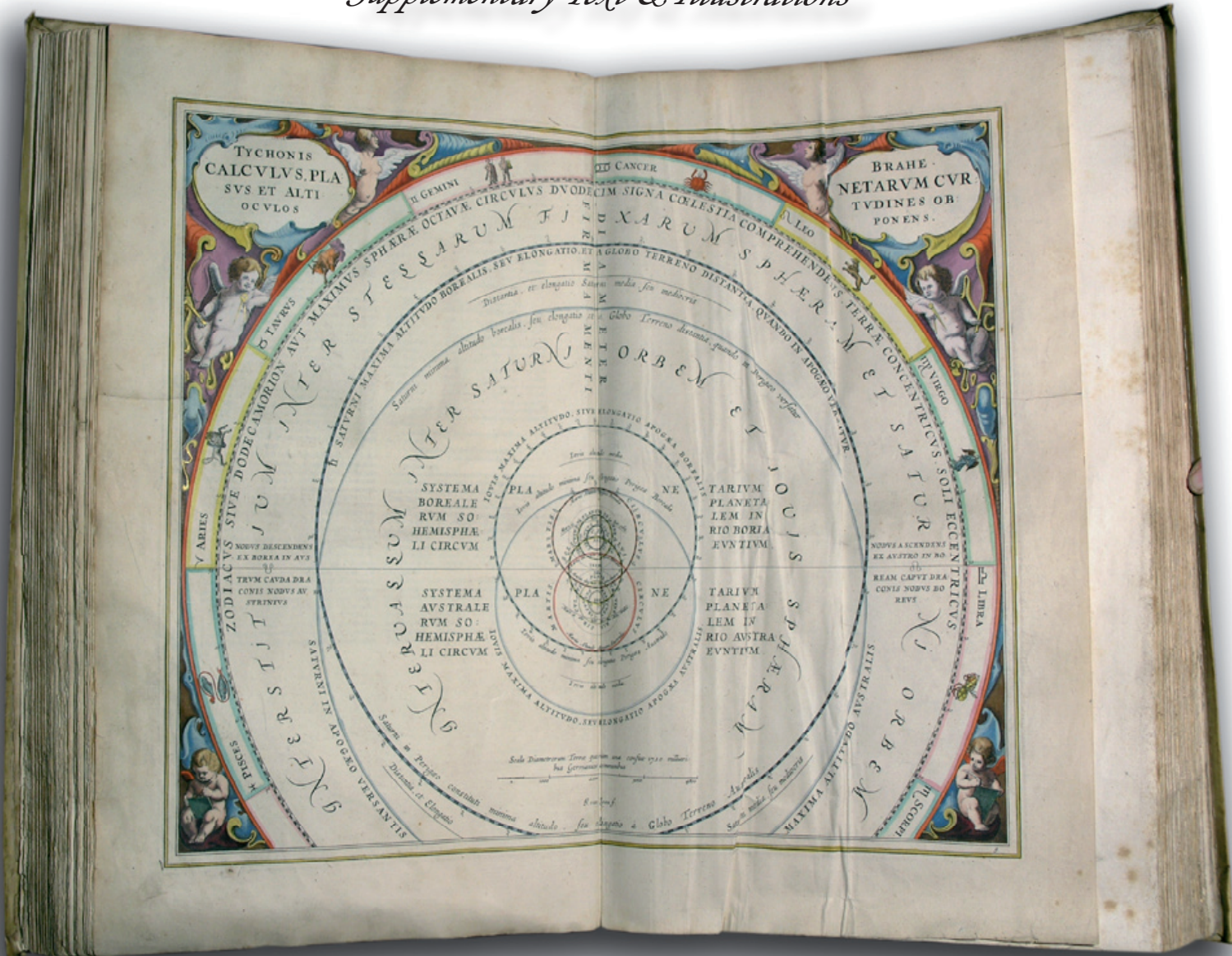


Science, Time & Community

A Digital Exhibition

Supplementary Text & Illustrations



The University of Dublin, Trinity College

Department of History

M.Phil. in Reformation
& Enlightenment Studies



The **PROJECT** researched by the M. Phil. candidates in Reformation and Enlightenment Studies 2005/6 concentrated its inquiry on a specific aspect of early modern cosmology: the fusion and interchange of

1. **perceptions of time** (including eschatological dimensions, age of the world, end of creation) and the use of predictors of the future by means of astronomy/astrology and the interpretation of monstrous births
2. attempts to build a golden age, an ideal society, the creative imagination of improvers and ways in which **early modern science** assisted or cut across those attempts: mathematical principles to be identified in the harmony of the spheres and applied to human construction (such as fortifications and ideal cities), alchemy and geology,
3. the impact of both - perceptions of time and exploration of early modern science - on the various experiences of **community** life and its transformation.

While most illustrations utilise the holdings of the **Long Room** section of the Library, other major research institutions and private collections have also provided materials.

**Anzaygung.vnd Aufzlegung.der
grossen constellacion/vnd anderer aspectten/
so sych in dem 1 5 24.jar/in dem
Februario erbeben werden/
durch Sebastian Räß
mar zü samenn
gelesenn.**



**D got byß vns gnädig zü dyser zeyt
Wañ wir schreyen zü dir/erhö: vns wañ es ist zeyt**

The digital exhibition begins with the young Emperor Charles V riding in procession to open his first imperial Diet at Worms in 1521. The orderly procession that assigned all the representatives of the empire their proper place was intended as a persuasive display of authority and a pledge to usher in a **golden age of harmony, peace and order**. This staging of Charles' reforming intention was suddenly interrupted by a hawkers who held up a **broadsheet proclaiming the end of the world**. It was to occur as a result of the conjunction of twenty planets, sixteen in the 'watery sign' of Pisces. Charles V took the warning seriously enough to encourage the princes of the realm to consult their astrologers about the prediction. A 'flood of pamphlets' was published in response. **Mathematical astronomy seamlessly crossed over into judicial astrology**. While there was criticism of such precise predictive practice, astrology remained in place as a valid predictor throughout the early modern period and beyond. **Monstrous births** were accepted as even more powerful and reliable indicators of change. Since God had created a 'good world' any birth-deformity could be read as a **divine signal that had to be carefully decoded**. Deformed creatures were considered public property to be exhibited for all the world to see. The meaning of such signifiers was explored by Sebastian Brant for pro-Habsburg propaganda as well as by Martin Luther and Philip Melancthon for religious polemics. 'Scientists' merely recorded 'monstrosities' and deformities as specific instances of creation on the assumption that to know the parts would lead to an understanding of the whole.

Warhafftige Contrafractur einer wunder geburt / so inn der
 Churfürstlichen Stadt Heidelberg / durch Caspar Besslers & heliche Hausfrawen
 Katharina / geboren ist / am Pfingstag / des sechzig A. D. 1587. Jars.

IOHANES.
 Bedeut das heilige
 Euangelium.

15



HIERONYMVS.
 Bedeut der Väter
 auff sagung.

44

Vergleichung vnd einigkeit Teutscher Nation.

Da Gott erschuff Himmel vnd Erd
 Den Mond vnd alle Sternen werd
 Gab er ein jeden krafft vnd schein
 Zu werden in den Menschen ein
 Das ist das geseit verkerret art
 Durch misburt offte gesehen ward
 Die gewonlich etwas gros hond deus
 Hat man erfaren mit der zeit/
 Also segund in diesem jar
 Da man jalt nach Christi geburt forwart
 Taufent funffhundert vierzig vier
 Ein Kinde mit wunderbarer siet
 Key Haupt / vns Brust / vier Arm vier fuß /
 In allen zweifelt mit fast süß
 Katharina Besslers hat geboren
 Ir leben schiet daran verlorer /
 Kein schmidts weib Caspar Bessler gnant
 Von allen Menschen wol bekant
 In des löblichen Churfürsten stadt
 Pfalsgraf Friderich er namet hat
 Zu Heidelberg am Leder rahl
 Auf dem Reichstag zu Speier erstal
 Gleich wundermet auff den Pfingstag
 Der Doch vnd Aldern ward gros sag
 Von dieser wunderbaren gestalt
 Die ward zu geschicht den Justizen balde
 Gang eigenlich ab contrasct
 Als die gemalt vor augen stet /
 Wie wols manch spottu gelacht ring
 Der mit gros adoring hat der ding
 Das Gott vns stels vil wunder dar
 Wemigt / bezeichnung nemen war

Vnd adrens natürlicher weit
 Würde Gott auch nit gegeben preis
 Wie wol dein wuer geurtreie viel
 Nim ant weis mer triffte redres zil/
 Bey mir jedoch hab den verstande
 Weil nun lang zeit inn Teutschem Lande
 Durch Gottes wort spaltung kommen sein
 Das sich Geistlich vnd Weltlich Stend
 Gerent vnd abgsondert han /
 Das man lang sorgt würdet nit jergan
 Der Teuffel wiet seinen samen sein
 Inn dem Teutschland ein frem auffwachen
 Das nit allein das Christlich klar
 Sonder Land / stetz / reichthum vnd gut.
 Solt lengst zu trüern gangen sein
 Wo Gott mit bett gesehen die n
 Den kommen Keiser Karl gande
 Zu vns gen Speier inn Teutschland /
 Der hat zum friben schwert ein gestekt
 Wellich vnd blig die sach zu bedt /
 Vnd gleich wie an dem wunder kind
 Die zwen leib jamen gheffert sind /
 Als der Keiser gert / schiedt.
 Das sich Teutschland zusammen hiele
 Chor gert wie die ehren weib
 Aus vil Reichs gubern in odt ein leib.
 Tut minder der Churfürst am Rhein
 Pfalsgraf Friderich legt sich auch drein /
 Chur wie ein kommer friben süß
 Dem nach concorbi Teutschlands büß
 Sein nam bringe solche mit im gleich
 Das er sey in dem friben reich.

Drumb Gott diß wunderbar figur
 Laß Kommen in anfang sein Chur
 In seiner stadt / will das mit deuten
 Das (ob Gott will) inn künfftig zeiten
 Durch in Friderich ein frib werd machen
 Das dinglegt werd all spennig sachen.
 Gottes wort in Teutscher Nation
 Werd sichern frib vnd furegang hon /
 Denn durch das selb wiet man newgeborn.
 Vil glübe in ein leib erkorn.
 Auch ist solche wunder am Pfingstag
 Geschehen / daran Christus pfag
 Den heiligen geist sein Boten sende:
 Der wöll sich auch von himel wende
 Die seiner krafft ein leitung eben
 Das er on forsch thue vnderflon
 Seh an des böchßten Gottes ehr
 Zu den er stib mit bergen ker
 Das Keiser / König / Potentaten
 Litus mala jedoch dahin geraten /
 Das man Gottes wort vnder hand
 So würd geholfen Teutschland
 Von allen grollen / grimmen / gramen
 Wicht man des friben weg bald hammen /
 Das ein auffbrüt würd frib gestafft:
 Das heil die gmalig Gottes krafft /
 Der Teutschden gnuet werd jamen greiche
 Wünsch die Heinrich Vogther in sein dichte.
 1587.
 In trauf verfertigen durch Gemalt Vogther
 vnd Caspar Besslers Maler sua vntere.
 Herman Gießereich.



So wissen Ein wunderliche vñ erschrocklich ding / das in der jert Als man jalt nach Christi vnser herren gepurt /
 In der Stadt Speier genant. Vier meyl von Türensberg vnder gewoßten der herrschung des hochwirdigen herren /
 herren Kaspar Besslers zu Speier von einer frawen eines bytten geboren solches kyndt. Ein haubt gehabt mit zweyen
 angfichten. Drey hende / zwo gestrucht auff yetlicher seitten gewonlich eyne. Vñ die dritten zwischen den schultern des
 rüchs. Einen couer byß auff die zwo frewelich scham auff beyden seitten mit vier menschlichen peynen vñ süßen. War
 nach geschehen durch den würdigen herren hantlichen von Porger. Der selbigen jert obgemelt Stat Spalt Pfarrer.
 Nach hat vñ vnter des durchleuchtigen hochgeborn fursten vñ herren herren Friderich Marggreu zu Blanden
 burg. Auch herren Johan Zmer darselbst juregel im pfarhoff / vñ ander vil mer die byß wund erachtliche Creatur gefe
 hen haben. vñ vnderseht in aller gestalt wie es gepoßen ist in ob gemelter Stat.

Anzeygung wunderbarerlicher
 geschichten vnd geburt dises XXXI. Jars
 zu Augspurg geschehen. &c.



So wissen / das newlicher tag zu Augspurg ein schwangere fraw /
 So zur gepurt nider kumen / drey wunderbarerlicher / vnnatürlicher /
 selzamer / vngewonlichen / vnd vormalis vnethöiten / noch der gleichen
 vnsömlichen gestalt / gesehener frächten / auß irem leyb in dise welt ge
 boreu und gebracht hat.
 Die erst creatur vnd geburt / so auß irem leyb kumen / ist gewesen ein
 ainich menschen haubt / one leyb / hende / vnd fuß / in einem heitlin / oder
 belglein gelegen / Wie danñ dise figur zu erkennen gibt vnd anzeygt / &c.
 Die ander vnnatürlich / vngestalt geburt vnd figur vbetrefenlich
 wunderbar / hat ein haubt vñ mund zugleich einem fisch / Nemlich wie
 ein hecht / seinen von aller glidmaß ganzem leyb / auff form vnd gleych
 nus eines froschs / vñ vor seinem hindern / als ein Leder / einen schwanz
 gehabt.
 Die drit vnsömlich geburt / so von der frawen leyb komen / ist gleich
 gewest einem jungen schweyn / Vnd ist dise vnd auch die andern / als
 pald sie an tag komen / gestorben.
 Was aber dise Monstra vnd widernatürliche frächten vnd wunder
 bedeytten vnd anzeygen / das wayß allein Got im himel / Der wende
 alle ding durch sein götliche barmhertzigkeit zum besten / &c.

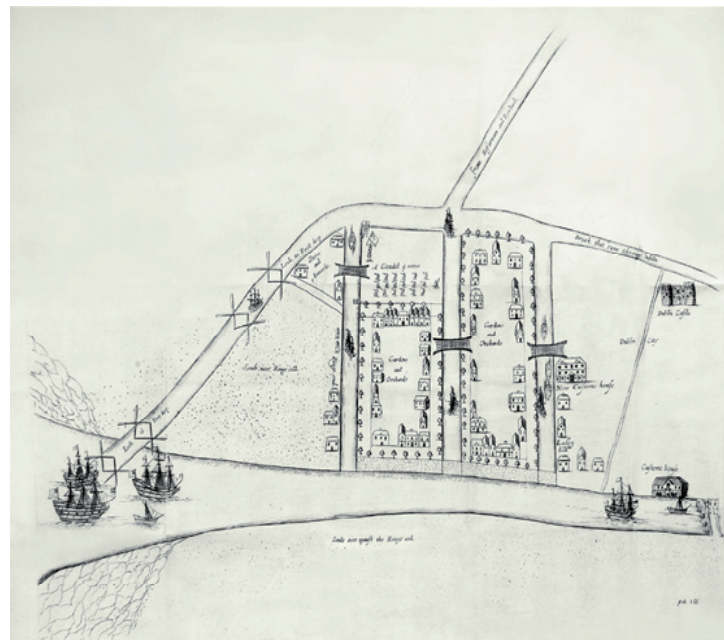
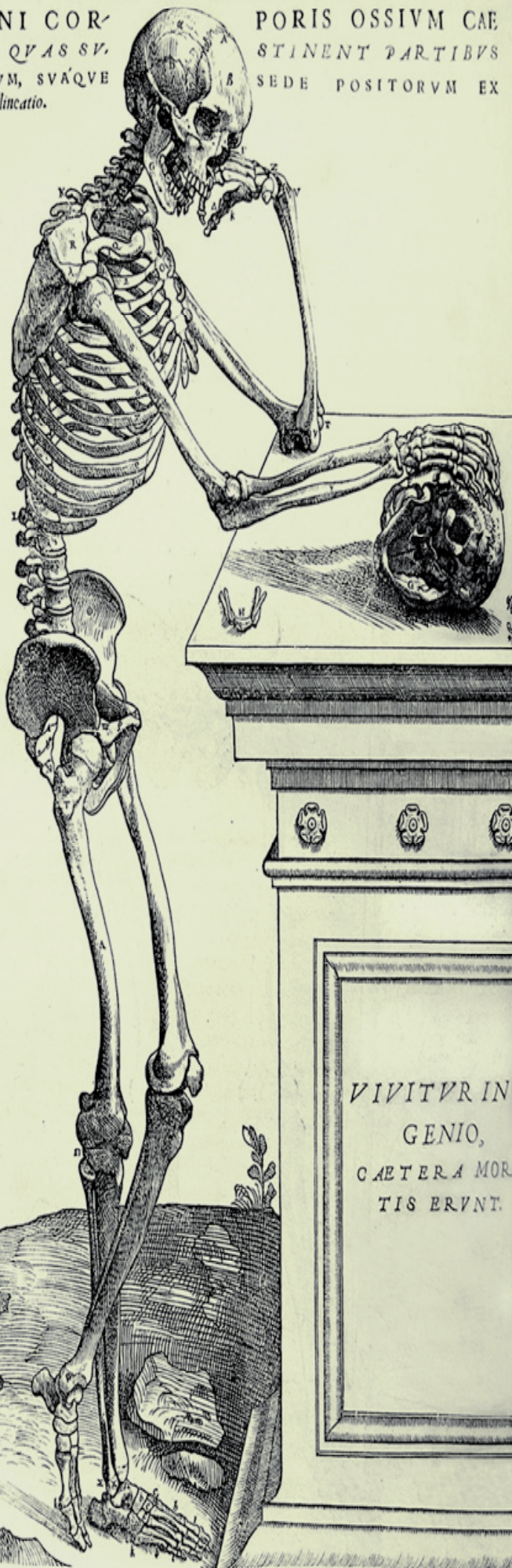
Das Bergische Monstrum / das ist
 Ein wunder seltsame vñ erschrockliche Geburt : welch
 zu Berg für Magdeburg / im Land zu Sachsen er
 pfangen / vnd zu Dresden in Meissen / anno 1580. ans licht
 boren / vnd an vielen orthen / von menniglichem gesehen worden:
 wie nach folgende Contrafractur / warhafftiglich anzeyget:
 sambt kurzer erklärung / was dise Mißgeburt
 bedeute vnd anzeige.



Durch Thidarium Bethadarenur.
 Getruckt zu Guntzenhausen / durch Uzbetachum
 Tropium

HVMANI COR-
TERIS QVAS SV-
LIBERORVM, SVÁQVE
latere delineatio.

PORIS OSSIVM CAE-
STINENT PARTIBVS
SEDE POSITORVM EX



At the same time, Vesalius's effort to improve medical science through the teaching of anatomy provided a general model of man. The student of this work was reminded that, apart from his physical qualities, men were all alike in their mortality: a preoccupation discernible in the art and science of the period. **Disease and war** were never far away. If the improved transmission of knowledge brought about by the invention of printing helped to inspire **alchemists and physicians** to try to eradicate the first, the new speed of communication also enabled **statesmen and generals to create and communicate new models for offensive and defensive warfare.**

The introduction of drill and **drill-books**, and of **star-shaped fortresses** which could withstand gunpowder increased the scale and duration of conflicts. Seventeenth-century wars in Europe were the bloodiest yet. The ostensible **aim of war**, however, was still **the common good**, so that while deploying new and better weapons, men-at-arms were governed, notionally at least, by new legal codes. More complex weapons and more need for training brought into existence peacetime armies; **military communities** whose regulation required not only the rule of law, but **the enactment of routine responses to danger in well-ordered spaces.** **Elaborate fortifications** were designed first to repel gunfire, but also to **embrace new communities of civilians and soldiers: fortresses such as Kinsale** were intended to minimise danger to family areas, while **cities like Antwerp**, in adopting or improving fortification, used the space created by new boundary walls to **experiment in the art of town-planning.** As a result **mathematics rose in status**, but its final triumph as 'the language of nature' was contested even by men such as **Robert Boyle**, for whom the surest advance towards full knowledge was through a succession of **experiments.** A turning-point came with **Isaac Newton** who, by

True and Wonderfull.

A Discourse relating a strange and monstrous Serpent (or Dragon) lately discovered, and yet liuing, to the great annoyance and diuers slaughters both of Men and Cattell, by his strong and violent poyson,

In Sussex two miles from Horsam; in a woode called S. Leonards Forrest, and thirtie miles from London, this present month of August. 1614.

With the true Generation of Serpents.



Printed at London by Iohn Trundle.

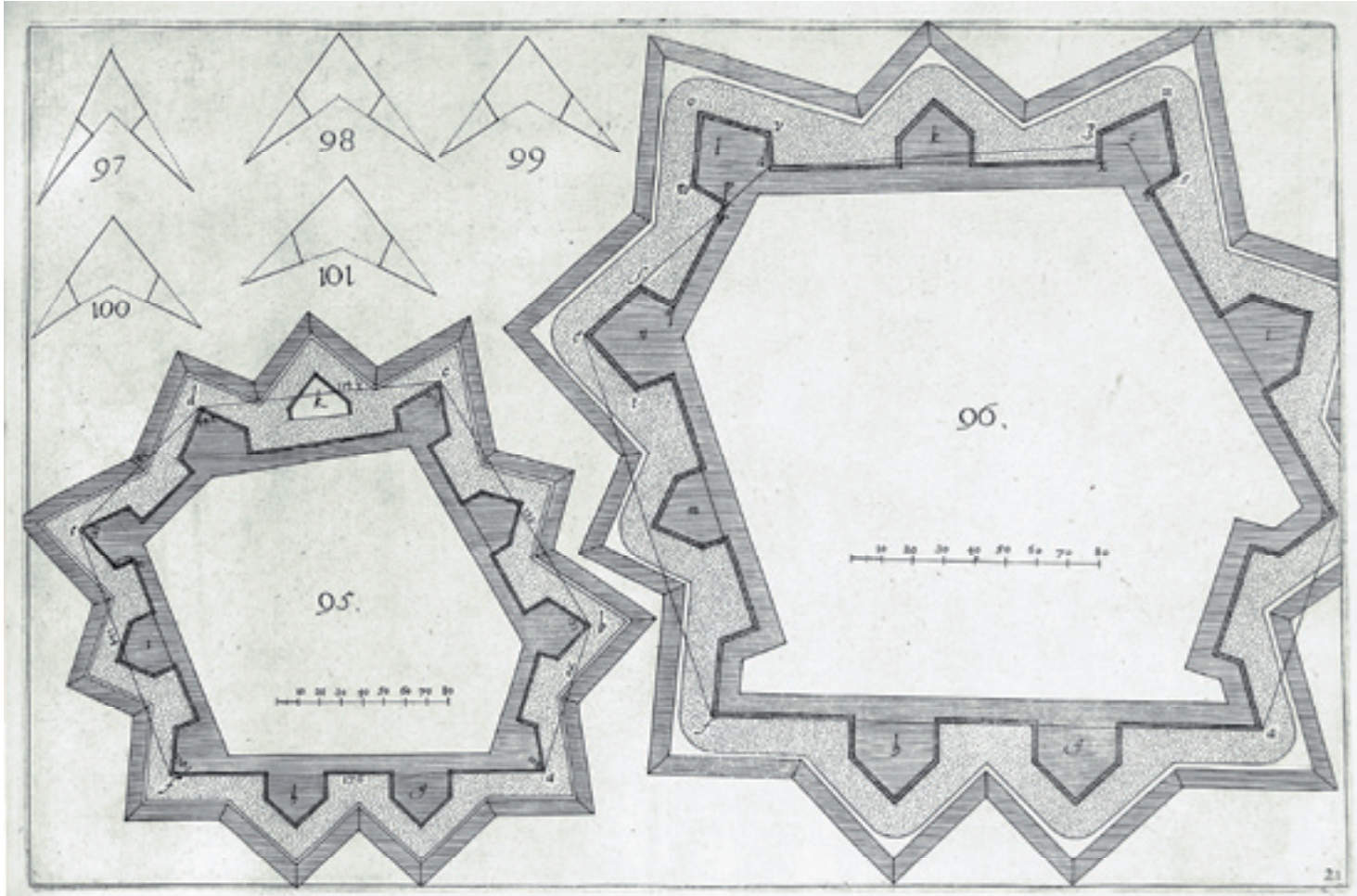
The Tragical History Of the LIFE and DEATH of Doctor Faustus.

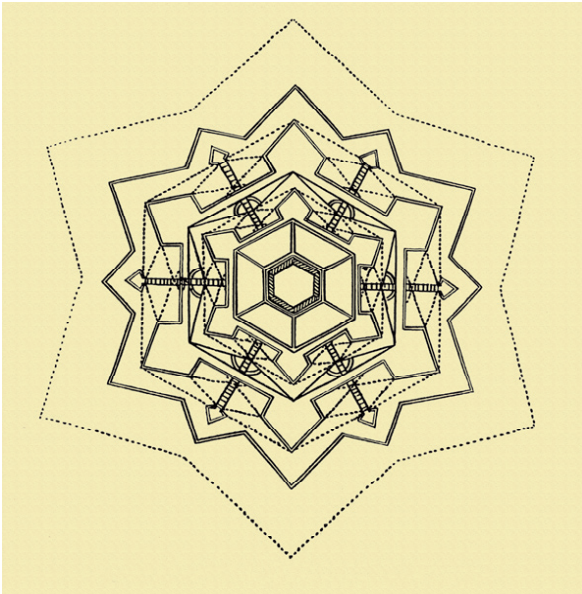
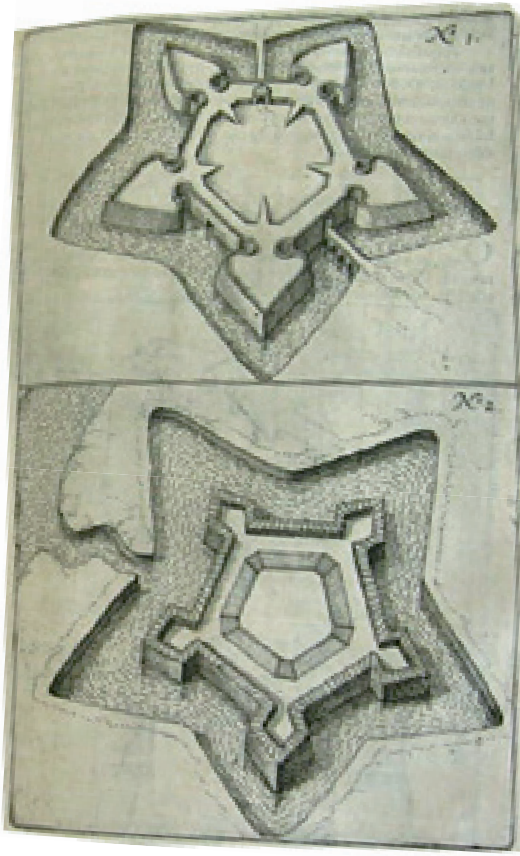
Printed with New Additions as it is now Acted. With several New Scenes, together with the Actors Names.

Written by C. H. MAR.



Printed for W. Chiseldon at the Bible without Newgate. 1663.





presenting a convincing explanation from mathematical principles of his theory of the universe, not only won widespread support for his work, but persuaded many of his scientific contemporaries that the **discovery of universal principles was the ideal towards which all sciences should aspire.**

This was the background to the **development of the social sciences.** The **Scottish Enlightenment attempted to generate what David Hume** – himself a central protagonist – called ‘**a science of man**’. The three thinkers examined here represent these developments, and the way they overlapped to create a unified movement of thought. **James Hutton** symbolises the Enlightenment idea that the existence of the **human being was the starting point for philosophical reflection.** In **overturning the biblical chronologies of the world, such as that offered by James Usher**, archbishop of Armagh, he rethought the position of man in relation to the natural world. His **geological theories** laid the groundwork for investigating **plate tectonics and the processes that shape our environment.**

At the heart of his perception, however, was a **re-imagining of the nature of geological time;** one which paralleled conceptual developments concerning human history. Typical of this change in thinking is **Adam Ferguson**, whose *Essay on the History of Civil Society* (1767) proposed a **three-stage analysis of society’s development,** arguing that progress was dependent upon the means of production, and that society moved from a period of dependency upon hunting to agriculture and ultimately to commercial exchange.

Ferguson was equally concerned with the virtues to be found within his community. A Presbyterian minister – as were many of the Scottish literati – he argued for the **retention of civic values that he thought were being undermined by the grosser versions of commercial activity** he witnessed in urbanising Lowland Scotland. In this concern for morality, Ferguson was followed by the third of our thinkers, the jurisprudentialist and historian **John Millar.** Professor of Law at the University of Glasgow, Millar offered a **radical critique of the British constitution** based on classical ideas of republicanism and independence. He too offered a developmental theory of human history, here explored through the **changing roles and behaviour of women.**

In sum, the three thinkers highlighted here show at once the diversity and unity of opinion within the broad spectrum of the Scottish Enlightenment. While they clearly disagreed on matters of practical politics, for example, they shared a concern with the broad intellectual programme of developing a widely defined series of human sciences which rethought the relationship between the three themes of our exhibition – **Science, Time and Community.**





The uppermost Wheel is good fortune; and the undermost Wheel is bad fortune.

A BOOK OF KNOWLEDGE In three Parts.

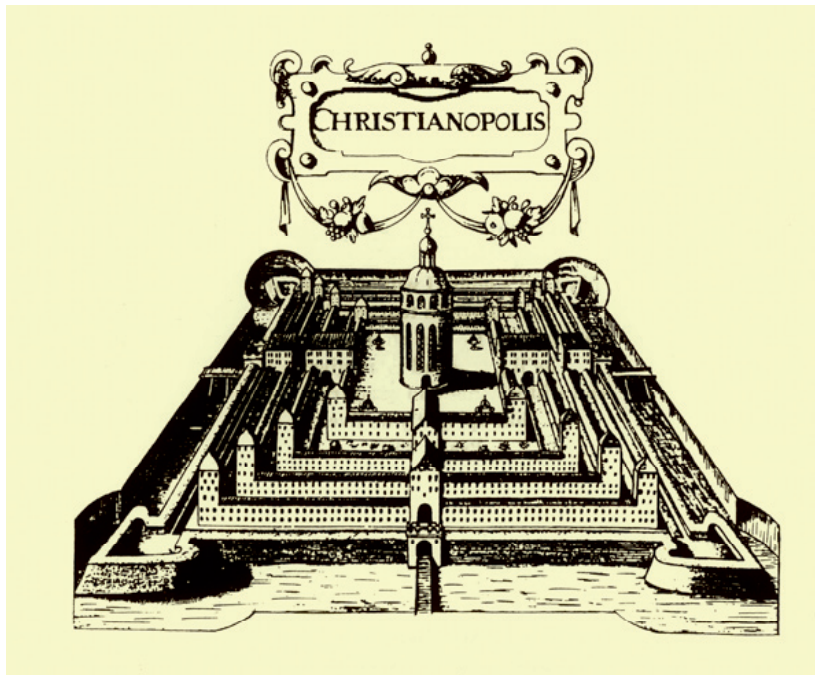
The first, containing a brief Introduction to Astrology, shewing the nature, qualitie, and effects of the twelve Signs, and seven Planets; their Dominion over Bodies, with the Fortunes of those Calculated, who are Born under them, also a Delightful Wheel of Fortune.

The second, A Treatise of Physick, the Anatomy of Mans body, the Diseases Incident to the body of Man, Rules and Receipts for the curing of them; also Rules, for Sweating, Bathing, Conserving, and Preserving, and the way to make Cordial-waters; Also the Principal rules of Arithmetick, very plain and easie.

The Third, the Country-mans Guide to good Husbandry, rules for Setting and Planting of Orchards, Gardens, and Woods; also rare Receipts for curing Diseases in Horses, Sheep, Cows, and Oxen; also an Almanack for ever, and ether variety of Inventions, very profitable and advantageous.

Composed by *Sims. Strangehopes.*

LONDON, Printed for *Charles Tysse*, at the three Bibles on *London-Bridge*. 1663.



The title page features a central illustration of a three-masted sailing ship on the nose of a giant's face. The ship is positioned as if navigating a channel between two massive, fluted columns. The background shows a cloudy sky with a sun or moon. The text is arranged in a formal, hierarchical layout, with the author's name and title in large, bold letters, and the subtitle in a smaller, elegant script.

FRANC. BACONIS
DE VERULAMIO/
Summi Angliæ
CANCELSARII/
Novum Organum
Scientiarum.

Multæ pertransibunt & augetur scientia.

LVGD. BAT.
Apud Adrianum Wijngaerde,
et Franciscum Moiardum. 1645.