

THE LORENZO DA PONTE ITALIAN LIBRARY

GENERAL EDITORS: LUIGI BALLERINI AND MASSIMO CIAVOLELLA

# THE ASH WEDNESDAY SUPPER

GIORDANO BRUNO

A new translation of *La Cena de le Ceneri*  
with the Italian text annotated and introduced by  
Hilary Gatti



# THE ASH WEDNESDAY SUPPER

Giordano Bruno

*The Ash Wednesday Supper* is the first of six philosophical dialogues in Italian that Giordano Bruno wrote and published in London between 1584 and 1585. It lays out a revolutionary cosmology founded on the new Copernican astronomy, one that Bruno extends to infinite dimensions, filling it with an endless number of planetary systems. As well as opening up the traditional closed universe and reducing earth to a tiny speck in an overwhelmingly immense cosmos, the work offers a lively description of Bruno's clash of opinions with a group of conservative academics and theologians in Oxford and London.

This edition presents, on facing pages, a new English translation with a newly edited Italian text of what has recently been claimed as the final version of Bruno's *Ash Wednesday Supper*. The extensive critical commentary by editor and translator Hilary Gatti takes into account the most current discussion of the textual, historical, cosmological, and philosophical issues raised in this seminal work of the late European Renaissance.

(The Lorenzo Da Ponte Italian Library)

GIORDANO BRUNO (1548–1600), born Filippo Bruno, was an Italian Dominican friar, philosopher, mathematician, poet, and cosmological theorist. He is known for his cosmological theories, which conceptually extended the then-novel Copernican model. Bruno wrote extensively not only on cosmology but also on the art of memory, a loosely organized group of mnemonic techniques and principles.

HILARY GATTI is a retired professor in the Faculty of Philosophy at the University of Rome, La Sapienza.

THE LORENZO DA PONTE ITALIAN LIBRARY

*General Editors*

Luigi Ballerini and Massimo Ciavolella  
University of California at Los Angeles

*Honorary Chairs*

Ambassador Gianfranco Facco Bonetti  
Dr. Berardo Paradiso  
Honorable Anthony J. Scirica

*Advisory Board*

Remo Bodei, Università di Pisa  
Lina Bolzoni, Scuola Normale Superiore di Pisa  
Francesco Bruni, Università di Venezia  
Cesare De Michelis, Università di Padova  
Giorgio Ficara, Università di Torino  
Giuseppe Mazzotta, Yale University  
Gilberto Pizzamiglio, Università di Venezia  
Margaret Rosenthal, University of Southern California  
John Scott, University of Western Australia  
Elissa Weaver, University of Chicago

*Agincourt Ltd. Board of Trustees*

Luigi Ballerini  
Vivian Cardia  
Maria Teresa Cometto  
Nicholas Gravante  
Lorenzo Lagnoloni  
Lorenzo Mannelli  
Eugenio Nardelli  
Berardo Paradiso  
Silvana Riggio  
Nicola Tegoni  
Diego Rodino di Miglione  
Giorgio Van Straten

---

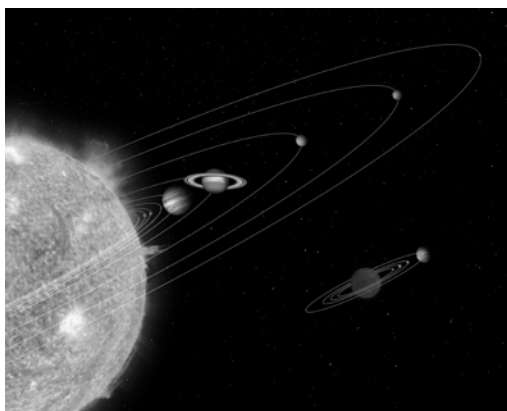
THE DA PONTE ITALIAN LIBRARY

---

# THE ASH WEDNESDAY SUPPER

GIORDANO BRUNO

A new translation of *La cena de le ceneri*  
with the Italian text annotated and introduced by  
Hilary Gatti



Published in collaboration with  
The UCLA Center for Medieval and Renaissance Studies

UNIVERSITY OF TORONTO PRESS

Toronto Buffalo London



© University of Toronto Press 2018  
Toronto Buffalo London  
[www.utppublishing.com](http://www.utppublishing.com)  
Printed in Canada

ISBN 978-1-4875-0144-0 (cloth)  
ISBN 978-1-4875-2140-0 (paper)



Printed on acid-free, 100% post-consumer recycled paper with vegetable-based inks.

The Lorenzo Da Ponte Italian Library

---

Library and Archives Canada Cataloguing in Publication

Bruno, Giordano, 1548–1600, author

The Ash Wednesday supper / Giordano Bruno ; a new translation of *La cena de le ceneri*  
with the Italian text annotated and introduced by Hilary Gatti.

(Lorenzo da Ponte Italian library)

Published in collaboration with the UCLA Center for Medieval and Renaissance Studies.

Includes bibliographical references and index.

Text in original Italian and in English translation on facing pages.

ISBN 978-1-4875-2140-0 (softcover). ISBN 978-1-4875-0144-0 (hardcover)

1. Copernicus, Nicolaus, 1473–1543. 2. Astronomy – Early works to 1800.  
3. Occultism – Early works to 1900. I. Gatti, Hilary, editor II. Bruno, Giordano,  
1548–1600. *Cena de le ceneri*. English. III. Bruno, Giordano, 1548–1600.  
*Cena de le ceneri*. IV. Title. V. Series: Lorenzo da Ponte Italian library

QB36.C8B8713 2018 520 C2017-905697-2

---

This volume is published under the aegis of Agincourt Press Ltd. with the financial assistance of The UCLA Center for Medieval and Renaissance Studies, and a generous contribution from Professor Lorenzo Mannelli.

University of Toronto Press acknowledges the financial assistance to its publishing program of the Canada Council for the Arts and the Ontario Arts Council, an agency of the Government of Ontario.



Canada Council  
for the Arts

Conseil des Arts  
du Canada



ONTARIO ARTS COUNCIL  
CONSEIL DES ARTS DE L'ONTARIO  
an Ontario government agency  
un organisme du gouvernement de l'Ontario

Funded by the Government of Canada | Financé par le gouvernement du Canada

Canada



# CONTENTS

Acknowledgments vii

*Introduction* ix

*A Note on the Text* lvii

*List of Figures* lxiii

## **LA CENA DE LE CENERI 2 / THE ASH WEDNESDAY SUPPER 3**

Proemiale epistola 6 / Introductory Letter 7

Dialogo Primo 20 / Dialogue I 21

Dialogo Secondo 54 / Dialogue II 55

Dialogo Terzo 86 / Dialogue III 87

Dialogo Quarto 138 / Dialogue IV 139

Dialogo Quinto 166 / Dialogue V 167

*Appendix* 206 / 207

*Notes* 227

*Bibliography* 285

*Index* 293

*This page intentionally left blank*

## ACKNOWLEDGMENTS

This translation of Giordano Bruno's *Cena de le ceneri*, with facing Italian text and comment, has been many years in the making, during which time I have incurred a number of important debts to various institutions. My thanks to the University of Rome "La Sapienza" for the periods of study leave that made the project possible, to the Warburg Institute in London, whose library and archives have provided invaluable material over the years, to the British Library and the library of the Scuola Normale in Pisa, whose fine collections of "Bruniana" have proved indispensable, and to the Center of Medieval and Renaissance Studies of the University of California at Los Angeles, whose directors past and present, Brian Copenhaver and Massimo Ciavolella, were responsible for including this text in the Lorenzo da Ponte Library.

I am also indebted to a number of individual scholars for help, advice, and support. Elisabetta Tarantino's work on the textual problems involved has proved essential; David Marsh contributed numerous helpful suggestions for the translation; Robert Westman has provided valuable advice on Bruno's reading of Copernicus. For their more general support of my Bruno studies, particular thanks to Eugenio Canone, Ornella Faracovi, Marta Fattori, Martin McLaughlin, and Ingrid Rowland.

This book is dedicated to the memory of the three distinguished scholars who, in the early years of its inception, constantly encouraged me in my endeavour: Giovanni Aquilecchia (formerly of University College, London, and nominee of the Centro Studi Bruniani "Giovanni Aquilecchia" in Naples); Eugenio Garin (formerly of the Scuola Normale in Pisa, and former Director of the Istituto Nazionale di Studi sul Rinascimento in Florence), and J.B. Trapp (former Director of the Warburg Institute in London).

*This page intentionally left blank*

# INTRODUCTION

Giordano Bruno's *La cena de le ceneri* (*The Ash Wednesday Supper*) is a seminal text of the late European Renaissance, as well as being closely connected with Elizabethan London, where it was written and originally published in 1584. It is the first of six philosophical works in Italian that Bruno wrote and published in London between 1584 and 1585. Although developing multiple themes related to the London and Europe of his time, the core theme of *The Ash Wednesday Supper* is the new Copernican astronomy. Copernicus's *De revolutionibus orbium coelestium* (*On the Revolutions of the Heavenly Spheres*) had been published in 1543. The traditional Aristotelian-Ptolemaic astronomy, still dominant throughout the sixteenth century, placed a stationary earth at the centre of the universe, but Copernicus sent the earth into orbit both around its own axis and around a central sun. In the lifetime of Giordano Bruno (1548–1600), this new astronomy was still frowned upon in both Catholic and Protestant Europe because it was thought to disagree with the cosmology of the Holy Bible. Nevertheless, it was gradually causing a revolution in people's perception of the universe they lived in that was upsetting many traditional assumptions and ideas.

After a scintillating authorial introduction, *The Ash Wednesday Supper* is presented in the form of a cosmological, pro-Copernican dialogue in five parts between four characters. Theophilus, an admirer of Copernicus and a proponent of his astronomy, is the mouthpiece of Bruno himself. A cultivated English gentleman going by the widespread name of Smith (Smitho in the original text, Smithus in my translation) is open-minded and sympathetic to the arguments put forward by Theophilus. A neo-Aristotelian pedant called Prudentius indignantly repudiates the new Copernican astronomy. A lively servant or attendant with the name of Frulla (meaning, in Italian, someone who mixes everything up) provides a note of intelligent comic relief.

*The Ash Wednesday Supper* goes far beyond a mere defence of Copernicus's new heliocentric cosmology. Indeed, Theophilus declares that he is not to be considered as simply a disciple of Copernicus, who, in his opinion, is to be seen only as the starting point of an authentic astronomical revolution. Bruno recognizes that the exchange of the relative positions of the sun and the earth courageously defies our common sense perceptions by claiming that it is the earth that moves. Bruno himself, however, uses this new astronomy as the foundation of an even more revolutionary idea by claiming that the new vision of the universe implies a universal infinity, or a universe without boundaries in which our own world becomes a mere speck in an overwhelmingly immense whole. Furthermore, Bruno fills his infinite universe with an infinite number of other solar systems similar to our own. Bruno's new infinite cosmology, although calling on prestigious ancient sources such as Pythagoras, Democritus, and Lucretius, represents an even more daring and radical challenge to what was in his time the conventional world picture, closed by the sphere of fixed stars, and sanctioned by Aristotle and Ptolemy. Their cosmological picture had not only dominated late classical culture but had endured throughout the Middle Ages, receiving the benediction of Christian culture, which saw it as the creation of a Christian God.

Bruno's new cosmological picture, presented for the first time in its radical entirety in *The Ash Wednesday Supper*, raises complex philosophical and theological questions such as the relationship of the infinite universe to a divine cause, the nature of the universal substance and the relations within it of matter and form, as well as delicate questions for the Christian culture of his time, such as the status of the individual soul within an infinite whole. These more specifically philosophical issues would be the subject of discussion in the following two Italian dialogues that Bruno published in London in 1584 entitled *Cause, Principle and Unity* and *The Infinite Universe and Worlds*. Usually known, with *The Ash Wednesday Supper*, as Bruno's three cosmological dialogues, these were followed in 1584/5 by three dialogues that examine the social/political, ethical, and epistemological implications that Bruno associates with his new infinite cosmology: *The Expulsion of the Triumphant Beast*, *The Cabala of Pegasus*, and *On the Heroic Frenzies*. *The Ash Wednesday Supper* thus figures both as a revolutionary cosmological dialogue in its own right and also as the starting point of an extraordinarily complex and rich intellectual inquiry spanning six full-length works and leading up to what Bruno considers a new philosophical apotheosis, or an ecstatic vision of an entirely renewed world.

Bruno's Italian dialogues have all been translated into English over the years, while the new millennium has witnessed numerous new translations both of his Italian and some of his Latin works. Although to be considered an admirable development in itself, this resurgence of activity regarding Bruno and his works has led to results of very varying quality, both in linguistic and intellectual terms. This new translation of *The Ash Wednesday Supper* should be associated with Ingrid Rowland's translation of the last of Bruno's six London dialogues, *On the Heroic Frenzies*, as part of a project, incorporated into the Lorenzo da Ponte Library and published by the University of Toronto Press, aimed at providing an integrated series of new translations incorporating the most recent work on both Bruno's ideas and his texts.<sup>1</sup>

*The Ash Wednesday Supper* itself has so far been translated into English only three times, in relatively recent years. Frances Yates made a first ever translation in the 1930s, which remains in her personal archive held by the Warburg Institute in London. She left it unpublished when she began to have doubts about Bruno's version of the new Copernican astronomy, which earlier commentators had considered a valid contribution to the new science of the late Renaissance.<sup>2</sup> Yates, however, gradually came to consider it as not scientific at all but rather a presentation of a cosmos characterized by Hermetic mysticism and magic. Many years later, in 1964, Yates would publish her influential *Giordano Bruno and the Hermetic Tradition*, presenting a strictly Hermetic and magical reading of *The Ash Wednesday Supper*, as of all Bruno's works.<sup>3</sup> A translation of *The Ash Wednesday Supper* published in 1975 by Stanley L. Jaki made the text available in a lively English translation for the first time, not without some questionable renderings of Bruno's undoubtedly complex and difficult Italian. Jaki, who was a philosopher and historian of modern science of some prestige, notes that Bruno advocated a physical astronomy rather than a mathematical one, but concludes that his physical astronomy bogs down in what Jaki considered a gross animism. Accordingly, he expressed considerable scorn for Bruno's attempt to understand the Copernican theory in terms of a biological rather than a mathematical concept of a heliocentric universe, extended to a universal infinity. Two years later, Edward A. Gosselin and Lawrence S. Lerner published a more precise translation based on a better knowledge of Bruno's Italian and of what was then the latest bibliography of Bruno studies.<sup>4</sup> Their text offers a more positive evaluation of Bruno's animism by explicitly placing itself under the influence of the Yatesian Hermetic interpretation of Bruno. By doing so, however, Gosselin and



Lerner also deny any technical validity to the astronomical aspects of Bruno's dialogue.

One of the consequences of this dismissal of Bruno's participation in the development of the new astronomical revolution was an increased attention to the formal and literary aspects of his text.<sup>5</sup> On the other hand, the 1990s and the early years of the new millennium have also seen a renewed increase of study of the details of Bruno's cosmological discourse that once again places him firmly within the early dissemination and discussion of the Copernican revolution. The terms in which he did this, both in *The Ash Wednesday Supper* and in later texts, are now much more fully understood. This more recent "scientific" bibliography places a particular emphasis on Bruno's concept of cosmological infinity. His "infinite infinite" (as Bruno himself calls it) not only enlarges cosmological space to infinite dimensions (nowhere contemplated by Copernicus himself) but also fills it with an infinite number of solar systems similar to our own. Bruno thus proposes an entirely new and original cosmological picture, filled with a multitude of stars and planets in a constant state of movement and change. Other contemporaries, such as Palingenius and Patrizi on the European continent and Thomas Digges in England, had also envisaged an infinite space outside what the traditional astronomy called the "sphere of fixed stars." But, even when they had filled it with stars, they had conceived of this infinite space in static terms of divine light. Bruno, on the contrary, posits a homogeneous cosmic infinity in which all bodies move.<sup>6</sup> As far as sources are concerned, Bruno's reading of Copernicus links up to the idea of a "Lucretian Renaissance" that has gradually been emerging in recent years. In terms of influence, it looks forward to the discussions of cosmological infinity that will characterize much of the new science up to and after Newton himself.<sup>7</sup> The following new translation of, and comment on, *The Ash Wednesday Supper* reinterprets Bruno as a serious participant in the early Copernican discussion, and *The Ash Wednesday Supper* as anticipating in numerous ways Galileo's great *Dialogue on the Two Major World Systems*.<sup>8</sup> However, it also engages with the discussion of the formal structure of the work, as well as with the latest aspects of the study of the text (see the Note on the Text that follows this Introduction).

A central feature of Bruno's cosmological discourse, especially prominent in *The Ash Wednesday Supper*, is his perception of the new science that was developing in the wake of the Copernican revolution as intrinsically embedded in the social, political, and religious contexts of his time. In this first full-length presentation of his positive reading of Copernicus,

Bruno is not only writing the kind of text that we would define today as “scientific,” commenting on, and developing in important ways, the technical aspects of the astronomical revolution of his age. He is also offering a lively representation of the fierce discussions to which it was giving rise. Bruno understands that the new heliocentric universe represents a major threat to rigidly established academic, social, and religious norms, upsetting a neo-Aristotelian mindset that was deeply embedded in the culture of his age. He knows that his infinite universe makes everything relative, destroying fixed centres and ideas by reducing earth and its inhabitants to a tiny speck within an overwhelmingly immense whole. Nevertheless, Bruno also claims that his new cosmological picture represents a new dawn of civilization. He is intent on enlarging not only the universe but also the mind, by opening it up to enlarged prospects of vision and a new understanding of mental as well as cosmic space. In this sense, *The Ash Wednesday Supper* lays the foundation for the cosmological discourse of modernity.

I have divided the following Introduction to the text into four parts, covering the various aspects of Bruno’s discourse in this work. The first part is dedicated to the occasion that gave rise to the supper in the first place. It clarifies for the reader how it was that Bruno, born near Naples in Italy in 1548, came to be in London in 1584, and what adventures and misadventures gave rise to the discussions represented in his text. The second part of the Introduction looks at the formal aspects of Bruno’s text, analysing in particular what I propose as an important reference on Bruno’s part to Plato’s *Symposium*. Plato’s dialogue, known in Latin as the *Convivium*, had been the subject of a famous comment by Marsilio Ficino in the previous century, and was one of the most read and admired texts of the European Renaissance. It is also in the form of a philosophical discussion that takes place during a supper, remembered and commented on by a group of learned friends after the event. What Bruno rejects and what he takes from Plato is the subject of this second part of my Introduction. In the third part, I start to comment directly on Bruno’s cosmological speculation, and particularly on his idea of infinite cosmological space. Only in the fourth and last part do I analyse the technical aspects of Bruno’s reading of Copernicus. This corresponds to the strategy followed by Bruno himself, for it is only in the last of the five dialogues that compose his work that he finally leaves behind the commentary on the supper, with its fiercely debated cosmological, social, and religious arguments. Only in Dialogue V does Bruno attempt a synthetic presentation of his own personal way of reading and understanding the Copernican theory of the movements of the earth.

### *The Occasion*

All'ora gli disse il Sig. Folco Grivello. Di gratia S. Nolano, fatemi intendere le ragioni per le quali stimate la terra muoversi.

Then Sir Fulke Greville said to him: – “Signor Nolano, please explain to me the reasons which lead you to think that the earth moves.”

Between January and February, 1548, a boy was born in Nola – a town in southern Italy about fifteen miles inland from Naples – to Giovanni Bruno, a soldier in the service of the Count of Caserta, and his wife, Fraulisa Savolino. The child was christened with the name of Philip.<sup>9</sup> The grown man's memories of his home town would later surface in his philosophical works with the slightly obsessive precision so often found in exiles or restless wanderers, as the young Bruno would become, and remain for most of his adult life.

Towards the end of *The Ash Wednesday Supper*, Bruno mentions Nola in a discussion of the endless movement and change which take place on the surface of the earth as it revolves with multiple movements around the sun. The argument is an important part of his defence of the infinite, post-Copernican cosmology that he proposes in this work. Bruno envisages a process of universal natural evolution and change throughout the infinite whole, and he illustrates the nature of such change with reference to a Nolan martyr of the fifth century AD who had written that the sea reached almost up to the walls of the town. Bruno himself remembers a temple still in his day called the Church of the Port, although by then the sea had receded by twelve thousand paces.<sup>10</sup> The point about universal evolution is made all the more vividly through the detailed example furnished by childhood memories, for Bruno's Nolan years did not last long. In 1562 he went to Naples to study philosophy, and in 1565 he entered the monastery of San Domenico Maggiore. There, according to traditional monastic thinking, he became a changed man, assuming the name of Giordano. He used his monastic name from then on, although his freedom of thought led him into trouble with the ecclesiastical authorities almost at once.

Already in 1566/7, Bruno was accused of urging another novice to give up reading a book of popular piety about the Virgin Mary and to read the early Church fathers instead. More seriously still, he was accused of destroying all his holy images except for the crucifix. A document of accusation, which may have noted the danger of Protestant tendencies behind this behaviour, was drawn up but later destroyed. Bruno continued his

monastical training, and was ordained as a priest in 1572, when he celebrated his first Mass. In 1575 he obtained his diploma in theology with a thesis on St Thomas Aquinas. However, at the end of that same year, some forbidden books were discovered in his possession, including works of St John Chrysostom and St Jerome with comments by Erasmus. The complete works of the great Dutch scholar, Erasmus of Rotterdam, had by that time been placed on the Index of Prohibited Books, drawn up by the ecclesiastical authorities in Rome after the Council of Trent had re-organized the Inquisition as its principal instrument of defence against heresy. Erasmus had remained a devout Catholic, but he was critical of much that he saw in the Church of his time, and his works contain some particularly harsh anti-ecclesiastical satire. An official inquiry was initiated into Bruno's reading habits that forced him to flee from the convent in Naples, and to search for refuge in Rome.<sup>11</sup> After receiving news that the inquiry was continuing into his heretical opinions, Bruno left Rome and started a long journey north which would take him to all the major cultural and religious centres of the Europe of his time: Venice, Geneva, Paris, London, Wittenberg, Frankfurt, and imperial Prague.

In the course of this journey, the ex-friar would become a "man of infinite titles, among other phantasticall toys," as the anonymous N.W. would write in 1584 in his preface to Samuel Daniel's English translation of Paolo Giovio's *Imprese*.<sup>12</sup> Most of these titles were self-conferred, sometimes with a wry smile of self-mockery. For example, Bruno describes himself as an "Academic of no Academy" on the frontispiece of the *Candelaio*, a comic drama he published in Paris in 1582 representing the semi-criminal affairs of contemporary Naples.<sup>13</sup> Often he would refer to himself rather grandly in the third person as "The Nolan," and to his works as "The Nolan Philosophy," feeling, perhaps, that the titles signified seigneurial status in a world where obscure origins were no help to fame. In his works, however, Bruno frequently insisted that rank and wealth were indifferent to him in his dedication to an intellectual inquiry which occupied him incessantly from 1582, the year of his first publications to have survived, until 1592, when, less than a year after his return to Italy, he was arrested for heresy in Venice and consigned to the prisons of the Inquisition. His trial lasted eight long years, during which Bruno tried to persuade his judges that it was his right to think on philosophical matters according to his own reasons and convictions. The Inquisitors remained unmoved. On 17 February 1600, Giordano Bruno of Nola, after refusing to recant, was burnt at the stake as an impenitent heretic in the *Campo dei Fiori* in Rome.<sup>14</sup>

According to his own account, offered to his judges at his trial, Bruno arrived in London in the spring of 1583. He was carrying letters from the

French King, Henri III, to the French Ambassador in London, Michel de Castelnau, Lord of Mauvissière, who was covertly supporting the cause of Mary, Queen of Scots.<sup>15</sup> Bruno left London when Castelnau was recalled to France in the autumn of 1585, in a moment of mounting tension between England and Spain. This tension was accompanied by ever more pressing requests by the English people to Queen Elizabeth I to execute the Catholic Mary. It was during these troubled years that Bruno wrote and published with the printer John Charlewood the six philosophical dialogues in Italian presenting his infinite post-Copernican cosmology, as well as inquiring into its physical, metaphysical, social, and historical implications.<sup>16</sup> These dialogues, culminating with the *Heroici furori* (*On the Heroic Frenzies*), posit a supreme good (*il sommo bene*) within the world, rather than in a transcendent sphere beyond. They thus culminate in a concept of divine immanence, or a divinity that is manifest within every aspect of the infinite universe itself. Accordingly, Bruno repudiates his former Christianity, and with it all other churches and ecclesiastical hierarchies.<sup>17</sup>

Apart from the philosophy, there is documentary evidence of various kinds showing that Bruno visited Elizabeth's court in the company of Castelnau. He also cultivated direct personal relationships with important members of Elizabeth's entourage, such as Sir Philip Sidney, recently married to the daughter of the Queen's Secretary, Sir Francis Walsingham. Bruno seems to have known personally Sidney's lifelong friend Fulke Greville (whose rooms in the royal palace at Whitehall are the setting of this first dialogue, *The Ash Wednesday Supper*), and possibly Robert Dudley, the powerful Earl of Leicester and uncle of Sidney, whose hospitality to Italian guests receives a special mention in Bruno's text. There can be no doubt of Bruno's admiration for the political acumen and cultural prowess of the English Queen, both of which are amply praised in *The Ash Wednesday Supper*. He refers to her courtiers primarily in cultural terms, and will address to Sir Philip Sidney the dedicatory letters to two of his later dialogues, *The Expulsion of the Triumphant Beast* (*Lo spaccio della bestia trionfante*) and *On the Heroic Frenzies*.<sup>18</sup> There has, nevertheless, been a widespread feeling among his commentators that Bruno may have been engaged in some form of semi-political activity in England, whose nature has been variously conjectured and remains uncertain.<sup>19</sup> There were certainly closer friendships with lesser Elizabethans such as John Florio, son of an Italian Protestant refugee and later a figure of considerable cultural importance in the court of James I; the writer and Latin dramatist Mathew Gwinne; and Alexander Dicson, whose works on the art of memory are similar to Bruno's. Dicson would later partake in a heated polemical exchange with the Ramist

logician William Perkins of Cambridge, who saw the memory as assisting in the fabrication of a purely logical-rational concatenation of ideas, and declared himself hostile to Dicson's emphasis on visual imagery and a more traditional picture-logic.<sup>20</sup>

In Paris, Bruno had found royal favour and his first taste of fame with the publication of the first four of his works to have survived: the *De umbris idearum* and the *Cantus circaeus*, which develop his thought on the art of memory, the *De compendiosa architectura*, which celebrates the combinatory picture-logic of Raymund Lull, and his first and only play, written in Italian, *Candelaio*.<sup>21</sup> Bruno clearly thought that it would be even easier to distinguish himself in England, which he considered a still largely barbaric island. He would have ignored the fact that his arrival had been preceded by a message from the English Ambassador in Paris, Henry Cobham, warning the Secretary of Elizabeth's Privy Council, Walsingham, that "Doctor Jordano Bruno Nolano, a professor of philosophy, intends to pass into England, whose religion I cannot commend."<sup>22</sup>

Nevertheless, Bruno's visit started out under favourable auspices. On 10–13 June 1583, he was in the entourage of the French Ambassador as part of a delegation which accompanied to Oxford the Polish prince Albert Alasco. On that occasion, a number of academic debates were organized in the colleges. Bruno is known to have measured himself against an opponent whom he accuses of boorish behaviour and refers to scathingly in *The Ash Wednesday Supper* as that "poor doctor" ("povero dottor"), claiming that during the fifteen syllogisms debated he had him running about like a chick in the chaff. A marginal note written by Gabriel Harvey in his copy of *Oikonomia* by Ioannes Ramus (Johann Ram) offers, in Latin, a succinct description of Bruno's strategy in debate. This consisted in referring all subjects raised, whether theological or philosophical, to the *Topics* and the axioms of Aristotle, and proceeding from there to argue his own (often very anti-Aristotelean) ideas.<sup>23</sup> Harvey's neat description nicely echoes Bruno's own definition of his debating method in Dialogue IV of *The Ash Wednesday Supper*: "the first lesson given to anyone wishing to learn how to dispute is to ask questions not according to his own principles, but according to those held by his adversary." Harvey's note is also useful in revealing the identity of Bruno's "povero dottor." He was Dr John Underhill, already chaplain to the Queen and a distinguished member of the university. A year later he would be elected Vice-Chancellor.

It is probable that this well-documented academic dispute took place after the third dinner on the fourth day of Alasco's visit to Oxford. Raphael Holinshed's *Chronicles of England, Scotland and Ireland*, in the second edition of 1587 continued by John Stow and others after Holinshed's

death in 1580, covers the year 1583 at vol. VI, offering a lively and detailed description of Alasco's Oxford visit. Although neither Bruno nor Underhill is mentioned by name, here the author claims that on the evening of the fourth day Alasco dined at New College, where there were "publike philosophie, physike, and divinitie disputations, in all of which those learned opponents, respondents, & moderators, quited themselves like themselves, sharplie and soundlie."<sup>24</sup>

The result seems to have been a positive one for Bruno, who later that summer returned to Oxford to give a series of lectures. All that he himself tells us about this second visit is that he read two texts entitled *de immortalitate animae* and *de quintuplici sphaera*, and that he was obliged to interrupt his lectures. Apart from this indignant and tantalizingly brief comment in *The Ash Wednesday Supper*, a number of external documents have come to light containing comments by cultural figures of notable importance who refer to this second Oxford episode as a ludicrous and embarrassing débâcle. A letter to Jean Hotman from the international jurist Alberigo Gentile, written from Oxford on 8 November 1583, ridicules doctrines he had just heard expounded which talk of a stony sky, a two-foot-wide sun, a moving earth, and an inhabited moon. This is almost certainly a reference to (and a partial distortion of) Bruno's cosmological doctrines, even if no name is specifically mentioned. Some years later, an undated letter (probably written in 1588) from the Anglican theologian Richard Hooker to his old friend and extutor at Oxford, the Calvinist John Rainolds, refers to Hugh Broughton as "an English Jordanus Brunus." Broughton was a fiery religious polemicist, who also got into trouble at Oxford. He would spend much of his life on the European continent, where he cultivated close relationships with the Jews, whose Old Testament of the Bible he considered as a prophecy of all that was to come in the New Testament. Broughton was a radical Protestant whose work seems to have had little in common with that of Bruno. Giovanni Aquilecchia, who brought this letter to the notice of Bruno scholars, thought that what Hooker had in mind was the turbulent characters of the two men, rather than any similarities in their thought.<sup>25</sup>

The most important document to come to light concerning Bruno's Oxford lectures is the page written by George Abbot in a book of anti-Catholic religious polemic published in 1604: *The reasons which Doctour Hill hath Brought for the Upholding of Papistry*.<sup>26</sup> Abbott, who would later become Archbishop of Canterbury under James I, had been a Fellow of Balliol College at the time of Bruno's lectures at Oxford twenty years previously. He clearly writes about an episode at which he had been

present personally. Unfortunately, his account is vitiated by being bitterly loaded against Bruno, as well as against Italian and Catholic culture generally. Furthermore, it was written many years after the event. Nevertheless, Abbott offers precious information that had not been available before Robert McNulty drew attention to this page of Abbott's book in 1960. Abbott's account emphasizes the ill feeling caused by a furiously insulting letter to the Vice-Chancellor of the University that Bruno added to some of the copies of his *Explicatio triginta sigillorum*. This work was a second reprint of a Latin account of the art of memory and the workings of the soul published some time after Bruno's arrival in London. It still remains uncertain at what precise moment Bruno wrote this letter, which would seem to be an outburst against what he considered the uncivil behaviour of the Oxford dons, who had interrupted his second visit to the university in the summer of 1583.<sup>27</sup>

It is Bruno's second visit to Oxford that is described in some detail by Abbott, who refers to him insultingly as "that Italian Diadapper," or a very small bird. The comment is clearly intended as unkind, but it offers the modern reader a confirmation of Bruno's own references to himself as physically small and spare. Abbott accuses him, firstly, of undertaking "among very many other matters to set on foote the opinion of Copernicus," and, secondly, of cribbing from Marsilio Ficino's magical and astrological work *De vita coelitus comparanda*, the third book of Ficino's widely read *Libri de vita*, first published in 1489 and then in numerous editions throughout the sixteenth century. The cribbing, first detected by "a grave man, and both then and now of good place in the University," was repeated, apparently, in all three lectures that Bruno was allowed to give: after which he was invited to step down. Abbott makes no effort to conceal his scathing opinion of Bruno's "madness" in trying to put forward the Copernican theory in "the highest place of our best and most renowned schoole." Copernicus's book had not yet been placed on the Index of Prohibited Books; this would happen only in 1616, in the wake of Galileo's discovery of the moons of Jupiter. However, Copernicus's *On the Revolutions of the Heavenly Spheres* was already frowned upon by both Catholic and Protestant theologians because of its disagreement with biblical authority.

At Oxford the new Copernican astronomy had so far been officially mentioned only briefly in some lectures by the renowned mathematician Henry Saville, who sanctioned it as a purely mathematical hypothesis acceptable as a basis for obtaining more correct astronomical calculations.<sup>28</sup> Bruno was presumably already proposing the realist reading of Copernicus's astronomy, as a physical description of the universe, which



he develops in *The Ash Wednesday Supper*. Furthermore, Bruno's "madness" at Oxford was capped, according to Abbott, by his dishonesty in attempting to pass off Ficino's Neoplatonic philosophy as his own. Abbott's scornful account of Bruno's lectures tends to raise as many problems as it solves. First and foremost, it remains unclear in what terms Bruno was referring to Ficino's pre-Copernican philosophy, more concerned in the *De vita coelitus comparanda* with astrology than with astronomy, in what appears as an attempt to present at Oxford the first realist reading of the Copernican cosmology. It is equally unclear in what way Abbott's incomplete account of these lectures can be reconciled with Bruno's own claim that he was "reading" at Oxford two works entitled *de immortalitate animae* and *de quintuplici sphaera*.

Attempts to answer these questions have led to disagreement among Bruno's commentators. Frances Yates, in her book on *Giordano Bruno and the Hermetic Tradition*, and more recently Rita Sturlese, propose readings of Bruno's Oxford lectures that accentuate his constant use of Neoplatonic sources. This is particularly marked in metaphysical works such as his *Sigillus sigillorum* (which is what Sturlese thinks Bruno was actually reading at Oxford). Yates and Sturlese thus attempt above all to explain the link with Ficino, dismissing the Copernican question as a marginal detail.<sup>29</sup> Giovanni Aquilecchia points out, in disagreement with these emphases, that Abbott's account is concerned primarily with the Copernican question, and that in some way Copernicus and Ficino must have been reconciled by Bruno at Oxford, although it remains unclear how this might have been done. Aquilecchia further suggests that Bruno's *de quintuplici sphaera* could have been an astronomical text attempting to present Copernicanism in terms of Tycho Brahe's recently formulated compromise cosmology. Brahe left the earth at the centre of the universe as the centre of the orbits of the sun and the moon, while the five planets circled around the sun, and with it around the earth.<sup>30</sup> This possibility, however, seems unlikely in view of the fact that Brahe had not made his cosmology public when Bruno gave his Oxford lectures. Furthermore, Bruno makes an unequivocal claim in *The Ash Wednesday Supper*, which is presented as a London-based sequel to the Oxford lectures, that the sun and not the earth lies at the centre of the universe. Nevertheless, Tycho Brahe's already published observations of comets above the sphere of the moon, which were destroying the idea of a heavenly sphere made up of a non-elemental quintessence, may have already been assimilated by Bruno. He would use this dismissal of a quintessential heavenly sphere in *The Ash Wednesday Supper* as a foundation stone of his new homogeneous infinitism.

In any case, Abbott mentions cribbing from Ficino rather than Brahe, and it could be that Bruno had other aspects of the *De vita coelitus comparanda* in mind. For Ficino's text contains a crucial passage on magnetism, seen as a cosmic phenomenon extending to the pole star, and therefore above the sphere of the moon.<sup>31</sup> Ficino himself fails to draw any explicit cosmological conclusions from this phenomenon. Bruno, however, may have done so, using Ficino's pages, together with Tycho Brahe's work on comets, to propose the idea that there was no empyreal quintessence beyond the sphere of the moon. This idea will become central to the cosmology of *The Ash Wednesday Supper* with its infinite universal space filled by an infinite number of solar systems similar to our own. Interestingly, the posthumous work of the foremost magnetical philosopher in England, William Gilbert, published in 1651, contains an extended reference to Bruno's early cosmological theories. This is followed by a diagram of the new universe in which the earth (together with the moon) revolves freely around the sun, while the five remaining planets also revolve freely around the sun, disposed in a pattern which could well correspond to the title of the *de quintuplici sphaera*.<sup>32</sup> All these suggestions, however, are inevitably speculative, as the texts of Bruno's Oxford lectures appear not to have survived.

Abbott's page on Bruno's second visit to Oxford fails to account fully for all the details of an episode that he nevertheless clearly judged to have been an academic scandal. Bruno's return to London must have seemed an ignominious retreat. Fortunately, in the following year, the circle of aristocrats surrounding Robert Dudley, Earl of Leicester, offered Bruno another chance. It was this group, of which Fulke Greville was a part, that invited Bruno to discuss his Copernicanism with two anti-Copernican opponents from Oxford at a private supper to be held in London on Ash Wednesday, 1584. Was it an attempt to heal the wound? Or was it an attempt to draw out, in semi-official surroundings, this difficult and perhaps dangerous visitor? The second hypothesis would seem to assume some substance from the fact – adduced by Aquilecchia from the itinerary followed by Bruno and his friends to reach Fulke Greville's rooms in the second dialogue of his text – that the supper was held in Greville's official chambers in Whitehall and not in his private house in Holborn.<sup>33</sup> In any case, the text makes it quite clear that Leicester's circle of refined aristocrats appealed to Bruno in these early stages of his visit, although later on relationships with them seem to have become more strained.<sup>34</sup> The central figure is clearly Leicester's nephew, Sir Philip Sidney, whose humanistic culture and easy command of Italian and French are praised at length by Bruno in his text. The reader of the *Supper* is expected to

notice the difference between Oxford's rude refusal to listen to the visitor from Nola and the courteous invitation extended to him by Sir Fulke Greville, the lifelong friend and future biographer of Sir Philip Sidney.

Nevertheless, the supper itself can hardly be considered a friendly affair. The debate with the Oxford scholars invited by Greville to discuss the "new philosophy" developing in the wake of the still much suspected Copernican theory is fiercely hostile to Bruno's ideas and his followers, who have to be pacified by an embarrassed host. Perhaps that is why, when he afterwards narrates the events that took place on that evening, Bruno abandons the traditional Latin of the academic sphere and addresses what he hopes will be a more open-minded, courtly, cosmopolitan reader, offering him in *The Ash Wednesday Supper* a lively defence of "the Nolan philosophy" in his native Italian.<sup>35</sup>

The result seems to have been a general outcry. "They say of you, Teofilo, that in your *Supper*, you criticize and insult a whole city, an entire province, a complete kingdom," exclaims the character called Armesso in Bruno's next work, *Cause, Principle and Unity*. The first dialogue of this text is dedicated to what Bruno calls an apology, or something of that sort, for the publication of the *Supper*. His repentance, however, seems to be only skin deep. A few pages later, in a remarkably clear-sighted judgment of his own work, Bruno has Armesso say to Teofilo, who stands for Bruno himself: "As far as I am concerned, I have read, re-read and meditated on all you have said and (although on some points, I do not know just why, I find you a bit excessive), you seem to me for the most part to proceed with moderation, reason and discernment."<sup>36</sup>

### *The Narrative Frame*

Mi dimandarete che simposio, che convito é questo? E' una cena. che cena? De le ceneri. che vuol dir cena de le ceneri?

You will ask me: what symposium, what banquet is this? It is a supper. What supper? A supper of ashes. What does a supper of ashes mean?

These brief questions and answers are found in the scintillating *Proemiale epistola* prefixed to Bruno's text: an introductory letter addressed in his own authorial voice to the French Ambassador, Castelnau, Lord of Mauvissière. They seem designed to present Bruno's *The Ash Wednesday Supper* as a modern version of Plato's *Symposium*. This use of a Platonic source is particularly evident in the structural and formal tactics that

define Bruno's text. He does not present the reader directly with the discussion that took place during Fulke Greville's Ash Wednesday supper, but filters it through a conversation that takes place some days later. It is this conversation, concerned with narrating and commenting on the supper, that constitutes the principal dialogue of Bruno's text. The imaginary philosopher, Theophilus, is presented as having participated in the supper, and it is Theophilus who describes the event, and the principal themes discussed then, to the other three participants in the later conversation: Smithus, Prudentius, and Frulla. At the same time, Theophilus narrates the adventurous journey through nighttime London that took "the Nolan" (as Bruno calls himself in the context of the supper) and a group of his friends to Fulke Greville's rooms in Whitehall. These events, which give rise to frequent comments by the three other participants in the main dialogue, are thus presented to the reader in a series of flashbacks from constantly changing perspectives. Only in the fifth and final dialogue, between the four characters involved in the later discussion, is the supper left behind, and the cosmological theme developed directly without any further reference to Sir Fulke Greville and his guests.

These structural tactics appear to have been taken over directly from Plato's text.<sup>37</sup> Like Plato, Bruno uses a convivial banquet, or symposium, as an appropriate occasion in which to develop serious philosophical debate. Like Plato, he then narrates the original debate through the perspective of a second discussion that reviews the arguments discussed at the supper itself. He thus adopts a strategy of reinforcing the central philosophical message by "doubling" the author's presence in the work (in Plato's case tripling or even quadrupling himself through the voices of Socrates, his disciple Aristodemus, his lover Alcibiades, and the possibly fictitious wise woman Diotima, who is his instructress in the art of love). Like Plato, Bruno too "doubles" himself as "the Nolan" at the supper and Theophilus in the later conversation. He also underlines, like Plato, the comic contrasts created during the banquet between true philosophical debate and vain and empty pedantry or sophistry.<sup>38</sup>

Bruno's relationship to Platonic philosophy, however, was by no means a simple or wholly admiring one. In spite of the Neoplatonic elements already developed in an early memory work such as the *De umbris idearum*, which will continue to pervade many of Bruno's Italian dialogues culminating in *On the Heroic Frenzies*, it is clear from the *Supper* that he has already repudiated the Platonic doctrine of a transcendental sphere of ideas as the goal towards which the philosophical mind projects itself in its search for truth. This rejection is underlined by the baroque sensualism of Bruno's invocation to his English muses in Dialogue I of the

*Supper*, which finds its philosophical counterpart in the definition of his physical doctrine as one which teaches that we should not look for the divine outside ourselves, given that we have it near at hand, even within our own selves. To some extent, then, Bruno is writing an anti-*Symposium*; in the exuberant cluster of negative definitions of his banquet with which he presents his work to the French Ambassador, Mauvissière, he states explicitly that it is *not* to be read as a piece of Platonic philosophy.<sup>39</sup>

Yet the deliberate reference to the *Symposium* is far from being casual or simply critical. Bruno clearly shares, for example, the concept of love defined by Plato, in the words of Diotima to Socrates, as proper to the philosopher in his search for universal truths:

Whoever has been initiated ... in the mysteries of Love and has viewed all these aspects of the beautiful in due succession, is at last drawing near the final revelation. And now, Socrates, there bursts upon him that wondrous vision which is the very soul of the beauty he has toiled so long for. It is an everlasting loveliness which neither comes nor goes, which neither flowers nor fades, for such beauty is the same on every hand, the same then as now, here as there, this way as that way, the same to every worshipper as it is to every other.<sup>40</sup>

Initiation through love of the beautiful and true leads to an entirely new concept of the universal whole contemplated in due and orderly succession by a mind now liberated, in an exalted sense of freedom and illumination, from slavery to base and distorted forms of vision. Bruno takes this theme over directly from Plato, even if the terms of the vision achieved have been overturned. For this is the spirit in which Bruno leads his reader into his post-Copernican, infinite universe. Bruno's is a universe whose truth and unity lie not (as Plato's does) in a static perfection conceived of as beyond the natural world, but in an ordered and natural mutability. And if the mutation is true, Bruno had written in his early comedy *Candelaio*, "everything which is, either is here or there, either near or far, either now or to come, either early or late."<sup>41</sup> Here we have a clear reversal of the Platonic text cited above. Not Plato's transcendental sameness, but an infinite natural process of change and variety characterizes Bruno's universe of truth.

In the *Supper*, Bruno also reverses the order of argument followed by Plato in the *Symposium*, for he describes his sphere of truth in the effect it produces on the inquiring mind before proceeding to argue the physical and logical premises on which it is based. So we find, in the first dialogue, or exordium, in the words of Theophilus, the series of celebrated

passages in which Bruno evokes the liberating effect of the Nolan philosophy:

Then what shall be said of the man who has found the way to fly into the sky, to leap over the circumference of the stars, and to leave behind him the convex boundary of the universe?

He has released the human spirit with its capacity for knowledge from its false prison of turbulent air where the distant stars could only be seen as if through narrow chinks.

Here, then, you see the man who has soared into the sky, entered the heavens, wandered among the stars, passed beyond the boundaries of the universe, effaced the imaginary barriers ...

There is no such thing as a “logical” method of having new ideas, or a “logical reconstruction” of the process. So wrote Karl Popper in *The Logic of Scientific Discovery*. To illustrate his point, he quoted from the greatest revolutionary scientist of the twentieth century, Albert Einstein, who, when speaking of the search for those universal laws from which a picture of the world can be obtained by pure deduction, claimed: “there is no logical path leading to these ... laws. They can only be reached by intuition, based upon something like an intellectual love of the objects of experience.”<sup>42</sup> It is in terms such as these that Bruno presents his vision of a newly infinite universe, populated by an infinite number of solar systems similar to our own, almost as if he were overcome by the beauty of his own construction. He is aware of that universe as revolutionary, and concedes full recognition to the fact that the revolution that put the sun instead of the earth at the centre of our own solar system was ushered in by Copernicus, whom he considers a man capable of profound and mature reasoning: “He can be numbered among those whose fertile genius has enabled them to rise up and hold their heads high under the benign glance of the divine intelligence.” Yet Bruno is equally concerned to underline the originality of his own image of an infinite universal order that rejects many of the traditional characteristics of the closed Aristotelian-Ptolemaic cosmology that were still accepted by Copernicus. It is this double dimension of Bruno’s work, as the presentation and defence of Copernicus’s new cosmology, which in both Catholic and Protestant Europe was still being bitterly derided and attacked – or at most accepted as a purely mathematical hypothesis – and, at the same time, as an extension of that theory into a different and original image

of universal order, that makes of *The Ash Wednesday Supper* such a complex and crucial text.

Why, then, a supper of ashes? And as Bruno himself asks: What does a supper of ashes mean? As an ex-friar, Bruno was fully aware of the manifold Christian implications of Ash Wednesday, the first day of Lent when Christians remember that Jesus spent forty days in the desert where he was repeatedly tempted by Satan. The ashes stand for repentance: "For I have eaten ashes like bread, and mingled my drink with weeping," sang David in his Psalms (quoted by Bruno from the Latin Vulgate: "cinerem tamquam panem manducabam").<sup>43</sup> Bruno asks provocatively if ashes had been served at Fulke Greville's supper, answering his own question with an unequivocal: "No." Nevertheless, the Catholic ceremonial of covering the head with ashes to remind the believer of his mortality, and to initiate the period of penitence which will last throughout Lent, is recalled, often with ironical undertones, more than once in his text. But who is to do the penitence in this English and Protestant context? Perhaps the neo-Aristotelian doctors from Oxford who were so rashly assuming that the new cosmology was nonsense, if not worse? Or maybe Bruno himself? For in the narration in the second dialogue of the long and meandering journey through the turbid waters of the Thames and then through the muddy darkness towards the Strand and Whitehall – which takes him and his friends at least twice as long as it should – Bruno seems to be reproaching himself with losing precious time in the obscure labyrinths of scholastic dispute.<sup>44</sup>

And then, what kind of Ash Wednesday is this in Protestant London, where instead of fasting there is eating and drinking, and worldly vanity of all kinds, which Bruno mockingly condemns? But the model that inspires his condemnation is surely, once again, the Socrates of the *Symposium*, rather than a return to Catholic ideas of Lent and the Mass.<sup>45</sup> For Bruno is the new philosopher who, on the mountaintop of rigorous speculation into universal truth, is writing in the ashes of a sacrificial fire (which has consumed the old Ptolemaic cosmology) the order of a new universe which is infinite and eternal, and contains within it the form of its own divinity. Bruno is hurt and disappointed that the other guests at the supper are unable to understand the extraordinary importance of what he is telling them. For, as he writes in Dialogue III of the *Supper*:

the whole of this island of Britannia is a mountain which rears its head above the waves of the Ocean. The crest of this mountain is to be considered the highest place in the island; and if this crest were to reach the zone of tranquil

air, it would prove that this is one of those very high mountains, where the place of the happiest living things is perhaps to be found. Alexander of Aphrodisias writes about Mount Olympus, where the behaviour of the sacrificial ashes demonstrates it to be an example of a very high mountain, whose air lies above the limits and regions of the earth.

Alexander of Aphrodisias, in his comment on the *Meteorology* of Aristotle, repeats the well-known legend that characters traced in the ashes of fires lit on very high mountains have been found the next year undisturbed.<sup>46</sup> Bruno is using the legend to show that high above the earth there is still air. Although purified air, it nevertheless moves around in an orbit together with the earth. At the same time, Bruno is also suggesting that the story he is telling, in “this island of Britannia,” like those sacrificial ashes on Mount Olympus, will remain intact for many years.

Yet there is clearly a sense in which *The Ash Wednesday Supper* remains a Lenten text. It is not without Christian reminiscences that Bruno describes his challenge to the traditional cosmology as, in Dialogue II of the *Supper*, he wryly pushes his way through the streets of what appears to him as an increasingly hostile and punitive London, towards his appointment with Fulke Greville and his friends:

This evening I have been in the desert where I have gained forty thousand years of full remission of my sins, not for one or three but for forty temptations ...

Whatever public or private transgressions Bruno had in mind here, *The Ash Wednesday Supper*, which opens his sequence of philosophical dialogues in Italian, appears to be the moment in which he decides to dedicate himself to the purification of a rigorous intellectual inquiry. Furthermore, the passage quoted above would seem to indicate that his inquiry was linked in his mind to the number four and its multiple meanings. The number four in the context of Pythagorean number symbolism – which Bruno at times refers to as something deeply embedded in the culture of his time – signified the unlimited vastness of universal being, given that the monad (the one and all), the dyad (or the number two introducing plurality), with the triangle of the triad, all added together with the tetrad (a group of four) give rise to the number ten, or a decade, and with it to all possible numbers and unlimited measure.<sup>47</sup> Bruno is thus ironically linking the number of his sins to the transgressive nature of his new cosmological inquiry, which proposes an infinite universe containing within it all possible forms of movement and life.



### *The Infinite Universe and Worlds*

Pure di nuovo gli confermava che L'universo è infinito. Et che quello costa di una immensa etherea reggione. E' veramente un cielo, il quale e' detto spacio et seno, in cui sono tanti astri che hanno fissione in quello, non altrimenti che la terra.

And so once again he repeated that the universe is infinite; that it consists of an immense, ethereal region; that it is really one sky called space, or a container, in which many stars are situated just like the earth.

The new cosmology proposed by the Nolan at Fulke Greville's Ash Wednesday supper, and further developed and commented on by Theophilus and his companions in the principal dialogue of Bruno's text, can be considered a radical but not uncritical reading, and an extension to infinity, of Copernicus's astronomical revolution. It has been the source of an intensely debated discussion from Bruno's time until ours.<sup>48</sup>

"A student of mathematics rather than of nature": this stringent criticism of Copernicus, which Theophilus himself voices in the first dialogue of the *Supper*, underlies all Bruno's reasoning when, in the third and fourth dialogues, the Nolan is finally presented at the supper table in debate with the two neo-Aristotelian doctors from Oxford, Nundinius and Torquatus. The Nolan disagrees with Nundinius, who argues, as almost all his contemporaries were doing, that Copernicus never believed in the earth's movement anyway, but only assumed it as a mathematical supposition on which to base new and more precise astronomical calculations.<sup>49</sup> This hypothetical interpretation of Copernicanism had been powerfully supported by the anonymous preface added just before publication to the dying Copernicus's *On the Revolutions of the Heavenly Spheres*.<sup>50</sup> The name of the author of this preface – the Protestant theologian Andreas Osiander – would only be revealed in public by Kepler in 1604. Bruno appears not to have known who wrote it, although he was the first to suggest in print that it was surely not written by Copernicus himself. For the Polish astronomer in his own introductory letter to Pope Paul III claims that he is proposing a physical thesis as well as a mathematical one.<sup>51</sup> Theophilus (Bruno's mouthpiece in the *Supper*) insists that Copernicus fulfilled not only the task of the mathematician who supposes but also that of the physicist who demonstrates the multiple movements of the earth. But if, on one hand, Bruno refuses to align himself with the reductive interpretation of Copernicanism proposed by

Osiander and accepted by Nundinius, on the other he accuses Copernicus of having understated the physical implications of his astronomy. What Bruno is complaining of is the excessive caution that led Copernicus to make his book so mathematically sophisticated that it was only comprehensible to erudite astronomers.<sup>52</sup> These, in turn, were prone to miss, or simply ignore, the new cosmological physics that it contained. It is a new cosmology that lies at the centre of the *Supper*, which Bruno supports with both reasoned arguments and imaginative vision, underlining – rather than understating – the revolutionary aspects, within the culture of his time, of the newly heliocentric universe that he is extending to infinite dimensions.

In the third dialogue of Bruno's text, the Nolan and Nundinius are described during their discussion at the supper as not disagreeing only in their opinions of Osiander's hypothetical reading of Copernicus's astronomy. Theophilus, in his later conversation with his three friends, narrates the terms of a more complex clash of opinions, involving multiple aspects of the new cosmological theory. Theophilus himself then goes on to debate with his English companion Smithus about further aspects of Copernicus's *On the Revolutions of the Heavenly Spheres*, establishing the principal terms of Bruno's reading of the new astronomy. After pointing out that the heliocentric theory had already been considered seriously by earlier philosophers such as the Pythagoreans, Plato in the *Timaeus*, and the fifteenth-century Cardinal Nicholas Cusanus in the second book of his *De docta ignorantia*, Theophilus points out that the Nolan's reading of Copernicus rests on quite different principles from those put forward by the Polish astronomer. The following pages make it clear that these principles are based on physical and optical arguments rather than on mathematical calculation. Commentators have frequently pointed out that Bruno had little mathematical training, and proposed a mathematical doctrine that seemed eccentric within the cultural framework of his day. His mathematical naivety is sometimes considered so great as to be shocking to the modern mind.<sup>53</sup> Yet he manages to make it into a virtue by insisting, at a delicate point in the reception of the Copernican astronomy, on the validity of the new theory as a physical and cosmological model rather than a mathematical one.

Theophilus tells Smithus that the Nolan's cosmology is based on what he calls "a true optics" and "a true geometry." These replace the false optics and false geometry which study the sky in terms of pure mathematics, determining the size and position of the heavenly bodies without taking into due consideration non-mathematical variables such as the degree of luminosity of the celestial bodies, or their relative positions

with respect to each other and to the observer.<sup>54</sup> Bruno's "true optics" may be based on very elementary considerations, such as the matchstick held up to the eye in the light of a distant candle, which in certain positions disappears from view. However, he uses these considerations to great effect by claiming that there may be many bodies even in the visible ranges of the sky which defy our powers of vision, as well as many more beyond the range of human sight. This was denied by the traditional Aristotelian-Ptolemaic astronomy that identified the heavens with those bodies visible to the sight. It was, however, shortly to be confirmed by Galileo's telescopic sightings of the moons of Jupiter, which are invisible to the naked eye.

Bruno gives his reader no idea of what sources he was using for his optical reasoning in the *Supper*. It seems very probable, however, that his Parisian years had brought to his knowledge the *Praefatio de usu optices* of Jean Pena, the preface to his edition of Euclid's *Optica* published in Paris in 1557.<sup>55</sup> Although Pena formally repudiated the Copernican astronomy in the final lines of his Preface, he nevertheless refers to Copernicus's great mind, and discusses his version of the movements of the earth. Pena considered these movements as being demonstrable through correct optical reasoning, as Bruno does in the third dialogue of the *Supper*. Furthermore, Pena's demonstration that there is no refraction of light as it passes from the higher regions of the sky to the elemental regions below the moon (even if this would later prove to be mistaken, according to the more precise observations of Tycho Brahe) was influential in leading to the repudiation of Aristotle's heavenly quintessence, as well as of the solid, revolving heavenly spheres which were presumed to carry the stars and planets around with them in the sky.<sup>56</sup>

Another book that Bruno seems to be using is the *Optics* of Alhazen (Ibn Al-Haytham), an Arabic astronomer and mathematician who was born in Iraq and was active in Cairo in the first half of the eleventh century. The Latin translation of his work, known as the *Perspectiva*, was published in a Renaissance edition of 1572 by Friedrich Risner at Basel, and was widely used by the natural philosophers of the end of the sixteenth and beginning of the seventeenth centuries.<sup>57</sup> The Ninth Earl of Northumberland, whose library contained the most important collection of Bruno's texts in Renaissance England, attributed to a reading of Alhazen's book the change of his life from a frivolous courtier to a dedicated natural philosopher.<sup>58</sup> In chapter 7 of the third book of the *Perspectiva*, in a section entitled "The Ways in Which Sight Errs in Inference," Bruno could have found many of the arguments he uses to establish his new cosmology in the *Supper*. Alhazen, for example, would have taught him

that “the distance from which sight can perceive visible objects and the distances at which they become invisible vary with the lights existing in those objects.” Alhazen would also have taught him that the most distant stars, or those that lie at what he calls “immoderate distances,” seem all to lie at roughly the same distance from us because we see them in the same plane, whereas in fact the distances between them may be enormously large. This is an argument that undermines the existence of the traditional eighth or outer sphere of the universe, containing within it all the so-called “fixed stars”; it opens the way for Bruno’s claim that universal space is infinite, containing an infinite number of largely unseen worlds.

Bruno’s strongest defence of heliocentricity itself comes at the end of the third dialogue that reports the Nolan’s discussion at the supper with Nundinius. Here he finds himself up against the objection that, as Theophilus sarcastically remarks, had already filled up innumerable scraps of paper; for it went back to Aristotle himself, and had been repeated by Ptolemy in the *Almagest*.<sup>59</sup> That is the argument that if the earth revolves eastwards on its own axis, the clouds must always appear to move towards the west. Similarly, if the earth also moves around the sun, the clouds should all be left behind. In reply to this claim, Bruno finds precedents in other texts of Aristotle, particularly his *Meteorology*, and even more clearly in Plato’s *Timaeus*, to justify the idea that the winds and the clouds are part of the earth’s atmosphere and circle with it as if in a giant lung. At this point Smithus takes the argument further, asking how the Nolan would reply to another more cogent anti-heliocentric argument, also anticipated by Ptolemy: that if the earth moved, an object dropped perpendicularly from a height would be left behind by the movement of the earth.

Copernicus himself, as has been pointed out by Paul-Henri Michel in his study of Bruno’s cosmology, dealt with this point by calling to his aid the traditional Aristotelian concept of the natural place of things.<sup>60</sup> That is to say, he posited the concept of an essential “sameness” between the object dropped and the matter of the earth that would ensure that they “stayed together.” Theophilus, however, talking to Smithus in Bruno’s dialogue, argues independently of both Aristotle and Copernicus. He imagines the earth as a ship in movement in the unbounded ocean of space. Then (probably going back to the fourteenth-century impetus theories developed in Paris) he deduces the fact that a man on the shore throwing a stone directly towards a moving ship will miss it, while a man on the mast who throws a stone perpendicularly into the air will (if the ship is not rolling) see it fall to the foot of the mast. Bruno’s explanation

of this phenomenon refers to the impetus that the movement of the ship has impressed on the stone thrown from the mast. In this application of the impetus theory to a moving earth, Bruno is interested in the relativity of the situations presented by the man on the shore and the man on the mast. He understands that they represent two separate reference frames of movement, and that such relativity must be taken into account in the consideration of moving bodies in space.

The fourteenth-century Parisian debate on the impetus theory contemplated the possibility of a diurnal rotation of the earth around its own axis, rather than the Ptolemaic diurnal rotation of the sphere of the fixed stars around a stationary earth. There was, however, no questioning of the central position of the earth within the whole. Nevertheless there was much interest in the relativity of moving bodies in space. Buridan, in his comment on Aristotle's *Physics*, developed a theory of impetus to account for moving projectiles: "Thus we can and ought to say that in the stone or other projectile there is impressed something which is the motive force of that projectile." Nicholas Oresme applied this impetus theory to an explanation of the vertical drop of the stone from the mast of the ship, and studies by Marshall Clagett and others have demonstrated how the echoes of this fourteenth-century Parisian discussion were still distinctly present in the sixteenth-century, post-Copernican cosmological debates. This page of Bruno's has been placed in a line of development that, from the French precedents, will pass through the *Supper* to Kepler and Galileo.<sup>61</sup> It would, however, be a mistake to overemphasize Bruno's dependence on these French precursors. Giovanni Aquilecchia has pointed out that the ship experiment can also be found in the translation of and comment on book I of Copernicus's *De revolutionibus* by Thomas Digges, the *Perfit Description of the Coelestial Orbes*, added in 1576 to his father Leonard's *Prognostication everlastinge*.<sup>62</sup> Nevertheless, by applying an impetus theory to a post-Copernican universe where the earth not only revolves around its axis but also moves freely around the sun, Bruno's concept of relative mechanical systems in space becomes one of his most advanced scientific intuitions, which justifies his claim that he is not just concerned in the *Supper* to provide a commentary on Copernicus's book.

Bruno's dialogue opens up the whole question of relative frameworks of motion within a universe that has lost forever the unique point of reference supplied by a central earth in the Aristotelian-Ptolemaic cosmology, and, in Copernicus's universe, by the sun.<sup>63</sup> In the fifth dialogue of the *Supper*, Bruno refines his doctrine of movement. Parts move in a straight line towards their respective wholes according to the force of gravity, while the whole bodies in universal space, or the stars and

planets, move in circles (although never perfect ones) around their suns according to an internal thermodynamic impetus which satisfies the necessities of the life evolving on their surface. These principles governing the movements of the parts and the wholes of bodies in space bear a clear relationship to the thermodynamic cosmology of Bernardino Telesio of Cosenza, a contemporary natural philosopher whom Bruno much admired. They are also related to Copernicus's theory of gravity, but are transposed by Bruno to the context of an infinite universe filled with an infinite number of solar systems similar to our own.<sup>64</sup>

In the central third proposal of the central third dialogue of the *Supper*, right at the heart of his work, the Nolan, arguing against his neo-Aristotelian opponent from Oxford, Nundinius, puts forward three arguments to justify his claim of an infinite universe: (1) that there is no perfectly circular movement in nature, and that therefore the Aristotelian-Ptolemaic universe of revolving spheres is no more than a fiction; (2) that when we contemplate the universe we are struck by no sense or evidence of limits or boundaries; (3) that the universe as the effect of an infinite cause must itself be infinite. Although Bruno merges all three arguments into one discourse, it may be noticed that they are not all of equal validity in support of his thesis. The appeal to experience in (2) is clearly primarily imaginative, and can carry little or no scientific weight given the kinds of distance involved. As for (1), it weighs against the Aristotelian-Ptolemaic "closed" cosmology, founded on the idea of perfect circular movements of the heavenly bodies, but fails to prove that an alternative cosmology would necessarily be infinite. The strongest argument of the three is certainly the third, the so-called argument of plenitude or sufficient reason, which Bruno returned to again and again throughout his life with undoubted rhetorical and logical efficacy.<sup>65</sup> The argument is anti-Christian, for it binds God to create necessarily in infinite terms, and eliminates the idea of a specific act of creation in a definite moment of time. In his search for an alternative creationist (or anti-creationist) myth, Bruno constantly uses the Hermetic image of an infinite sphere whose centre is everywhere and whose circumference is nowhere: the infinite universe thus becoming, throughout, a seal or sign of God's eternal and infinite goodness and power.<sup>66</sup> The argument of plenitude is thus not without Hermetical implications, although it needs to be stressed that Bruno uses it as the starting point of a cosmology which, as Alexandre Koyré correctly noticed, implies a new cosmic physics. Robert Westman has also pointed out persuasively the ways in which Bruno's cosmology differs radically from that of the other Renaissance Hermeticists. Nevertheless, Bruno never separated his naturalistic

pantheism from his natural philosophy, uniting the two through his philosophical concept of the “contraction” of the divine into the infinite number of individual bodies that make up the universal whole.<sup>67</sup>

The argument of plenitude is open to an objection which, in another context, Bruno makes against Nundinius: that is, that it presupposes its own principle – i.e. that there is in fact an infinite, intelligible cause. Bruno considers this principle a logical and physical necessity, for without a principle of divine unity or light to bind together the infinite vicissitudes of infinite space, there would be no possibility of knowledge or of meaningful action within the natural world. However, it is clear that once the infinite universe becomes the place in which a divinely infinite cause unfolds itself eternally in physical terms, the tendency to identify the divinity with the infinite substance of the universe itself becomes increasingly strong. The precise relationship of such a universe to its metaphysical cause becomes a problem fraught with uncertainties, and it is to this problem that Bruno will address his philosophical speculation in his second and third Italian dialogues written and published in London: *Cause, Principle and Unity* and *The Infinite Universe and Worlds*.

By the end of the third dialogue of the *Supper*, it has become abundantly clear that Bruno is arguing from entirely different and new positions with respect to what in his day were considered the normal, cosmological paradigms. In the fourth dialogue of this work he debates against the theologian Torquatus rather than the more scientifically minded Nundinius; his problem is to persuade his opponent not only that more than one cosmological model may be reasonably contemplated, but also, more difficult still, that more than one theological context may be considered as the metaphysical basis and foundation of the models being considered. In this dialogue a number of passages occur which have been amply commented on by Frances Yates in her early essay on “The Religious Policy of Giordano Bruno.” They are exchanges between the Nolan and Torquatus that appear at first sight as “irrelevant questions” or “disconnected queries” within the cosmological discussion being developed.<sup>68</sup> Yates believed that these passages acquire meaning within the dialogue only if they are interpreted as oblique references to a Hermetic religion which became, in her later reading of Bruno, the real purpose and meaning not only of these passages but of the whole of the *Supper*. The passages underlined by her are indeed of extreme interest, and not without Hermetic points of reference, although it is questionable whether Bruno is primarily concerned here with advancing any one religious or philosophical doctrine of his own. Rather he seems to

be arguing for a logical relativity in the sphere of religion with which to complement the relativity that will necessarily characterize any form of scientific discourse within his new, infinite and centreless universe.<sup>69</sup>

The problems arise when Torquatus, quoting the title of a well-known adage of Erasmus, barks out in Latin to the Nolan: *Anticyram navigat*. Anticyra was the classical island of the mad, and Torquatus is impatiently branding Bruno's new-fangled cosmology, as the dons had already done earlier at Oxford, as an extreme form of madness. Theophilus, in his comment on Torquatus's insulting remark to the Nolan during the supper, replies: yes, the Nolan may be seen as one who travels to Anticyra, but he goes there to gather the herb hellebore, which was traditionally thought to cure madness. That is to say, Theophilus launches the same insult against Torquatus himself, claiming that he is the madman whom the Nolan is trying to heal. This may seem to get the discussion nowhere, but in the following pages Bruno explains that the kind of debate he wishes to develop will inevitably seem madness unless some attempt is made to accept that more than one paradigm or context of thought can be valid, in cosmological discussions as in theological ones. This logical relativity is totally incomprehensible to Torquato, who insists on reasoning only in his own Christian-Aristotelian terms, comforted by the fact that they were also the terms generally accepted by his culture and his times. He therefore asks Bruno where the apogee (or the most distant position of the sun from the earth) lies on the equinoxes of Cancer and Capricorn, and is surprised when he gets the apparently senseless answer that it can lie wherever he likes. When Torquatus repeats his question, Bruno's reply becomes even more extravagant; he asks Torquatus in Latin how many sacraments there are in the Church. He then tells Torquatus what the positions of the apogee are, but finishes the exchange by claiming that they could be above the steeple of St Paul's cathedral.

Although Frances Yates claims that these exchanges between the Nolan and Torquatus during the supper only become comprehensible if they are "translated" into a proposal for a Hermetic religious reform, Theophilus in the dialogue with his three friends comments on them in rather different terms. He explains to Smithus that Torquatus has formulated his question incorrectly; if someone is proposing a heliocentric cosmology, it is the apogee of the earth which is relevant, not that of a now stationary sun. It could similarly be pointed out that when the Nolan asks Torquatus how many sacraments there are, he is concerned to point out once again that the correct answer will depend on the relative position of the person who replies: in the Catholic religion and in



the Protestant churches, the number of sacraments is different. Similarly, the steeple of St Paul's does not represent the only possible or known religious doctrine, even within the context of Christianity. By invoking the sun over the steeple, Bruno is certainly reminding his readers of those forms of sun worship that governed the positions of Greek temples, or of Druid ones like Stonehenge, as well as the Egyptian sun worship praised in the Hermetic texts. However, his point here is clearly to establish a plurality of possibilities as the basis of a discussion of both cosmological and religious issues, rather than to affirm any one doctrine as dominant or unique. In this sense, these passages can be seen as the logical consequence of Bruno's opening gambit in this dialogue, where the geocentric certainties of the cosmology of the Bible are referred to as the major obstacles to a serene discussion of the new heliocentric astronomy: a prophetic premonition of Bruno's later trial and the Galileo affair of the coming century.<sup>70</sup>

Bruno's reply to this problem is to underline how the biblical texts that were being used to support the traditional Aristotelian-Ptolemaic cosmology had been interpreted over the centuries in numerous different ways – literally, allegorically, and metaphorically – by theologians of different religions and schools of thought. This bewildering plurality of interpretations suggests to him that the Bible should correctly be approached as a literary text deriving from a particular historical situation, useful for the moral instruction of the masses, rather than as a divine and unquestionable source book of natural philosophy. This stand makes Bruno into an interesting precursor of some more modern approaches to biblical studies, but was clearly well in advance of anything that could seriously be accepted by the Oxford dons at the end of the sixteenth century. The Catholic Inquisitors would be equally negative both with Bruno and with Galileo during their trials, insisting that biblical authority cannot be denied in questions pertaining to astronomy or cosmology. It is to the credit of the Sidney circle that they nevertheless agreed, although with considerable concern and occasional scorn, to listen to the Nolan's story.

### *The Movements of the Earth*

Peró se volete compiacermi venite presto ad specificarme i' moti che convergono á questo globo.

So that if you wish to do me a favour, you should now give me a precise account of the movements which are appropriate to this globe.

In the fifth and final dialogue of the *Supper*, composed almost entirely of the final exchanges in the dialogue between Smithus and Bruno's mouthpiece Theophilus, the movements of the earth around the sun in the new cosmology are considered as the foundation stone of Bruno's infinite universe. Smithus claims that they should not be treated as a digression, but as the principal matter of discourse, for it is precisely as an infinite series of solar systems that Bruno's infinite universe is conceived.

These pages of Dialogue V constitute the second discussion by Bruno in this work of the earth's movements around the sun. The first account is given at the end of the fourth dialogue, and is presented as matter of discussion during the supper itself. It is convulsed and agitated by the continuous, disbelieving exclamations of the neo-Aristotelian doctors, and the only slightly more courteous attention of the other guests. Moreover, it contains a mistaken reading on Bruno's part of Copernicus's account of the movement of the moon around the earth. It is not surprising if it has caused considerable confusion among Bruno's commentators.<sup>71</sup>

Torquatus starts things off in Dialogue IV by calling for pen and paper and drawing an elementary diagram of both the Ptolemaic and the Copernican systems on the same piece of paper. The Nolan immediately accuses him of inaccuracy for his drawing of the Copernican system. Torquatus (the Nolan complains) puts the earth at the centre of the epicycle of the moon on the third sphere from a now central sun, and the moon on the circumference of the epicycle centred on earth. The Nolan objects – quite rightly – that such a solution would lead to the diameter of the sun appearing from earth the same throughout the year, given that the distance of the earth from a central sun would remain always the same. Copernicus had considered precisely this problem in book III of *De revolutionibus*, and had proposed two possible geometrical solutions. The first was that the sun should be placed slightly off centre with respect to the whole universe. If the earth then revolves around the geometrical centre in a perfect circle, its distance from the sun will vary constantly, and the sun's diameter will appear to vary during the course of the year. An alternative solution, which gives the same mathematical results, is to keep the sun at the geometrical centre of the system, putting the earth on the circumference of an epicycle whose centre revolves around the sun (see fig. I).

Bruno, in the course of this discussion, fails to refer explicitly to book III of *De revolutionibus*, or to distinguish between these two ways in which Copernicus had proposed solving the problem of the sun's apparently varying diameter. He presents the Nolan simply as warning Torquatus that, according to the illustration he has drawn, such a problem exists

and requires a correction that he himself then incorporates into the diagram published in his text. The published diagram thus shows the earth on the circumference of the moon's epicycle, and not at its centre, where Torquatus had placed it. Incredulous, Torquatus asks for Copernicus's book to be called for, and triumphantly shows the guests that the diagram at the beginning of *De revolutionibus* is similar to his: that is, it places the earth (represented by the point at the centre of the moon's epicycle) on the circumference of a perfectly circular orbit drawn around an exactly central sun (see fig. II).

Theophilus's comment on this apparent defeat of the Nolan at the supper table is that the diagram in Copernicus's book should not be read as astronomically valid. What matters is his text, which he doubts if Torquatus has read. It is not clear if Bruno himself was aware that the diagram of the new universe published in book I of *De revolutionibus* (as in fig. II) was not drawn by Copernicus himself, but almost certainly by his pupil Rheticus. It was only meant as a schematic representation of the Copernican universe, without the scientific exactitude supplied by the diagrams illustrating the two hypotheses considered in book III of his text.<sup>72</sup> There, Copernicus claims that it is impossible to know which of his two hypotheses concerning the earth's movement around the sun is correct as a description of the real shape of the universe. Bruno fails to comment explicitly on this point in the *Supper*, although the diagram he publishes at this point of his text (see fig. I) makes it clear that he is opting himself for a truly heliocentric universe that places the sun at its geometrical centre. This choice will be confirmed in the later *De immenso et innumerabilis* (*On the Immense and Innumerable*), where Bruno explicitly claims that the idea of the sun at an eccentric position with respect to the geometrical centre of the universe is not acceptable in realist terms. He must already have been of this opinion when he wrote the *Supper*, as in his diagram of the solar system he places the earth on the circumference of an epicycle centred on a circular orbit around a central sun. The problem arises when Bruno – having interpreted one aspect of Copernicus's thought more correctly than Torquatus – then goes on to place the moon on the circumference of the same epicycle as the earth. This would seem to make nonsense of the phases of the moon and of its movement around the earth. In order to save these lunar phenomena, Copernicus himself had placed the moon on a further epicycle, or an epicycle, centred on the circumference of the epicycle containing the earth.<sup>73</sup>

Bruno fails to correct his lunar mistake when he returns to the problem of the movements of the earth in Dialogue V of the *Supper*. Rather, he makes things simpler by entirely ignoring lunar theory. He is dealing

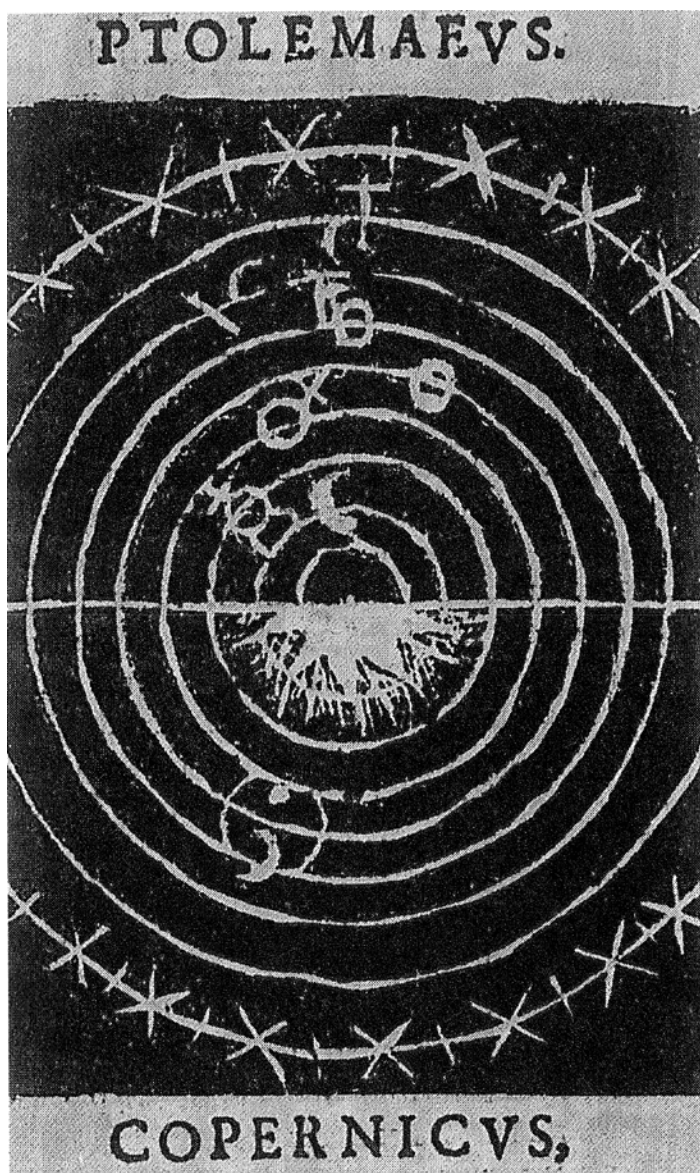


Fig. I From *La cena de le ceneri*, Dialogue IV. The lower part of the diagram represents Bruno's correction to Torquatus's representation of the Copernican system. © The British Library Board, C.37.c.14.(2.), p. 98.



Fig. II Diagram of the universe in Nicholas Copernicus, *De revolutionibus orbium coelestium*, Liber I, cap. X, fol. 9v. The diagram is reproduced from the 2nd ed. of 1566 (Basilea: Henricpetrina), permission of the Biblioteca Casanatense, Rome, call no. II XII 65. This copy contains a handwritten inscription that suggests it may have belonged to Bruno himself. By kind concession of MiBACT, Ministero dei Beni e Attività Culturali. Reproduction of this image by any means is forbidden.

now only with the movements of the earth around the sun. Furthermore, the discussion is now confined to the later dialogue, with Theophilus and Smithus as the principal speakers. The interference previously caused during the supper itself by the neo-Aristotelian doctors thus no longer confuses or distorts the issue of debate. The pages in Dialogue V of the *Supper* discussing the different movements of the earth around the sun are an important part of Bruno's cosmology, and of his whole concept of an infinite universal vicissitude. Their essential importance to the whole work is stressed by Smithus, who claims that they should not be presented in the form of a digression, but as a major aspect of the central argument of the whole work.

Bruno's definition of the four motions of the earth around the sun in Dialogue V of the *Supper* still has to receive a full and fair interpretation. The first to try to do so was Felice Tocco in his still essential volume of 1889, *Le opere latine di Giordano Bruno esposte e confrontate con le italiane* (*Giordano Bruno's Latin Works Compared with His Italian Works*). An admirer of Bruno's natural philosophy, which he considered a serious precursor of Galileo's new science, Tocco admitted to being stumped by Bruno's account of the motions of the earth. He therefore asked the opinion of Schiaparelli, one of the foremost astronomers of his time. Schiaparelli, however, simply brushed the problem aside impatiently as uninformed and confused, claiming that neither Bruno's reasoning nor his terminology had any scientific value.<sup>74</sup> This judgment, coming from such a scientifically prestigious source, has cast a long shadow over all future discussions of these pages. Several decades later, Frances Yates, in her Hermetic interpretation of Bruno, was equally keen – although within a different intellectual context – to deprive Bruno of any technically valid scientific reason. For Yates was convinced that Bruno's Copernicanism functioned only as a "Hermetic seal hiding potent divine mysteries."<sup>75</sup> The so-called "Yates thesis" has contributed a further and – for many readers – final blow to any attempt to read these pages as a valid contribution to the post-Copernican astronomical discussion.

Here an attempt will be made to reverse these negative judgments. I will be claiming that in Dialogue V of the *Supper* Bruno defines the four motions of the earth around the sun on the basis of a serious reading of *De revolutionibus*, and particularly of book III, where Copernicus formulates his new account of the precession of the equinoxes. For Bruno correctly understood the Copernican revolution in astronomy as a new celestial physics that attributed to the earth movements around the sun (including very long-term ones such as the precession) that were previously understood and calculated as movements of the celestial spheres

around a central earth. At times, indeed, Bruno corrected Copernicus in the light of new theories, particularly concerning comets, which had been emerging in the forty years that separated the publication of Copernicus's book from his own *Ash Wednesday Supper*. On the other hand, Bruno made no attempt to follow Copernicus in his remarkable, if extremely complex, computational achievements. Clearly technically unprepared to do so, Bruno in this matter makes a choice that also derives logically from a judgment expressed in some previous pages of the *Supper* when he claims that Copernicus was too much of the mathematician and not enough of a natural philosopher. It was the new celestial physics that interested Bruno, not the calculations, which he was content to leave to the professional astronomers, both ancient and modern.

Not all discussion of Bruno's four motions of the earth in *The Ash Wednesday Supper* has been negative. Paul Henri Michel, in his valuable volume on Bruno's cosmology, first published in a final version in French in 1962 (so two years before Yates's *Giordano Bruno and the Hermetic Tradition*), was still writing in the shadow of Schiaparelli's savage attack on Bruno. Without even going into the details of Bruno's definitions of the four motions of the earth, he agrees with Schiaparelli that the reasoning behind them is confused and seriously inexact. On the other hand, Michel does try to salvage some of the general principles supporting Bruno's definition of the four motions of the earth. He underlines that Copernicus's own account, in particular concerning the precession of the equinoxes, is in itself inexact; Copernicus continued to think of the circular orbit of the earth around the sun as requiring a movement that he called an "inclination" (*motus declinationis*) in order to maintain its axis at the same angle with respect to its orbit throughout its annual revolution.<sup>76</sup> Copernicus himself illustrates this concept with a diagram (fig. III) showing the geometrical co-ordinates of the movement of inclination required (according to a cosmology founded on the idea of solid orbs to which each planet remains fixed) to account fully for the unvarying inclination of the earth's axis during the circular path of the earth around a central sun. Bruno, however, was one of the first to claim that a body hanging freely in space (i.e. not fixed to a celestial orb as Copernicus still believed) would freely maintain its axis in the same position with respect to its orbit: a dynamic principle that would later be confirmed by Galileo. Bruno thus substantially modifies the Copernican discussion of the motions of the earth by eliminating the motion of "inclination." Michel's emphasis on the importance of Bruno's correction to Copernicus in this sense makes a positive contribution to the discussion of Bruno's

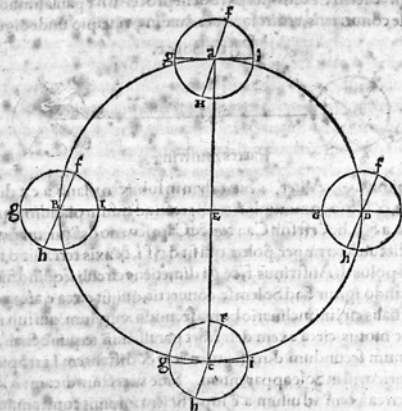
motions of the earth that contrasts curiously with his still obsequious respect for Schiaparelli's criticisms.

Alfonso Ingegno, in his volume of 1978 on *Cosmologia e filosofia nel pensiero di Giordano Bruno*, made another important contribution to the discussion by concentrating attention on Bruno's third and fourth motions of the earth in *The Ash Wednesday Supper*. The first two motions, as Ingegno points out, follow quite closely the outlines of Copernicus's discussion of the daily rotation of the earth about its own axis and of the annual rotation of the earth about the sun. The crux of the matter, however, concerns Bruno's discussion of the third and fourth movements, which Ingegno correctly related to Copernicus's account of the precession of the equinoxes in book III of *De revolutionibus*. Indeed, Ingegno was one of the first to claim that Bruno must have read these pages of Copernicus with care.<sup>77</sup> At that point, however, Ingegno concentrated his attention on what he took to be essentially a criticism of Copernicus on Bruno's part. Ingegno took the central aspect of Bruno's reading of Copernicus on the precession of the equinoxes to be the affirmation (certainly present in Bruno's text) of a biological cause of the third and fourth movements, necessary in Bruno's opinion to ensure the long-term changes in the climate and aspect of the earth's surface. By underlining so emphatically Bruno's discussion of the causes of the third and fourth movements, only hinted at by Copernicus himself, Ingegno underestimated the importance of Bruno's attempt to offer a technically valid discussion of the nature of the movements themselves.

In this editor's own volume on *Giordano Bruno and Renaissance Science* of 1999, a more stringent effort was made to relate Bruno's discussion of the movements of the earth themselves, rather than their causes, to Copernicus's definition of them in *De revolutionibus*, and particularly to book III, where he discusses the precession of the equinoxes. This effort was much aided by the essential contributions on Copernicus's own treatment of precession by Noel M. Swerdlow and Otto E. Neugebauer, not yet available to Ingegno. However, although it may be claimed that this effort succeeded in establishing a closer relationship between book III of *De revolutionibus* and Bruno's pages in *The Ash Wednesday Supper* than had so far been recognized, it failed to clarify completely some of the more complex aspects of Bruno's third and fourth movements of the earth. In 2009, Pietro Daniel Omodeo published in *Nuncius* a detailed discussion of "Giordano Bruno and Nicholas Copernicus: The Motions of the Earth in *The Ash Wednesday Supper*."<sup>78</sup> Although appreciating the necessity of relating Copernicus's discussion of precession more closely to Bruno's



natio Borea h ad Solem conuerfa efficit. Quoniam declinitas æ-  
quinoctialis ad a e lineā per reuolutionē diurnā detornat sibi tro-  
picū hyemale parallelū secundum distantia, quam sub ea h an-  
gulus inclinationis comprehendit. Proficiscatur modo cētrum  
terræ in cōsequentiā, ac tantundē f maximæ declinationis termi-  
nus, in præcedentiā donec utriq; in b peregerint quadrātes circu-



lorum. Manet interim ea i angulus semper equalis ipsi a eb, pro-  
pter æqualitatē reuolutionū, & dimetientes semper ad inuicem  
fah ad f b h, & g a i ad g b i, æquinoctialisq; æquinoctiali paral-  
lus. Quæ propter causam iam sæpe dictam apparent eadē in im-  
munitate cœli, igitur ex b Libræ principio, e sub Ariete appare-  
bit, cōcideriq; sectio circulorū communis in unā lineam g b i, ad  
quam diurna reuolutio nullā admitter declinationem, sed omnis  
declinatio erit à lateribus, itaq; Sol in æquinoctio uerno uidebi-  
tur. Per gat centrum terræ cum assumptis conditionibus, & per

c iij actō

Fig. III From Nicholas Copernicus, *De revolutionibus orbium coelestium*, Liber I, cap. XI, fol. 11r. The diagram is reproduced from the 2nd ed. of 1566 (Basilea: Henricpetrina), permission of the Biblioteca Casanatense, Rome, call no. II XII 65. This copy contains a handwritten inscription that suggests it may have belonged to Bruno himself. By kind concession of MiBACT, Ministero dei Beni e Attività Culturali. Reproduction of this image by any means is forbidden.

third and fourth movements than had previously been recognized, Omodeo accuses this editor of mistranslating some of Bruno's terminology, and mistaking some aspects of his third and fourth motions of the earth. However, Omodeo's own discussion of the third and fourth movements (in the opinion of this editor) is only partially exact. He offers an important contribution by giving, possibly for the first time, a clear and correct account of Bruno's third earth movement. Then, however, he finishes his account with a discussion of the fourth movement that introduces new confusions, making it necessary to reconsider once more Bruno's pages on the third and fourth motions of the earth. My aim here is to offer a clear account of Bruno's third movement (in support of the formulation already supplied by Omodeo) and his fourth movement (as a correction to Omodeo). In both cases, a clarification of the movements as Bruno formulates them bears directly on the translation of some important and previously misunderstood passages of Bruno's text.

Swerdlow and Neugebauer, in their essential publications on Copernicus's treatment of precession, underline the difficulties encountered by the modern reader in understanding his reasoning in book III of *De revolutionibus*.<sup>79</sup> These authors, indeed, have no difficulty in admitting that they are still unable to clarify completely some aspects of Copernicus on precession, particularly regarding his calculations. Such difficulties would have been even more present to a reader such as Bruno, only forty years after the publication of Copernicus's book, and part of a generation still educated in the traditional Aristotelian-Ptolemaic, earth-centred astronomy. Bruno was by no means alone, among what may be considered the second generation of Copernicus's readers, to find his account of precession bewildering. The Jesuit mathematician Christopher Clavius, who would later enter into debate with Galileo, wrote in the 1590s that Copernicus "speaks confusingly, and he explicates and describes with extreme difficulty, so that soon it appears to me to be written so that everything is in conflict with everything else." For his part – even if as a more favourable reader of the new astronomy – Christopher Rothmann, in a frequently quoted letter to Tycho Brahe, described Copernicus's book as "obscure and not easily comprehensible."<sup>80</sup> Nevertheless Bruno, although without Copernicus's mathematical abilities, accepts the challenge of attempting to furnish in print an acceptable account of precession, as it needs to be understood within a new heliocentric universe. At times, Bruno continues to talk about precession as it used to be presented in terms of the traditional earth-centred astronomy: something that Copernicus occasionally does as well. Ingegno and Omodeo have both made useful contributions in underlining the

texts that Bruno had probably been reading: Ingegno by pointing to Fracastoro's *Homocentrica* (1538), Omodeo by pointing to Peuerbach's *Theoricae novae planetarum* (1454). The real interest of Bruno's pages, however, lies in his effort to disengage himself from the traditional astronomy and discuss the earth's movements in Copernican terms.

Bruno's principal problem in his attempt to understand and explain precession as Copernicus had done, in terms of long-term movements of the earth, was that in the meantime belief in a system of solid celestial orbs had started to be questioned by the sightings of new comets. By the 1580s, the earth was beginning to be thought of as hanging freely in the firmament (Bruno being among the first to claim this principle so firmly). There was thus no need for a movement of "inclination" to keep its axis parallel to itself throughout its annual revolution around the sun. Given that Copernicus had merged his movement of "inclination" with the precession as his third movement of the earth, Bruno had to reformulate a third movement in terms of precession only (even if he never uses the word "precession" itself). This is what he tries to do in defining a third movement of the earth:

Terzo per la rinovatione di secoli participa un altro moto per il quale quella relatione ch'há questo emisphero superiore della terra á l'universo, vengha ad ottener l'emisphero inferiore, et quello succeda á quella del superiore.

Thirdly, for the renovation of the earth over the centuries, it partakes of another motion by which the relationship that this upper hemisphere of the earth has to the universe is reflected in the lower hemisphere, which follows that of the upper.

In a second explanation, Bruno writes:

Il terzo moto si misura da la habitudine ch'há una linea hemispherica della terra, che vale per l'orizzonte; con le sue differenze al universo, fin che torni la medesima linea, ó proportionale á quella, alla medesima habitudine.

The third motion is measured by the relation that a hemispherical line of the earth, which is the same as its horizon, has to the rest of the universe, until it returns to the same line or one proportional to it, establishing the same relationship.

Copernicus visualizes his third movement as a slowly progressive movement of the earth's equator as it moves around the sun. This is exactly

what Bruno is doing, referring to the equator with the somewhat old-fashioned terms of “a hemispherical line of the earth” and the earth’s “horizon.” Bruno simply eliminates any mention of the “inclination” here, although Copernicus had merged it with his account of precession. What Bruno does take from Copernicus is the idea that precession, in the terms proper to the new astronomy, involves a slowly changing relationship between the two hemispheres of the earth and the rest of the universe (for example, the North Pole will not always be orientated towards the star Polaris as it is at present, and the equinoxes and solstices will occur in very slowly varying positions with respect to the background of stars). The movement is a closed one, in the sense that ultimately the earth’s equator will return both hemispheres to the original relationships they had with the universe at the start of the process of precession. Omodeo was correct in claiming that Bruno is not contemplating any kind of “reversal” of the relative positions of the two hemispheres during the precession. The claim was an important one, as many readers have assumed that the above passages meant exactly that. On the contrary, Bruno is only pointing out that the two hemispheres reflect each other’s movements (and thus their changing relationships with respect to the rest of the universe) while remaining in their established positions with respect to the equatorial line that joins them. Precession remains, nevertheless, an extremely long-term process, which the traditional astronomy, in a compilation known as the Alfonsine tables, had calculated to take forty-nine thousand years to complete. Copernicus had recalculated precession to take much less time, (approximately twenty-six thousand years). But this was his time for mean precession (which included the “inclination” as well as other anomalies), so Bruno seems to have mistrusted it. Consequently, he reverted to the traditional tables. Actually, Copernicus’s figure for mean precession turned out to be uncannily close to modern estimations of its period.

Copernicus’s third movement was not only inclusive of both the inclination and regular precession. Because neither the inclination nor precession was traditionally considered to have a uniform rate, he also had to take account of the varying rates of both of them. Copernicus merges all these factors, as well as some other anomalies, into a single movement, which counts as his third movement. Bruno, however, having eliminated the inclination, also has to eliminate the variation in the rate of inclination, and take account only of the varying rate of the precession. He decides to do this by considering it as a movement in itself, his fourth movement, which has been the cause of much misunderstanding. The very fact that Copernicus only mentions three movements of the earth

while Bruno counts them as four has led, from Schiaparelli onwards, to accusations of a serious misunderstanding on his part of Copernicus's account of the motions of the earth. On the contrary, Bruno's fourth movement amounts to an attempt to follow Copernicus's account of the variation in the rate of precession, while eliminating any reference to the variation in the rate of an "inclination" that Bruno no longer accepted as real.

These two irregularities had been considered in the traditional astronomy as a kind of wobbling of the eighth sphere of the heavens around two circles forming something like a figure of 8 that were traced on a ninth or sometimes even tenth celestial sphere. Bruno was aware of this account, which he refers to in the fifth dialogue of the *Supper* using the traditional term of "trepidation." Omodeo has usefully demonstrated that Bruno's references to the traditional account of the trepidation stay very close to the description furnished by Peuerbach in his *Theoricae novae planetarum*.<sup>81</sup> The problem that concerns us here, however, is whether Bruno was aware of Copernicus's new account of the traditional movement known as "trepidation," transposed by him into irregular, long-term movements of the earth which he refers to as "librations." If so, how faithful did Bruno remain to Copernicus, or how far did he attempt to adapt the new libratory mechanism to his own vision of an earth hanging freely in the universe, unsupported by celestial orbs?

As we have seen, Bruno no longer thought in terms of an "inclination" of the equator towards the ecliptic, but of an earth hanging freely in the universe. His fourth movement is thus only concerned with the alleged irregularity of the precession, or with a single rather than a double movement of the earth's poles, which he nevertheless describes as "very irregular." It may be considered doubtful whether Bruno had in mind any very precise idea of this simplified libratory mechanism, as in his description of it he gives no idea of the kind of irregular movement involved. Also, he offers no diagrammatic account of it, which means that any interpretation of it can only be deduced from his words. Bruno's explanation of the alleged irregularity of precession in terms of a fourth movement of the earth is given in the following terms:

Quarto per la mutatione di volti et complessioni della terra, necessariamente gli conviene un'altro moto, per il quale l'habitudine ch'hà questo vertice de la tera verso il punto circa l'Artico, si cangia con l'habitudine ch'hà quell'altro verso l'opposito punto de l'Antartico polo.

Fourthly, for the mutation of the surfaces and complexions of the earth, it must necessarily partake of another motion according to which the position

of this vertex of the earth that establishes its point in the Arctic circle changes in the same way as the opposite point on the Antarctic pole.

Shortly afterwards, in a second explanation, Bruno adds:

Il quarto moto si misura per il progresso d'un punto polare de la terra, che per il dritto di qualche meridiano passando per l'altro polo, si converta al medesimo, ó circa il medesimo aspetto dove era prima.

The fourth motion is measured by the progress made by a polar point of the earth that, passing through the straight line of some meridian to the other pole, directs itself towards the same position, or nearly the same position, as it was in at the beginning.

The “position of this vertex of the earth that establishes its point in the Arctic circle” is clearly a somewhat elaborate way of referring to the North Pole, involved here in some kind of (unspecified) movement away from, or around, its regular position along the earth’s orbit around the sun. The North Pole, in Bruno’s formulation of this movement, is connected to the Antarctic (or South) Pole through the line formed by “some meridian” (an expression which can only be interpreted in geographical terms as meaning any longitudinal semicircular line drawn on the earth’s surface that terminates in the North and South Poles). It is interesting to notice that Bruno prefers to refer here to the material line of “some” (or any) meridian, running hemispherically over the earth’s surface, from pole to pole, rather than to the more abstract straight line formed by the earth’s axis joining the two poles. Omodeo had already pointed out, in his discussion of Bruno’s third earth movement, that regular precession, visualized by Bruno (and Copernicus) as a movement of the earth’s equator, should always be interpreted in Bruno as a movement of material points on the earth’s surface, not of abstract or purely geometrical points.<sup>82</sup> For as Ingegno had already argued, Bruno is always thinking of the long-term effects of these movements on the life-cycle of the earth, and not only in terms of a definition of the movements as such.

Nevertheless, Bruno is attempting in these pages of the *Supper* to give a very synthetic description of multiple movements of the earth, following Copernicus in his general revolutionary transposition of the traditional astronomical movements of the heavens into earthly movements, while not accepting his account in all its details. All that Bruno is saying here is that a libratory oscillation of the earth’s surface communicated to

its two vertices, or poles, constitutes a further movement of the earth which, once again, returns the poles – at the end of another centuries-long process – to their original positions. A crucial point that needs to be underlined is that Bruno is not contemplating here in his fourth movement – as he was not in his account of regular precession in his third movement – any inversion of the poles during this centuries-long oscillation. Omodeo is mistaken when he writes that “Bruno seems to consider – wrongly interpreting the mechanism of trepidation – that the fourth motion of the earth is a complete inversion of the terrestrial poles.”<sup>83</sup> Once again, as in his definition of the third motion, Bruno is not claiming that the poles exchange their positions, but only underlining that both poles reflect or face each other along the line of “some meridian,” thus carrying out at their opposite ends of the earth’s axis exactly the same movement (if in opposite directions), which eventually returns them to their original position. Given that Bruno at this point provided no illustrations for his idea of the libratory mechanism, the question inevitably becomes one of his language of astronomical representation, and Omodeo’s argument here is quite simply that Bruno’s passages quoted above can only be translated as referring to a complete inversion of the two poles. Such a statement, however, is questionable. Bruno does not use the word “inversione” but rather “*si converta*.” Attention needs to be paid to the use of a reflexive verb in the singular. Bruno is not saying that there is an “inversion” of the two poles, but rather that each pole “converts itself,” at the end of the process of libration, to its original position: “*si converta al medesimo o circa il medesimo aspetto dove era prima*.” “*Si converta*” (from the Latin “con-vertere”) can mean “to move itself from different points towards a single limiting point,” which is surely what Bruno is saying here: he uses a reflexive verb in the singular because he is referring to each pole in its own irregular movement of libration during the process of precession, and not to an “inversion” of the positions of the two poles. Furthermore, there is a logical connection that needs to be underlined here between Bruno’s account of the third and fourth motions. If there is no inversion of the poles during the precession itself (as Omodeo convincingly argues), there will surely be no inversion either during a movement strictly related to the precession in so far as it represents the supposed variation in its rate.

Finally, having finished his description of his four earth movements, Bruno follows Copernicus in emphasizing how they should really be seen as a single composite movement. Bruno’s reasoning here is extremely difficult to follow in its particulars, given that he illustrates this idea with a diagram of a spinning ball moving through the air (see fig. IV).

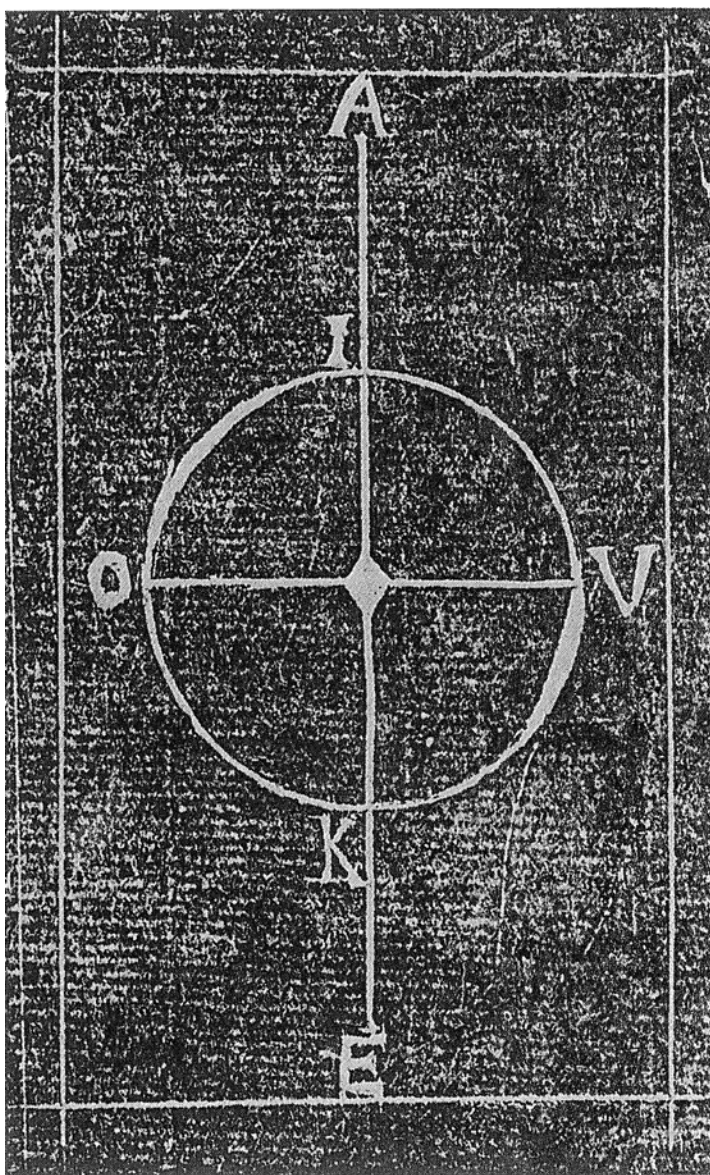


Fig. IV From *La cena de le ceneri*, Dialogue V. Diagram showing the multiple movements of a spinning ball thrown up into the air.

© The British Library Board, C.37.c.14.(2.), p. 125.



Considerable difficulties arise for all commentators when they attempt to clarify this diagram, as Bruno in his text refers to numbers that are lacking in the diagram itself, and to some letters that fail to correspond to those in the diagram as given. Bruno mentions in this page, with respect to the spinning ball – which also moves up and down from the thrower's hand according to the force of gravity – both that I at some point becomes K, and that O at some point becomes V. This is perfectly possible for a spinning ball, but makes no sense as an exact representation of the earth's movements around the sun. On the other hand, none of the earth's four movements around the sun, as Bruno has just described them, are precisely represented by this diagram. It seems rather an attempt to represent movements in space according to pre-Cartesian co-ordinates. The best way to understand the diagram, in my opinion, is to consider the spinning ball an imperfect analogy of a moving earth, introduced to underline a concept that Bruno considered important. He is concerned to illustrate with this diagram the way in which all earth movements combine into a single movement, so complex that its individual components defy exact description. Bruno concedes that the earth's movements do have a "certain order" or regularity, and are therefore measureable, but he is of the opinion (explicitly expressed in his text) that ultimately they can only be reduced to a mathematics of approximation.<sup>84</sup> It is nevertheless worth pointing out that Bruno's scientific imagery, at times eccentric and problematic as it is, has recently been considered as an important moment in the developing history of images in the context of early modern science.<sup>85</sup>

When Bruno returned to the subject of the movements of the earth in chapter 9 of book III of his later Latin masterpiece, *On the Immense and Innumerable*, he gave a slightly differently organized account.<sup>86</sup> Some commentators have hypothesized a rethinking on his part, but it seems rather that he is taking up a different point of view here. Rather than attempting an account of his own, he is simply paraphrasing Copernicus's synthetic account of the three earth movements in the Preface to *De revolutionibus*. When he gets to the third movement, Bruno explains how Copernicus incorporates into it the idea of an inclination (*declinationis*) in order to keep the earth's axis parallel to itself in its annual movement around the sun. Bruno even goes so far as to illustrate Copernicus's account of the inclination with a slightly re-elaborated version of the diagram supplied by Copernicus himself in *De revolutionibus* (see fig. III and, for Bruno's version of the same diagram, fig. V).

Only in a brief final paragraph does Bruno mention that Copernicus's third movement also included an account of the precession of the

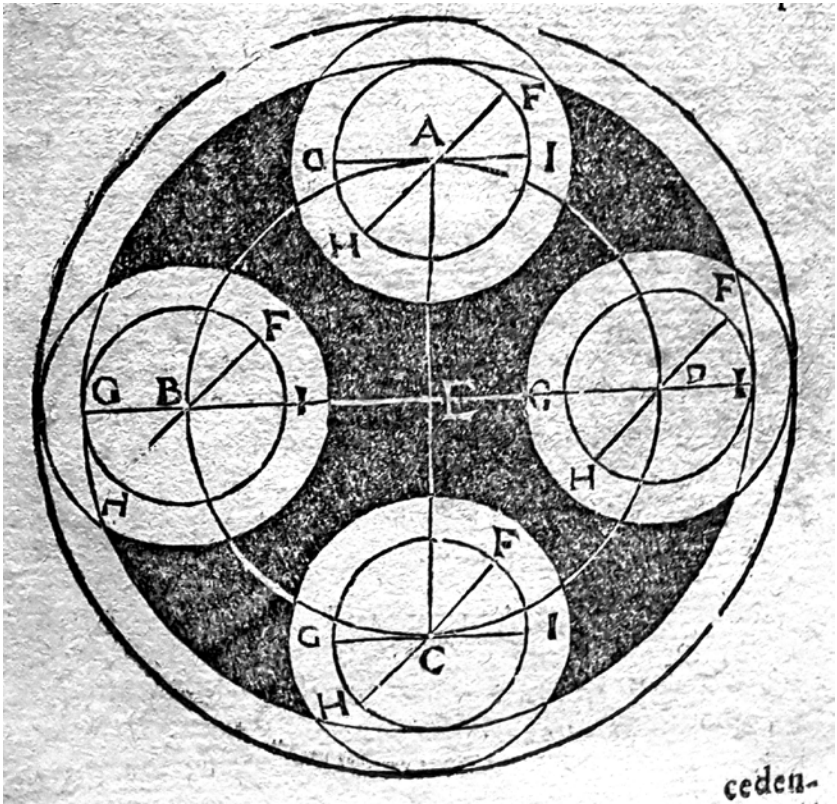


Fig. V Bruno's version in *De maximo et innumerabilibus*, Liber III, cap. IX, p. 334 of the Copernican diagram at fig. III. Reproduced from the copy held by the Biblioteca Alessandrina, Rome. By kind concession of MiBACT, Ministero dei Beni e Attività Culturali e del Turismo.  
Reproduction of this image by any means is forbidden.

equinoxes, referred to by Bruno as a “modest difference” (*modica differentia*) in the inclination of the earth with respect to the zodiac. The account ends with the brief comment that this small shift, from Ptolemy to the modern astronomers, was being considered as a very slow movement of the sphere of the fixed stars, to account for which it was becoming necessary to add a ninth and even a tenth sphere. Such an account, Bruno concludes, is now obsolete. It has become necessary to reconsider the question of this long-term movement in terms of a movement of the earth, although Bruno here makes no attempt to do this in any detail. Nor does he make here any separate mention of Copernicus’s libratory mechanism (designed to take into account the irregular rate of the precession, or the traditional movement known as the “trepidation”), which, in *The Ash Wednesday Supper*, had constituted Bruno’s fourth earth movement.

Ingegno is concerned to underline that the lack of any specific mention of the libratory mechanism in these pages of *On the Immense and Innumerable* should not be taken as a sign that Bruno had abandoned it altogether, as there are numerous mentions of its long-term effects on the earth’s surface in other parts of that same work.<sup>87</sup> It would appear rather that Bruno at this point had come to consider the libratory mechanism as a factor to be incorporated into his third movement, as Copernicus himself had done and as is the case in modern astronomical accounts of precession. Thus, having eliminated Copernicus’s idea of an “inclination” of the earth’s axis as it moves around the sun (a subject to which Bruno returns at greater length in the following chapter 10 of book III of *On the Immense and Innumerable*), and having incorporated the traditional “trepidation” into the movement of precession itself, Bruno is left with a third movement of the earth around the sun which he can now describe simply but correctly as “a modest difference” (or long-term movement, observable only over a lengthy period of time) in the inclination of the earth’s axis with respect to the rest of the universe.

Ultimately, what appears from Bruno’s discussion of the movements of the earth is that they were not, in themselves, the principal centre of his interest, either in *The Ash Wednesday Supper* or in his philosophical vision generally. The new heliocentric astronomy interested him only in so far as it opened up the horizon of a far larger universe than the traditional Aristotelian-Ptolemaic astronomy was able to contemplate. For Copernicus himself had already admitted that his new sun-centred universe placed the most distant stars at a far greater distance from earth than had previously been understood. He mentioned more than once, in *De revolutionibus*, the spaces of a newly “immense” universe. Copernicus’s

universe, however, still remained closed by an outer sphere of fixed stars, limited in their number. It was Bruno who made the leap towards a new cosmic vision of an unlimited space that he defined as “infinitely infinite”: not only infinite in extent, but also filled with an infinite number of solar systems invisible to the naked eye. This new cosmic vision was far bolder, and far more innovative in terms of a new idea of cosmological space, than anything contemplated by Copernicus, or even by contemporary “infinitists” such as Thomas Digges or Palingenius.<sup>88</sup> That is the reason why Bruno warns his reader in Dialogue I of *The Ash Wednesday Supper* not to think of him as a mere Copernican disciple. On the other hand, the new heliocentric astronomy offered Bruno the conceptual basis on which to elaborate his new vision of an infinite space. What was at stake can thus be thought of as a physical entailment, as well as a logical consequence, of the earth’s motions: the infinitude of the universe, and the eternal motion of its innumerable entities. It was therefore essential for Bruno not only to understand the new astronomy, at least in its most essential outlines, but also to argue strenuously in favour of Copernicus against the two “scarecrows” invited to challenge him by Fulke Greville. For they were attempting to frighten off a future where man’s place in the universe would become that of a tiny speck among galaxies of infinite stars, into which, as Bruno already foresaw, it would be possible to travel and discover new and entirely unfamiliar worlds. In his later *On the Infinite Universe and Worlds*, Bruno would thus be able to write about a newly immense space, a womb or universal container, in which “there are innumerable stars and orbs, and earths that we can see as well as an infinite number of others that can reasonably be deduced. This immense and infinite universe is what is meant by such a space, and by the bodies it contains.”<sup>89</sup>

*This page intentionally left blank*

## A NOTE ON THE TEXT

*La cena de le ceneri* (translated here as *The Ash Wednesday Supper*) was written in London in 1584 while Bruno was serving in the French Embassy as a Gentleman Attendant to the French Ambassador, Michel de Castelnau, Lord of Mauvissière, to whom the work is dedicated. It was published anonymously in London by the printer John Charlewood, with no indication of the place of publication or of the printer.<sup>1</sup> No manuscript survives, but approximately forty copies of the first edition have so far been traced.<sup>2</sup>

Studies carried out by Giovanni Gentile and Giovanni Aquilecchia have established that the text was revised more than once in the course of printing, to an extent that led to different versions of some parts of the *Supper*. Gentile was the first editor to be aware that surviving copies of the first edition demonstrate that there were two different versions of the opening speeches of Dialogue I. Gentile announced this discovery in his edition of *La cena de le ceneri* in his *Opere italiane* of 1908, while in his 1925 edition of the *Opere italiane*, he added an appendix giving *La prima redazione del principio della "Cena de le ceneri"*, which has become standard practice with most modern editors of this text. The revised version of Dialogue I, which is reproduced here, is notable for modulating Bruno's anti-Christian polemic in these opening speeches – which could well have offended the Catholic sentiments of the French Embassy in which he was a guest – while at the same time introducing, with deliberately florid rhetoric, a passage in praise of his English Muses in which the explicit sexual references are drawn, according to Giovanni Aquilecchia, from the poetry of Tansillo as well as the *Priapea* by Nicolò Franco.<sup>3</sup>

Giovanni Aquilecchia's own discoveries then revealed the existence of an earlier and a later version of Folio D of the *Supper* that correspond to different known copies of the first edition. The textual variants between these versions were presented by Aquilecchia in a major paper read in

Rome in 1950 with the title “La lezione definitiva della *Cena de le ceneri* di Giordano Bruno.”<sup>4</sup> The result of Aquilecchia’s researches on the textual history of the *Supper* was a proposal that the single copy discovered by him in the Biblioteca Nazionale Centrale di Roma, with manuscript corrections to certain parts of the text in Folio D (which contains the final part of Dialogue II and the opening lines of Dialogue III), is to be taken as the final version as intended by Bruno himself, while the other nearly forty known copies, in the version commonly known as the “vulgata,” were to be considered an early version discarded by the author, although not before numerous examples of it had entered into circulation. Aquilecchia claimed that these changes were made in order to erase passages of anti-Protestant satire that might have offended the Leicester-Sidney circle in which Bruno was moving in London.

This thesis was widely considered to have been proved correct by the subsequent discovery of a previously unknown first edition containing a printed form of the manuscript version of Folio D discovered by Aquilecchia in Rome. This volume was discovered some ten years later by Roberto Tissoni in the Trivulziana Library in Milan.<sup>5</sup> Aquilecchia first published the text of what he took as Bruno’s final and definitive intentions with respect to Folio D of the *Supper* as an edition for Einaudi (Turin) in 1955, and then as the original facing text in the French edition of Bruno’s *Oeuvres complètes*, vol. II, *Le souper des cendres* (Paris: Les Belles Lettres, 1994). This volume carries two Appendices containing the major passages from the alternative version that, according to Aquilecchia, Bruno discarded. A *Note philologique* by Aquilecchia that discusses the many problems met with in the establishment of a definitive text of this work can be consulted at pp. lxix–lxxxviii of the above-mentioned French edition. This text has now been republished in a two-volume Italian edition of Bruno’s *Opere italiane*, with an introduction by Nuccio Ordine, which also contains what Aquilecchia considered the discarded variants in two Appendices.<sup>6</sup>

In more recent years, however, the order established by Aquilecchia between the two versions of Folio D has been questioned by Elisabetta Tarantino in a detailed contribution on the subject.<sup>7</sup> Tarantino’s objections to the Aquilecchia thesis are based on alternative interpretations of a number of passages in the D folio which demonstrate that it is more than possible to claim that the so-called “vulgata” version, which has survived in numerous copies, was the text intended by Bruno himself as a final version – and therefore authorized for distribution to the wider public. In this case, the version considered by Aquilecchia as the final one, extant in the

Rome manuscript version and the single Trivulziana printed version, can more easily be understood as an early version corrected by Bruno in the course of publication in order to state more precisely his relationships with the prestigious members of Elizabeth I's court mentioned in Dialogue II of this text.

Tarantino's claim for this alternative chronology was based on stringent philological considerations that demonstrated a use of vocabulary that had gone unnoticed by Aquilecchia. In particular, Tarantino claimed that Bruno's reference to the Earl of Leicester's "Signora" was a reference to his Queen (i.e. Elizabeth I) rather than to his wife, as Aquilecchia had assumed. Aquilecchia had based a considerable part of his defence of the Rome manuscript version as representing Bruno's final intentions on an assumption that Bruno had, in the gap between the two versions, become familiar with Leicester and his wife. Tarantino's argument thus seriously undermined Aquilecchia's claim that the version he had discovered in Rome represented Bruno's final intentions. Further investigation into Folio D then led Tarantino to produce a significant list of evident corrections to repetitive formulas or grammatical slips that clearly indicated that the "vulgata" texts, extant in many copies, contain a later and more precisely formulated version of the passages in question in Dialogue II and the beginning of Dialogue III.

This challenge to Aquilecchia's textual claims was later supported by an important contribution by Neil Harris, based entirely on arguments relating to the material methods of book production in London in Bruno's time.<sup>8</sup> Harris contributes a detailed account of the printing hazards and techniques that Bruno and his printer would have faced, offering technical confirmation of Tarantino's thesis that the final version of Dialogue II and the beginning of Dialogue III – or Folio D of the first editions – corresponds not to the texts discovered by Aquilecchia and Tissoni, but rather to the so-called "vulgata" version present in all the other known copies of the first edition to have survived.

It should be noted that the same volume containing the contribution by Harris also carried an essay by Nicoletta Tirinnanzi advancing the rather different claim that the variants between the two versions should be considered as representing alternative versions of the text aimed at different kinds of reader, both of which may have been approved of by Bruno as representing his final intentions.<sup>9</sup> In this case, the chronological sequence, first claimed by Aquilecchia and then overturned by Tarantino and Harris, would become irrelevant in view of the fact that both versions would have been approved of by Bruno himself. This



argument would seem to be entirely speculative, however, as there is no concrete evidence to indicate that Bruno used the two versions of his text in this way. Tirinnanzi's proposal nevertheless offers editors and translators the possibility of playing with both versions as they see fit. Her contribution has been underlined with some emphasis by Miguel A. Granada, who, in his latest Spanish translation of the *Supper*, presents a version of Aquilecchia's Einaudi text of 1955 while at the same time inclining towards the conclusion of Tarantino and Harris that the alternative "vulgata" text was probably the one that gained the final approval of Bruno himself. Granada adds to this conclusion the additional argument that the volume of his Italian dialogues that Bruno is known to have presented to Queen Elizabeth I contained the "vulgata" version of the *Supper* now held by the National Library of Austria in Vienna.<sup>10</sup>

A further contribution by Tiziana Providera comes down unambiguously on the side of the "vulgate" version as representing Bruno's final intentions.<sup>11</sup> Here the case is presented through a closely documented argument in terms of the tense and intricate politico-religious situation in which Bruno found himself in London, especially given the precarious position of the French Embassy where he was lodged. Ambassador Castelnau was at the same time engaged in furthering the interests of the Catholic Mary, Queen of Scots, and in attempting to maintain peaceful relations with the English and their Protestant queen, Elizabeth I. A dense series of relationships, and at times shifting religious allegiances, involving, among others, Castelnau, the Earl of Leicester, Bruno's printer Charlewood, and Charlewood's collaborator, the playwright Anthony Munday, are shown here to offer an explanation of the discrepancies between the two versions that clearly indicates the "vulgate" version as the definitive text.

I consider that the arguments put forward by Tarantino, Harris, and Providera, taken together, offer sufficient proof that the version of Folio D of the *Cena* that Bruno intended to publish was, indeed, the one distributed to the public at large, and it is on the basis of the "vulgate" version of Folio D that this translation of the final parts of Dialogue II and the beginning of Dialogue III has been made. Those wishing to consult the alternative version of Folio D, here considered an early and discarded text, will find it reproduced, with an English translation, in the Appendix at the end of the volume.

The primary reference text on which this new text and translation are based is the British Library copy of the first edition available on the internet through EEBO.<sup>12</sup> This contains both what is commonly considered the final version of the opening pages of Dialogue I and the version of

Folio D found in the numerous copies of the so-called “vulgata,” claimed by Tarantino and Harris as the definitive version. A few obvious printing mistakes and antique printing modes have been silently corrected, and the names of the speakers placed at the beginnings of their speeches, in italics, for greater clarity. Bruno’s original habits of accenting and spelling have, however, been maintained (eccentric as they often are) in order to render more clearly than in a corrected text its distinct character and sound.

*This page intentionally left blank*

# LIST OF FIGURES

Bruno himself supplied no captions to his illustrations in *La cena delle ceneri*, which are mostly diagrammatic. It is thought that he prepared the woodcuts himself, possibly for economic reasons. They are often of poor quality, and may have been prepared when he no longer had his text in front of him, as the letters in the diagrams often fail to correspond to those indicated in the text itself. The brief descriptions offered here are the editor's interpretations of what he writes about them in his text.

## Introduction

Fig. I From *La cena de le ceneri*, Dialogue IV: Bruno's drawing of the Ptolemaic system facing the Copernican system on the same page includes his correction to Torquatus's representation of the Copernican system xxxix

Fig. II Diagram of the universe in Copernicus, *De revolutionibus orbium coelestium*, Liber I xl

Fig. III Diagram of the geometrical co-ordinates of the inclination of the earth's axis as it moves around the sun according to Copernicus, *De revolutionibus orbium coelestium*, Liber I xlv

Fig. IV From *La cena de le ceneri*, Dialogue V: diagram of the multiple movements of a spinning ball thrown up into the air li

Fig. V Bruno's version in his Latin *De maximo et innumerabilibus*, Liber III, of Copernicus's diagram in fig. III liii

## La cena de le ceneri / The Ash Wednesday Supper

### Dialogue III

Fig. 1 Diagram representing the "eye" of an observer moving into space beyond the globe of the earth. As the angle of vision decreases, larger and larger portions of the earth's horizon become visible 100–1

Fig. 2 Diagram showing that the luminous sphere of the sun must be larger than the opaque sphere of earth because the earth produces a finite cone of shadow 104–5

Fig. 3 Diagram claiming to show (erroneously) how a small luminous body moving away from a large opaque sphere will illuminate it at a great distance even beyond its diameter until a point is reached where the opaque body will no longer impede the vision of another luminous body placed on the opposite side 108–9

Fig. 4 Diagram related to the previous figures showing how the eye of an observer moving away from the centre of the earth will see its diameter at an ever more acute angle until the angle becomes a straight line and the earth becomes a mere point and finally disappears 110–11

Fig. 5 Diagram of the earth's globe designed to show how even the highest mountains fail to impede vision of the horizon as a hemisphere 128–9

Fig. 6 Diagram of a moving ship in relation to a distant shore designed to illustrate Bruno's sense of the relativity of motion on a moving earth 134–5

#### **Dialogue IV**

Fig. 7 Bruno's drawing of the Ptolemaic system facing the Copernican system on the same page includes his correction to Torquatus's representation of the Copernican system 162–3

#### **Dialogue V**

Fig. 8 Diagram designed to show how the “fixed stars” are not really fixed either in relation to an observer on earth or in relation to each other, but only appear fixed due to the great distances involved 170–1

Fig. 9 Diagram of the co-ordinates of the movements of a spinning ball thrown vertically into the air 196–7

THE  
ASH WEDNESDAY  
SUPPER

## LA CENA DE LE CENERI

---

Descritta in cinque dialogi,  
Per quattro interlocutori,  
Con tre considerationi,  
Circa doi suggettj.

All'unico refugio de le Muse.  
L'Illustrissi. Michel di Castelnuovo.  
Sig. di Mauvissier, Concessalto, et di Ionvilla,  
Cavalier del ordine del Re Cristianiss. et  
Conseglier nel suo privato consiglio.  
Capitano di 50. huomini d'arme,  
Governator et Capitano di S. Desiderio,  
et Ambasciator alla sereniss. Regina d'Inghilterra.

L'universale intenzione e' dechiarata nel proemio.

1584.

## THE ASH WEDNESDAY SUPPER

---

Described in five dialogues,  
For four speakers,  
With three considerations,  
On two subjects.

To the only protector of the Muses.  
The celebrated Michel of Castelnuevo.  
Lord of Mauvissière, Concessault, and Joinville,  
Knight of the Order of the Most Christian King and  
Member of His Privy Council.  
Captain of 50 soldiers,  
Governor General of St Dizier,  
and Ambassador to Her Majesty the Queen of England.

The universal meaning is revealed in the preface.



**Al mal Contento.**

Se dal cinico dente sei trafitto,  
Lamentati di te barbaro perro:  
Ch'in van mi mostri il tuo baston, et ferro:  
Se nō ti guardi da farmi despetto.  
Per che col torto mi venesti à dritto,  
Pero tua pelle straccio, et ti disserro:  
Et s'indi accade ch'il mio corpo atterro,  
Tuo vituperio e' nel diamante scritto.  
Non andar nudo à torre à l'api il mele.  
Non morder se non sai s'e' pietra, o' pane.  
Non gir discalzo à seminar le spine.  
Non spreggiar mosca d'aragne le tele.  
Se sorce sei, non seguitar le rane,  
Fuggi le volpi, o' sangue di galline.  
Et credi à l'Evangelo,  
Che dice di buon zelo,  
Dal nostro campo miete penitenza:  
Chi vi gitto d'errori la semenza.

**To the Malcontent.**<sup>2</sup>

If by the dog-tooth of satire you're gored,  
The fault is your own, you barbarous cur;  
In vain do you show me your cudgel and sword,  
If you cannot refrain from insult or slur.  
Because you crossed wrongly in my right of way,  
I flay your hide, and disclose your deceit;  
And if I fall to the ground, as I may,  
In diamond will your shame be writ.  
Go not naked to take honey from the bee,  
Bite not, if you cannot tell stones from bread;  
Do not sow thorns with unshod feet;  
Despise not, O fly, the spider's web;  
If you're a mouse, shun frogs instead;  
Flee from the foxes, you race of hens.  
And believe the Gospel word,  
Whose zeal we all have heard:  
He who the seeds of error doth sow,  
Reaps penitence from the meadows we mow.<sup>3</sup>

## *Proemiale Epistola*

Scritta all'illustrissimo et  
Eccellentissimo Signor di Mauvissiero.  
Cavalier del'ordine del Re. et  
Consiglier del suo privato consiglio,  
Capitano di cinquant'huomini d'arma. Governator generale di  
S. Desiderio, et Ambasciator di Francia in Inghilterra.

Hor eccovi signor presente, non un convito Nettareo del'Altitonante, per una maestá. Non un Protoplastico, per una humana desolatione. Nõ quel d'Assuero per un misterio. Non di Lucullo per una ricchezza. Non di Licaone per un sacrilegio. Non di Thieste per una tragedia. Non di Tantalo per un supplicio. Non di Platone per una philosophia. Non di Diogene, per una miseria. Non de le sanguisughe, per una bagattella. Non d'un Arciprete di Poglano, per una Bernesca. Non d'un Bonifacio Candelaio, per una comedia. Ma un convito sì grande, sì picciolo; sí maestrale, sí disciplinale; sí sacrilego sí religioso; sí allegro, sí colerico; sí aspro, sí giocondo; sí magro Fiorentino, sí grasso Bolognese; sí Cinico, sí Sardanapalesco; sí bagattelliero, sí serio; sí grave, sí mattacinesco; sí tragico, sí comico: che certo credo che non vi sarà poco occasione da dovenir Heroico, dismesso; Maestro, discepolo; Credente, mescredente; Gaio, triste; Saturnino, Gioviale; Leggiero, ponderoso; Canino, liberale, Simico, Consulare, Sophista con Aristotele, Philosopho con Pythagora, ridente con Democrito, piangente con Heraclito. Voglo dire, dopo ch'harrete odorato con i' Peripatetici; mangiato con i' Pythagorici, bevuto con Stoici, potrete haver anchora da succhiare con quello che

## *Introductory Letter*

Addressed to the most celebrated and Illustrious  
Lord of Mauvissière.  
Knight of the Order of the King  
and one of his Privy Councillors,  
Captain of fifty soldiers. Governor General of St Dizier,  
and Ambassador of France in England.<sup>4</sup>

Now here, Sir, I present you – not with a banquet of nectar, like Thundering Jove's, standing for majesty; nor with that of our first parents, standing for human grief; not with Ahasuerus's, for a mystery; nor that of Lucullus, for a fortune; not Lycaon's, for a sacrilege; nor Thyestes', for a tragedy; not Tantalus's, for a torture; nor Plato's, for a philosophy; not the feast of Diogenes, for next to nothing; nor the feast of the leeches, for a trifle; not some arch-priest of Pogliano's, for a joke by Berni; nor some chandler Bonifacio's, for a comedy.<sup>5</sup> No, mine is a banquet both great and small; fit for master and disciple; both sacrilegious and religious; merry and sad; sour and sweet; Florentine-lean and Bolognese-fat; now contemptuous of pleasure, now indulgent like Sardanapalus; now frivolous, now serious; grave and foolish; tragic and comic.<sup>6</sup> Believe me, it will offer you not a few opportunities to feel both heroic and humble, a master and a disciple, a believer and a disbeliever, gay and bitter, saturnine and jovial, light-hearted and heavy-hearted, miserly and liberal, as imitative as an ape and as authoritative as a Consul, a sophist with Aristotle, a philosopher with Pythagoras, to laugh with Democritus, to weep with Heraclitus.<sup>7</sup> What I mean is: that after you have smelt with the Peripatetics, eaten with the

mostrando i' denti havea un riso sí gentile: che con la bocca toccava l'una et l'altra orecchia. Perche rompendo l'ossa, et cavandone le midolla: troverete cosa da far dissoluto san Colombino patriarcha de gli Gesuati, far impetrar qualsivogla mercato, smascellar le simie, et romper silentio á qualsivogla cimiterio. Mi dimandarete che simposio, che convito é questo? E' una cena. che cena? De le ceneri. che vuol dir cena de le ceneri? Fú vi posto forse questo pasto innante? potrassi forse dir quá CINEREM TAMQUAM PANEM MANDUCABAM? Non, ma é un convito, fatto dopo il tramontar del sole, nel primo giorno de la quarantana, detto da nostri preti DIES CINERUM; et talvolta Giorno del MEMENTO. In che versa questo convito, questa cena? Non già in considerar l'animo et effetti del molto nobile et ben creato sig. Folco Grivello, alla cui honorata stanza si convenne. Non circa gl'honorati costù di qué signori civilissimi, che per esser spettatori et auditori, vi furono presenti. Ma circa un voler veder, quātumque puó natura, in far due fanatastiche befane, doi sogni, due ombre, et due febbri quartane: del che mentre si vā crivelândo il senso historiale, et poi si gusta, et mastica: si tirano á proposito Topographie, altre Geografice, altre ratiocinali, altre morali. Speculationi anchora altre Methaphisiche, altre Mathematiche, altre Naturali.

### **Argomento del Primo Dialogo.**

Onde Vedrete nel primo Dialogo proposti in campo doi soggetti con la raggion di nomi loro, se la vorrete capire. Secondo in gratia loro celebrata la schala del numero binario. Terzo apportate le conditioni lodabili della ritrovata, et riparata filosofia. Quarto mostrato di quante lodi sia capace il Copernico. Quinto postiv' avanti gli frutti de la Nolana filosofia: con la differenza trá questo, et gl'altri modi di philosophare.

### **Argomento del Secondo Dialogo.**

Vedrete nel Secôdo Dialogo. Prima la causa originale de la Cena. Secondo una description di passi et di passaggi, che piu poetica, et tropologica forse, che historiale sará da tutti giudicata. Secôdo [Terzo] come confusamente si precipita in una topographia morale: dove par che con gl'occhi di Linceo quinci, et quindi guardando (non troppo fermâdosi)

Pythagoreans, drunk with the Stoics,<sup>8</sup> you will still be able to suck nourishment with the man who showed his teeth with such a pleasant laugh that his mouth stretched from ear to ear.<sup>9</sup> Because, as you crush the bones and extract the marrow from them, you will find matter sufficient to seduce St Colomb, the patriarch of the Gesuati, to petrify any marketplace, to make monkeys roar with laughter and to shatter the silence of any graveyard.<sup>10</sup> You will ask me: what symposium, what banquet is this? It is a supper. What supper? A supper of ashes. What does a supper of ashes mean? Was a plate of ashes put before you? Could you perhaps say here: "I have eaten ashes like bread"?<sup>11</sup> No, it is a banquet held after sunset on the first day of Lent, which is called by our priests the day of ashes, and sometimes the day of remembrance. What is the purpose of this banquet, this supper? Certainly not to consider the accomplishments of that most noble and well-bred gentleman Sir Fulke Greville, in whose chambers it took place; nor to contemplate the honourable behaviour of those most civilized gentlemen who were present as audience and spectators. It is my purpose rather to see how far nature can go in creating two fantastic witches, two nightmares, two ghosts, two quartan fevers.<sup>12</sup> Then, while the meaning of the narrative is being sifted, and later tasted and turned over in the mind, a number of considerations are put forward: some topographical, some geographical, some rational, others moral. At the same time some speculations are advanced in metaphysics, mathematics, and natural philosophy.

### **The Argument of the First Dialogue**

In the first dialogue two characters will be introduced and the meaning of their names explained, if you wish to understand it.<sup>13</sup> Second, in their honour, a scale of binary numbers will be celebrated. Third, the laudable state of the rediscovered and re-established philosophy will be illustrated. Fourth, it will be shown how worthy of praise is Copernicus. Fifth, the fruits of the Nolan philosophy will be set before you, and the difference between this and other methods of philosophizing explained.

### **The Argument of the Second Dialogue**

In the second dialogue you will find: first of all, the origin and cause of the supper; second, a description of walks and wanderings which will perhaps be judged by the reader as more poetical and figurative than historically true;<sup>14</sup> third, how the narrative slips confusingly into moral topography

cosa per cosa, mentre fá il su camino; oltre che contempla le gran machine: mi par che non sia minuzzaria, ne petruccia, ne sassetto, che non vi vada ad intoppare. Et in cio fá giusto com'un pittore; al quale nõ basta far il semplice ritratto de l'historia: ma ancho per empir il quadro, et cõformarsi cõ l'arte à la natura: vi depinge de le pietre, di mōti, de gl'arbori, di fōti di fiumi, di colline: et vi fá veder quã un regio palagio, ivi una selva, lá un straccio di cielo, in quel cãto un mezo sol che nasce, et da passo in passo un ucello un porco, un cervio, un asino, un cavallo: mētre basta di questo fa veder una testa, di quello un corno, del'altro un quarto di dietro, di costui l'orecchie, di colui l'intiera descrizione, questo con un gesto, et una mina, che non tiene quello et quell'altro; di sorte che con maggior satisfatione di chi remira, et giudica, viene ad historiar (come dicono) la figura. Cossi al proposito, leggete, et vedrete quel che voglo dire. Ultimo si conclude quel benedetto dialogo con l'esser gionto a' la stanza, esser gratiosamēte accolto, et cerimoniosamēte assiso á tavola.

### **Argomento del terzo Dialogo.**

Vedrete il terzo dialogo (secondo il numero de le proposte del dottor Nūdinio) diviso in cinq: parti. De quali la prima versa circa la necessitã de l'una et de l'altra lingua. La seconda esplica l'intentione del Copernico. Dona resolutione d'un dubio importantissimo circa le Phenomie celesti. Mostra la vanitã del studio di Perspettivi et Optici, circa la determinatione della quantitã di corpi luminosi; Et porge circa questo, nuova, risoluta, et certissima dottrina. La terza mostra il modo della consistenza di corpi mondani, et dichiara essere infinita la mole de l'universo; et che in vano si cerca il centro ó la circonferenza del mondo universale, come fusse un de corpi particolari. La quarta afferma esser conformi in materia questo mondo nostro ch'e' detto globo della terra, con gli mondi che son gli corpi de gl'altri astri, et che é cosa da fanciulli haver creduto, et credere altrimente. Et che quei son tanti animali intellettuali: et che non meno in quelli vegetano, et intendono molti et innumerabili individui semplici, et composti; che veggiamo vivere et vegetar nel dorso di questo. La quinta per occasion d'un argomento ch'apportó Nundidio al fine, mostra la vanitã di due grandi persuasioni con le quali, et simili, Aristotele, et altri son stati acciecati sì, che non veddero esser vero et necessario il moto de la terra: et son stati sì impediti, che non han possuto credere quello esser possibile, il che facendosi, vengono discoperti molti secreti de la natura sin al presente occolti.

while the author (without pause or stop) looks around him, scrutinizing everything with the eyes of a Lynceus.<sup>15</sup> During his progress he contemplates the universal fabric, while at the same time he stumbles over every tiny pebble and stone. In this he can be compared to a painter who is not satisfied with reproducing a simple portrait of his subject but tries to fill in his canvas, and make his art conform to nature, by introducing rocks, mountains, trees, fountains, rivers, and hills. So he depicts a royal palace here, a forest there, a glimpse of the sky above, and on one side the half of a rising sun. As he continues he adds a bird, a pig, a deer, an ass, or a horse, showing here a head only, there a horn, of one beast the hindquarters, of another the ears, of another again the entire description. Each one is portrayed in an attitude and gesture which differentiates them from the others, so that the observer finds greater satisfaction in the way in which the figure is, as they say, represented. When you read this part, you will understand what I mean. Lastly, this blessed dialogue comes to an end when the guests enter the room, are graciously welcomed, and ceremoniously seated at table.

### **The Argument of the Third Dialogue**

You will find the third dialogue divided into five parts according to the propositions put forward by Dr Nundinius. The first part states the necessity of knowing more than one language. The second explains the theory of Copernicus, resolves an important doubt concerning the celestial phenomena, demonstrates the irrelevance of the study of perspective and optics for determining the magnitude of luminous bodies, and proposes on this subject a doctrine that is bold, new, and certain. The third demonstrates the nature of the worlds in space,<sup>16</sup> and declares the universe to be infinite; for it is vain to attempt to define a centre or circumference of the universal whole as if it were one of its individual bodies. The fourth affirms that this globe of ours called earth is made of the same substance as the other worlds or celestial bodies, and that it was a childish fancy to have believed, and still to believe, otherwise; and that they are animated by an intellective soul; and that innumerable individual beings, both simple and composite, vegetate and live intelligently in those worlds just as they do on the surface of this one. The fifth considers an argument put forward towards the end by Nundinius. It demonstrates the absurdity of the two great settled beliefs, and others of the same kind, which have so blinded Aristotle and his followers that they were unable to see the necessary movement of the earth; for they were so blinkered that they could not believe it to be possible. While this is done, many secrets of nature are revealed which were previously hidden.



### **Argomento del quarto Dialogo.**

Havete nel principio del quarto dialogo mezzo per rispondere á tutte ragioni, et inconvenienti Theologali: et per mostrar questa philosophia esser conforme alla vera Theologia, et degna d'esser favrita da le vere religioni. Nel resto vi se pone avanti uno, che non sapea ne disputar, ne dimandar á proposito; il quale per esser piu impudente et arrogante, pareva á gli piu ignoranti piu dotto ch'il dottor Nundinio. Ma vedrete che non bastarebbono tutte le presse del mondo, per cavari una stilla di succhio dal suo dire, per prender materia da far dimandar Smitho, et rispondere il Theophilo. Ma é á fatto soggetto de le spampanate di Prudentio, et di rovesci di Frulla. Et certo mi rincresse che quella parte ve si trove.

### **Argomento del quinto Dialogo.**

S'aggiunge il quinto dialogo (vi giuro) non per altro rispetto, eccetto che per non conchiudere si sterilmente la nostra cena. Ivi primamente s'apporta la convenientissima dispositione di corpi nell'etherea reggione, mostrando che quello, che si dice Ottava sphaera, Cielo de le fisse; non é si fattamente un cielo, che qué corpi ch'appaiono lucidi, siano equidistanti dal mezzo: ma che tali appaiono vicini, che son distanti di longhezza et latitudine l'uno da l'altro, più che non possa essere l'uno et l'altro dal sole et da la terra. Secôdo che non sono sette erranti corpi solamête, per tal caggione che sette n'habbiamo compresi per tali: ma che, per la medesima ragione sono altri innumerabili; quali da gl'antichi, et veri philosophi, non senza causa son stati nomati Æthera, che vuol dire corridori, per che essi son qué corpi, che veramente si muovono, et non l'imaginate sphaere. Terzo che cotal moto procede da principio interno necessariamente come da propria natura, et anima: con la qual verità si destruggono molti sogni, tanto circa il moto attivo della luna sopra l'acqui, et altre sorte d'humori: quanto circa l'altre cose naturali, che par che conoscano il principio de lor moto da efficiente esteriore.

Quarto determina contra qué dubbii che procedeno con la stoltissima ragione della gravità et levità di corpi: et dimostra ogni moto naturale accostarsi al circolare, ó circa il proprio centro, ó circa qual ch'altro mezzo. Quinto fá vedere quanto sia necessario che questa terra et altri simili corpi si muovano non con una, ma con piu differenze di moti, et che

## The Argument of the Fourth Dialogue

At the beginning of the fourth dialogue you will be offered the means for replying to any theological argument or objection whatever, and for showing that this philosophy conforms to the true theology and is worthy of the respect of true religions. In the remaining part you will find yourself face to face with someone who had no idea how to debate, or how to ask relevant questions; – and being more impudent and arrogant than Dr Nundinius, he seemed to the ignorant to be more learned than he was. However, as you will see, not all the presses in the world would suffice to extract a single drop of sense from what he says. Still, he serves as an expedient for the questions of Smithus and the answers of Theophilus. At the same time he becomes the target of the pompous boasts of Prudentius, and of Frulla's paradoxes. Even so, I am sorry that this part had to be included.

## The Argument of the Fifth Dialogue

The fifth dialogue, I assure you, has been added for no other reason than to finish our supper on a less sterile note. First, it deals with the appropriate disposition of the bodies in the ethereal space. It shows that what is called the eighth sphere, or the heaven of the fixed stars, is not strictly speaking a heaven where the apparently shining bodies are equidistant from the centre: rather, those bodies appear close to one another which are in fact more distant from each other in longitude and latitude than each of them is distant from the sun or the earth.<sup>17</sup> Second, it suggests that the number of orbiting bodies is not limited to seven simply because that is as many as we have always thought them to be. Rather, there are innumerable others which the ancient and true philosophers used, not without reason, to call *aethera*, which means “runners”;<sup>18</sup> for it is really they that move, and not the imaginary spheres. Third, that their movement proceeds from an internal principle of necessity, as if from their own natures and souls. This truth explodes many fantasies both about the moon as an active cause of the movement of the waters and other kinds of humours, and about those other things in nature which would appear to find the principles of their movements in external efficient causes. Fourth, it decides against those doubts which arise from absurd ideas about the gravity or lightness of bodies; and it demonstrates that every movement in nature tends towards the circular, either about its own centre or about some other centre. Fifth, it is shown to be necessary that this earth and other similar

quelli non denno esser piu, ne meno di quattro semplici; ben che concorrano in un composto, et dice quali siano questi moti ne la terra. Ultimo promette di aggiungere per altri dialogi, quel che par che manca al compimento di questa philosophia, et conchiude con una adiuratione di Prudentio. Restarete maraviglato come con tanta brevità et sufficienza, s'espediscono sì gran cose. Hor quã se vedrete talvolta, certi men gravi propositi, che par che debbano temere di farsi innante alla superciliosa censura di Catone: non dubitate, perche questi Catoni saranno molto ciechi et pazzi; se non sapran scuoprir quel ch'è ascosto sotto questi Sileni. Se vi occoreno tanti et diversi propositi attaccati insieme, che non par che quã sia una scienza: ma dove sã di Dialogo, dove di Comedia, dove di Tragedia, dove di Poesia, dove d'Oratoria, dove lauda, dove vitupera, dove dimostra et insegna, dove há hor del Physico, hor del Mathematico, hor del morale, hor del logico. In conclusione nõ è sorte di scienza che non v'habbia di suoi stracci: Considerate Signore che il dialogo, è historiale, dove mentre si riferiscono l'occasioni, i' moti, i' passaggi, i' rancontri, i' gesti, gl'affetti, i' discorsi, le proposte, le risposte, i' propositi, et i' spropositi remettendo tutto sotto il rigore del giudizio di què quattro: non è cosa che non vi possa venir á proposito cõ qualche raggione. Considerate anchora che non v'è parola ociosa: per che in tutte parti è da mietere, et da disotterrare cose di non mediocre importanza, et forse piu lá dove meno appare. Quanto á quello che nella superficie si presenta, quelli che n'han donato occasione di far il dialogo, et forse una Satyra, et Comedia, han modo di dovenir piu circonspecti, quando misurano gl'huomini con quella verga con la quale si misura il velluto, et con la lance di metalli bilanciano gl'animi. Quelli che saranno spettatori ó lettori, et che vedranno il modo con cui altri son tocchi: hanno per farsi accorti et imparar á l'altrui spese. Què che son feriti ó punti, apriranno forse gli'occhi, et vedendo la sua povertà, nudità, indignità: se non per amore, per vergogna al meno si potran correggere ó cuoprire, se non voglono confessare. Se vi par il nostro Theophilo et Frulla troppo grave et rigidamente toccare il dorso d'alchuni suppositi: considerate Signor che questi animali non han sì tenero il cuoio: che se le scosse fussero á cento doppia maggiori, nõ le stimarebbono punto, ó sentirebbono piu che se fussero palpate d'una fanciulla. Ne vorrei che mi stimate degno di riprensione: per quel che sopra sí fatte ineptie et tanto indegno cãpo che n'han porgiuto questi dottori, habbiamo voluto exaggarar sì gravi, et sì degni propositi: per che non certo che sappiate esser differenza da togliere una cosa per fondamẽto, et prenderla per occasione. I fondamẽti in vero denno esser proportionati alla grandezza, conditione, et nobiltà de l'edificio. Ma le occasioni possono essere di

bodies move not with one movement only, but with several different movements, to the number of four simple ones, and that these combine together to form one compound movement. Further, it specifies what these movements are in the case of the earth. Lastly, it promises to add in further dialogues whatever should be lacking in the philosophy here presented. It closes with an exhortation pronounced by Prudentius. You will be astonished that such profound questions can be debated so briefly yet so thoroughly. At the same time you will find in these pages a number of less serious considerations which might seem to you to deserve the severe admonishments of a Cato; but this should not worry you, as such Catos would be blind and foolish indeed if they could not discover what is hidden within these Sileni.<sup>19</sup> If you are confronted by so many diverse subjects strung together, they will hardly seem to you to make up a science, but rather in some parts a dialogue, in others a comedy, in others a tragedy, here some poetry or oratory, there celebration or vituperation. At times you will find demonstrations and teaching, in physics and mathematics, morals and logic: in short, it can be said that there is no branch of knowledge of which you will not find some fragment. For you must remember, Sir, that the dialogue is a narration of historical fact, referring you to occasions and motives, walks and meetings, gestures, states of mind, speeches and suggestions, replies, proposals and counterproposals, all of which are subjected to the severe judgment of our four speakers. In fact, there is no subject that cannot be appropriately and reasonably introduced. Consider; furthermore, that you will not find here a single superfluous word; for at every moment there is matter of much importance to be harvested or unearthed: perhaps more so where it is least apparent. As for what is present on the surface, those who provided the occasion for the composition of the dialogue, and perhaps of a satire and a comedy too, will have to be more circumspect when they measure men with the same yardstick as they measure velvet, or weigh men's minds in metal balances. The audience or readers who watch others being stung will learn at their expense how to act more prudently. Those who themselves are stung or wounded will perhaps open their eyes and, seeing their own poverty, nakedness, and worthlessness, will, if they prefer not to confess their faults, try at least to correct and cover themselves, out of shame if not out of love. If our Theophilus and our Frulla seem at times to touch on some subjects with too heavy a hand, you must consider, Sir, that these beasts do not have tender hides; and, even if the blows were doubled a hundred times, they would hardly feel them, or would feel little more than if they were being patted by a girl. Nor would I wish you to criticize me for attempting to construct so many serious and valid arguments on the basis of so many inept and worthless propositions

tutte sorte, per tutti effetti: per che cose minime, et sordide, son semi di cose grande, et eccellenti. Sciocchezze et pazzie, soglono provocar gran consigli, giuditii, et inventioni; lascio ch' é manifesto che gl'errori, et delitti, han molto volte porgiuta occasione á grandissime regole di giustizia, et di bontade.

Se nel ritrare vi par che i' colori non rispondano perfettamente al vivo; et gli delineamenti non vi parranno al tutto proprii: sappiate ch'il difetto e' provenuto da questo, che il pittore non há possuto esaminar il ritratto con quei spacci et distanze, che soglon prendere i' maestri del'arte: perche oltre che la tavola, ò il campo era troppo vicino al volto, et gl'occhi: non si possea ritirar un minimo passo à dietro ó discostar da l'uno et l'altro canto, senza timor di far quel salto, che feo il figlo del famoso defensor di Troia. Pur tal qual é, prendete questo ritratto ove son qué doi, qué cento, qué mille, qué tutti; atteso che non vi si manda per informarvi di quel che sapete, ne per gionger acqua al rapido fiume del vostro giuditio, et ingegno: ma perche sò che secondo l'ordinario, benche conosciamo le cose piu perfettamente al vivo; non soglamo però dispregiar il ritratto, et la rapresentation di quelle. Oltre che son certo ch'il generoso animo vostro drizzerà l'occhio della consideration piu alla gratitudine dell'affetto con cui sí dona, che al presente della mano che vi porge. Questo s'è drizzato á voi, che siete piu vicino, et vi mostrate piu propitio, et piu favorevole al nostro Nolano, et però vi siete reso piu degno supposito di nostri ossequii in questo clima, dove i' mercanti senza coscienza et fede, son facilmente Cresi; et gli virtuosi senz'oro, non son difficilmente Diogeni. A voi che con tanta munificenza et liberalità avete accolto il Nolano al vostro tetto, et luogo piu eminente di vostra casa; Dove se questo terreno in vece che manda fuori mille torvi gigantoni, producesse altri tati Alessandri magni; vedreste piu di cinquecento venir á corteggiar questo Diogene, il qual per gratia de le stelle non hav'altro che voi che gli vengha á levar il sole se pur (per non farlo piu povero di quel Cinico mascalzone) mada qualche diretto ó riflesso raggio dentro quella bucha che sapete. A' voi si cōsacra, che in questa Britannia rapresentate l'altezza di si magnanimo, si grāde, et si potente Re, che dal generosissimo petto de l'Europa, con la voce de la sua fama fā rintornar gl'estremi cardini de la terra. Quello che quando irato freme, come Leon da l'alta spelonca, dona spaventii et horror mortali à gl'altri, predatori potenti di queste selve: et quando si riposa, et si quietata, manda tal vampo di liberale et di cortese amore, ch'infiamma il Tropico vicino, scalda l'Orsa gelata, et dissolve il rigor de l'Artico deserto, che sotto l'eterna custodia del fiero Boote si raggira. VALE.

as were put forward by those doctors; for I am convinced that you know how to differentiate between foundational truths and occasional ones. The foundations, for example, must be proportionate to the size, type, and nobility of the edifice, whereas occasional features can be of many sorts, giving rise to many different effects. For the smallest and most sordid things can be the seeds of things which are excellent and great; while absurdities and folly often provoke important debates, decisions, and proposals. I take it no one would deny that errors and crimes have often given rise to imposing measures of justice, and of virtue.

If the colours of this portrait do not seem to you to correspond to the real thing, or the features to be exactly like, you should consider that the defect depends on the painter having been unable to distance himself sufficiently from his subject, as masters of the art are accustomed to do. For not only was the canvas or the field of vision too close to his face and eyes, but there was no possibility of taking the smallest step backwards, or to one or the other side, without the danger of making a leap like that of the son of the famous defender of Troy.<sup>20</sup> So accept this picture as it is, with its portraits of those two, those hundreds, those thousands, those everybodies. For it is understood that no one sends it to you in order to inform you of what you already know, nor to add to the rapid stream of your judgment and your intelligence. Nevertheless, it is, I believe, generally accepted that, although we gain a more perfect knowledge of things through direct experience, we do not despise a portrait or representation of them. Besides, I have no doubt that your generous spirit will take into consideration rather the gratitude and affection of the bearer than the gift in the outstretched palm. This has been offered to you because you are the closest at hand, and because you have shown the most favour and kindness to my Nolan, rendering yourself the most worthy of my consideration in this climate where the merchants, who are untrustworthy and unscrupulous, become easily as rich as Croesus,<sup>21</sup> while the virtuous, without wealth, become as easily so many Diogenes.<sup>22</sup> To you, then, who have offered shelter under your roof to the Nolan, with such generous liberality, opening the doors of the highest place in your house,<sup>23</sup> where, if only this land, instead of giving birth to a thousand surly giants, produced as many Alexanders, you would see more than five hundred of them come to pay homage to this Diogenes. By the favour of the stars, instead, he only has you to come and stand in his sunlight, always admitting (in order not to make him seem even poorer than that rascally cynic) that one or two direct or reflected rays manage to penetrate that den which you know so well.<sup>24</sup> So it is consecrated to you, as the representative in Britain of His Highness the magnanimous, great, and powerful King<sup>25</sup> who, from the generous bosom

*This page intentionally left blank*

of Europe, makes the furthest points of the earth vibrate to the sound of his fame; who, when he roars with rage like a lion from the mouth of his cave, fills the other beasts of prey in the forest with a mortal horror and fear; who, when he is quiet and at rest, casts about him such beams of generous and courtly love that he ignites the neighbouring topic, warms the frozen Bear, and melts the ice of the Arctic deserts whose circle lies under the eternal sway of fierce Boötes.<sup>26</sup> Farewell



## *Dialogo Primo.*

### *Interlocutori*

SMITHO. THEOPHILO PHILOSOPHO. PRUDENTIO PEDANTE. FRULLA.

[SMITHO] Parlavan ben latino?

THEOPHILO. Sì.

SMITHO. Galant'huomini?

THEOPHILO. Sì.

SMITHO. Di buona riputazione?

THEOPHILO. Sì.

SMITHO. Dottì?

THEOPHILO. Assai competentemente.

SMITHO. Ben creati, cortesi, civili?

THEOPHILO. Troppo mediocrementemente.

SMITHO. Dottori?

THEOPHILO. Messer sì, Padre sì, Madonnasi, Madesi; credo da Oxonia.

SMITHO. Qualificati?

THEOPHILO. Come non? huomini da scelta, di robba lunga, vestiti di velluto, un de quali havea due cathene d'oro lucente al collo: et l'altro (per Dio) con quella pretiosa mano (che contenea dodeci anella in due dita) sembrava uno ricchissimo gioielliero, che ti cavava gl'occhi et il core, quando la vagheggiava.

SMITHO. Mostravano saper di greco?

## *Dialogue I*

### *Speakers*

SMITHUS; THEOPHILUS, A PHILOSOPHER; PRUDENTIUS, A PEDANT; FRULLA<sup>1</sup>

SMITHUS. Did they speak good Latin?

THEOPHILUS. Yes, they did.

SMITHUS. Were they gentlemen?

THEOPHILUS. Yes.

SMITHUS. With a good reputation?

THEOPHILUS. Yes.

SMITHUS. Men of learning?

THEOPHILUS. Sufficiently so.

SMITHUS. Good mannered, courteous, polite?

THEOPHILUS. Not particularly.

SMITHUS. Were they doctors?

THEOPHILUS. Yes sir, yes father, yes ma'am, oh dear yes. From Oxford, I believe.<sup>2</sup>

SMITHUS. Well qualified?

THEOPHILUS. Of course. They were very distinguished, and wore long velvet gowns.<sup>3</sup> One of them had two sparkling gold chains hanging round his neck, while the other – for God's sake – with that delicate hand of his sporting twelve rings on two of its fingers, seemed to be a wealthy jeweller, tearing out your eyes and heart as he admired it.

SMITHUS. Did they smack of Greek learning?<sup>4</sup>

THEOPHILO. Et di birra etiam dio.

PRUDENTIO. Togli via quell'etiamdio poscia é una absoleta et antiquata dictione.

FRULLA. Tacete maestro che non parla con voi.

SMITHO. Come erano fatti?

THEOPHILO. L'uno pare il connestabile della gigantessa, et l'orco: l'altro l'Amostante dalla Dea de la riputatione.

SMITHO. Si che erano doi?

THEOPHILO. Si per esser questo un numero misterioso.

PRUDENTIO. Ut essent duo testes.

FRULLA. Che intendete per quel testes?

PRUDENTIO. Testimoni esaminatori della Nolana sufficienza: At me hercle per che havete detto Theophilo che il numero, binario é misterioso?

THEOPHILO. Perche due sono le prime coordinationi, come dice Pithagora, finito et infinito: curvo et retto: destro et sinistro et vâ discorrendo. Due sono le spetie di numeri, pare et impare, de quali l'una é maschio, l'altra é femina. Doi sono gli Cupidi, superiore et divino, inferiore et volgare. Doi sono gl'atti dela vita, cognitione et affetto. Doi sono gl'oggetti di quelli, il vero et il bene. Due sono le specie di moti, retto cò il quale i' corpi tendeno alla conservatione, et circolare col quale si conservano. Doi son gli principii essenziali de le cose, la materia et la forma. Due le specifiche differenze della sustanza, raro et denso, semplice et misto. Doi primi contrarii et attivi principii, il caldo et il freddo. Doi primi parenti de le cose naturali, il sole et la Terra.

FRULLA. Conforme al proposito di que prefati doi. faró un'altra schala del binario. Le bestie entrorno ne l'archa á due á due, Ne uscirono anchora á due á due. Doi sono i' coriphei di segni celesti Aries et Taurus. Due sono le specie di Nolite fieri: Cavallo, et mulo. Doi son gli animali ad imagine similitudine del'huomo, la Scimia in terra, el Barbagianni in cielo. Due sono le false et honorate reliquie di Fiënze in questa patria: i' denti di Sassetto, et la barba di Pietruccia.

Doi sono gl'animali che disse il propheta haver piu intelletto ch'il popolo d'Israele: il bove, perche conosce il suo possessore, et l'asino, perche sa trovar il presepio del padrone. Doi furono le misteriose cavalature del nostro redentore, che significano il suo antico credëte Hebreo, et il novello Gentile; l'asina et il pullo. Doi sono da questi li nomi derivativi ch'han formate le ditioni titulari al secretario d'Augusto; Asinio, et Pullione. Doi sono i' geni de gl'asini, domestico et salvatico. Doi i' lor

THEOPHILUS. And beer also, forsooth.<sup>5</sup>

PRUDENTIUS. Leave out that “forsooth,” which has become an obsolete and antiquated expression.<sup>6</sup>

FRULLA. Keep quiet, sir. He’s not speaking to you.

SMITHUS. What did they look like?

THEOPHILUS. One of them looked like the constable of the female giant and the ogre; the other, the caliph of the Goddess of Fame.

SMITHUS. So there were two of them?

THEOPHILUS. Yes, because two is a mystical number.

PRUDENTIUS. *Ut essent duo testes.*<sup>7</sup>

THEOPHILUS. What do you mean by that “*testes*”?

PRUDENTIUS. That they were witnesses, examiners of the Nolan’s ability. *At me hercle,*<sup>8</sup> what made you say, Theophilus, that the binary number is mysterious?

THEOPHILUS. Because, as Pythagoras says, the primary co-ordinates are two in number: finite and infinite, curved and straight, right and left, and so on.<sup>9</sup> There are two kinds of numbers: even and odd, of which one is male and the other female. There are two Cupids: one lofty and divine, the other base and vulgar.<sup>10</sup> Two are the vital acts of life: knowledge and desire; and their objects are two, the true and the good.<sup>11</sup> There are two species of movement: in a straight line, by which bodies tend towards their conservation, and in a circle, by which they are conserved.<sup>12</sup> There are two essential principles of things: matter and form.<sup>13</sup> There are two specific differences in all substance: rarefaction and condensation, simple and composite.<sup>14</sup> The contrary and active principles of things are two: heat and cold. There are two first parents of the things in nature: the sun and the earth.<sup>15</sup>

FRULLA. In keeping with the notion of such pairs, here is another binary ladder. The animals entered the ark two by two; and likewise they came out two by two.<sup>16</sup> There are two leaders among the celestial signs: the Ram and the Bull.<sup>17</sup> There are two beasts of burden we are warned not to resemble: the horse and the mule.<sup>18</sup> There are two creatures made in the likeness of man: the ape on earth and the owl in the sky.<sup>19</sup> In this country there are two bogus relics from Florence: Sassetto’s teeth and Pietruccio’s beard.<sup>20</sup> The prophet claimed that there were two animals wiser than the people of Israel: the ox because it knows its master, and the ass because it can find its master’s crib.<sup>21</sup> Two were the mysterious beasts mounted by our Redeemer, signifying his ancient Hebrew and his modern Gentile believers: the she-ass and her colt.<sup>22</sup> Two names can

piu ordinarii colori, biggio, et morello. Due sono le piramidi nelle quali denno esser scritti, et dedicati all'eternita i' nomi di questi doi et altri simili dottori; la destra orecchia del Caval di Sileno, et la sinistra del'antagonista del Dio de gl'orti.

PRUDENTIO. Optime indolis ingenium, enumeratio minimé contemnenda.

FRULLA. Io mi glorio messer Prundêtio mio, per che voi approvate il mio discorso, che sete piu prudente ch' l'istessa prudentia, percio che sete la prudentia masculini generis.

PRUDENTIO. Neque id sine lepore, et gratia. Horsú isthæc mittamus encomia. Sedeamus quia, ut ait Peripateticorum princeps, sedendo et quiescendo sapimus: et cossi insino al tramontar del sole protelaremo il nostro tetralogo, circa il successo del colloquio del Nolano col dottor Torquato, et il dottor Nundinio.

FRULLA. Vorrei sapere quel che volete intendere per quel tretalogo.

PRUDENTIO. Tetralogo dissi io idest quatuororum sermo, come dialogo vuol dire duorum sermo, trilogio tritum sermo, et cossi oltre, de pentalogo, eptalogo, et altri, che abusivamente si chiamano dialogi, come dicono alchuni quasi diversorum logi: ma non é verisimile che gli greci invētori di questo nome, habbino quella prima sillaba Di, pro capite illius latine dictionis diversum.

SMITHO. Di gratia Signor maestro lasciamo questi rigori di gramatica, et venemo al nostro proposito.

PRUDENTIO. O seclum, voi mi parete far poco conto dello buone lettere. Come potremo far un buon tetralogo, se non sappiamo che significhi questa dittione tetralogo? et quod peius est, pensaremo che sia un dialogo? non ne á difinitione et a nominis explicatione exordium, come il nostro Arpinate ne insegna?

THEOPHILO. Voi messer Prudêtio sete troppo prudente: lasciamo vi priego questi discorsi grāmaticali, et fate conto che questo nostro ragionamento sia un dialogo: atteso che benche siamo quattro in persona, saremo dui in officio: di proponere, et rispondere; di ragionare et ascoltare. Hor per dar principio et reportar il negozio da capo; Venite ad ispirarmi ó Muse: Non dico á voi che parlate per gonfio et superbo verso in Helicon: per che dubito che forse nõ vi lamentiate di me al fine, quando dopo haver fatto sì lungho, et fastidioso peregrinaggio, varcati sì perigiosi mari, gustati sì fieri costumi; vi bisognasse discalze, et nude tosto repatriare, perche quá non son pesci per Lombardi. Lascio che non solo siete straniera, ma siete anchor di quella razza per cui disse un Poeta:

be derived from these and made to form the title of Augustus's secretary: Asinio and Pullione.<sup>23</sup> There are two kinds of ass: the tame and the wild; and they are normally of two colours: grey and dun. There are two pyramidal objects on which the names of these two doctors and their like should be inscribed and preserved to all eternity: the right ear of Silenus's horse, and the left ear of the enemy of Priapus.<sup>24</sup>

PRUDENTIUS. *Optime indolis ingenium, enumeratio minimè contemnenda.*<sup>25</sup>

FRULLA. I am really delighted, Master Prudentius, my friend, that I have won your approval; because you are more prudent than prudence itself. It could indeed be said that you are prudence *masculini generis*.<sup>26</sup>

PRUDENTIUS. *Neque id sine lepore, et gratia.* So now, *isthaec mittamus encomia. Sedeamus, quia, ut ait Peripateticorum princeps, sedendo et quiescendo sapimus;*<sup>27</sup> and so, until sunset, we will continue our tetralogue on the outcome of the discussion between the Nolan, Dr Torquatus, and Dr Nundinius.

FRULLA. I would like to know what you mean by that word "tetralogue."<sup>28</sup>

PRUDENTIUS. Tetralogue was the word I used: *idest quatuororum sermo*; just as dialogue means *duorum sermo*, triologue means *trium sermo*; and so on with pentologue, heptologue, and the following, which are improperly called dialogues, as if that word meant merely *diversorum logi*: although it is very unlikely that the Greek inventors of that noun thought of that first syllable *Di*, *pro capite illius latine dictionis diversum*.<sup>29</sup>

SMITHUS. For goodness sake, Master, that is enough of these grammatical distinctions. Let us get on with our subject.

PRUDENTIUS. *O sechum!* you seem to me to concede too little importance to the niceties of language. How can we have a satisfactory tetralogue if we do not even know what a tetralogue is and, *quod peius est*, think it is a dialogue? *Non ne à difinitione et a nominis explicatione exordiendum*, as our man from Arpinum teaches?<sup>30</sup>

THEOPHILUS. Really, Master Prudentius, you are too prudent. We have had enough of these questions of grammar. You can easily consider this conversation of ours a dialogue; for although there are four of us, only two will have the task of proposing a subject and replying, of talking and listening. Now, to get things going – starting from the beginning – come and inspire me, O Muses. I am not addressing you who speak in proud and swelling verse on Helicon, because I fear that you would complain about me, in the end, when – after a long and troublesome pilgrimage, crossings over dangerous seas, and the discovery of arrogant habits and customs – you would be forced to return home naked and unshod, since here you would find little to suit your tastes. Given that you are not only foreigners, but from that race of which a poet said:

Non fù mai Greco di malitia netto.

Oltre che non posso inamorarmi di cosa ch'io non vegga. Altre, altre sono che m'hanno incathenata l'alma. A' voi altre dumque dico gratiose, gentili, pastose, morbide, gioveni, belle, delicate, biondi capelli, bianche guance, vermiglie gote, labra succhiose, occhi divini, petti di smalto, et cuori di diamante: per le quali tanti pensieri fabrico ne la mente, tanti affetti accolgo nel spirto, tante passioni concepò nella vita: tante lachrime verso da gl'occhi: tanti sospiri sgombro dal petto: et dal cor sfavillo tante fiamme, A' voi Muse d'Inghilterra dico, inspiratemi, suffiatemi, scaldatemi, accendetemi, lambiccatemi, et risolvete mi in liquore, date mi in succhio, et fatemi comparir non con un picciolo delicato, stretto, corto, et succinto epigramma: ma con una copiosa et larga vena di prosa lunga, corrente, grande, et soda: onde non come da un arto calamo, ma come da un largo canale mande i' rivi miei. Et tu Mnemosine mia ascosa sotto trenta sigilli, et rinchiusa nel tetro carcere dell'ombre de le Idee, intonami un poco ne l'orecchio.

A i' di passati vennero doi al Nolano da parte d'un Regio scudiero facendogl'intendere qualmente colui bramava sua conversatione per intender il suo Copernico, et altri paradossi o. di sua nova philosophia. Al che rispose il Nolano, che lui non vedea per gl'occhi di Copernico, ne di Ptolomeo; ma per i propri quãto al giuditio, et la determinatione; benche quanto alle osservationi stima dover molto á questi et altri solleciti mathematici, che successivamente á tempi et tempi, giongendo lume a lume: ne han donati principii sufficienti per i' quali siamo ridutti á tal giudicio, quale non possea se non dopo molte non ociose etadi esser parturito.

Giongendo che costoro in effetto son come quelli interpreti che traducono da uno idioma á l'altro le paroli: ma sono gl'altri poi che profondano ne sentimenti, et nõ essi medesimi. Et son simili á qué rustici che rapportano gl'affetti, et la forma d'un conflitto á un capitano absente: et essi non intendono il negocio, le ragioni, et l'arte, co la quale questi son stati vittoriosi: ma colui che há esperienza, et meglor giudicio nel'arte militare. Cossi á la Thebana Mãto, che vedeva ma non intẽdeva: Tiresia cieco, ma divino interprete, diceva.

Visu carentem magna pars veri latet,  
Sed quo vocat me patria, quo Phœbus sequar,  
Tu lucis inopem gnata genitorem regens,  
Manifesta sacri signa fatidici refer.

Never was Greek from malice free.<sup>31</sup>

Besides, I am unable to love what I cannot see: and then, there are others who have enslaved my soul. It is you I am addressing, you graceful, kind, smooth, soft, youthful, beautiful, delicate, golden-haired, fair-skinned, red-cheeked, full-lipped, bright-eyed, hard-hearted Muses of England. Under your influence I forge many thoughts in my mind; am much affected in my soul; conceive many passions in my life; shed many tears from my eyes; heave many sighs from my breast, and kindle many flames in my heart. It is you whom I invoke to inspire me, to breathe your influence on me, to warm me, inflame me, distil me and resolve me into a dew, to suckle me and cause me to express myself – not in some small, feeble, compressed, brief, and succinct epigram – but in a generous and copious vein of prose, lengthy, flowing, and full of substance – so that the rivers of my invention may no longer trickle through a narrow reed, but run in an ample channel. And you, Mnemosyne mine, hidden beneath thirty seals and immured within the dark prison of the shadows of ideas, whisper to me in my ear.<sup>32</sup>

Some days ago two messengers came to the Nolan on behalf of a knight of the Court. They told him that this gentleman wished to converse with him about his opinion of Copernicus and other paradoxes of his new philosophy.<sup>33</sup> The Nolan replied that in matters of judgment and reasoning he saw through his own eyes and not those of Copernicus or Ptolemy. Yet, with regard to their observations, he knew that he owed much to these and other keen mathematicians who in successive ages have added light to light, permitting the formation of judgments which otherwise could only have been achieved through the travail of many ages. He added that such men are like interpreters who translate words from one language into another; yet it is not they but others who finally reach the heart of the matter. Again, they are like rustics who report the progress and fortunes of a battle to an absent captain; although they themselves are unable to understand the strategies, the causes, and the design which have led to the victory, those being matters which require the experience and the mature judgment of an expert in the military art.<sup>34</sup> So it was that the blind but divinely inspired Tiresias said to the Theban Manto who saw but could not understand:

From lack of sight springs ignorance.

But whither [the Sun] God and country calles, with willing minde I goe.

Thou, O daughter mine, mine only prop and stay:

The secret hidden mysteries and sacred signs outsay.<sup>35</sup>



Similmente che poteimo giudicar noi, si le molte et diverse verificationi de l'apparenze de corpi superiori, ô circostanti, non ne fussero state dichiarate et poste avanti gl'occhi de la ragione? certo nulla. Tutta via dopò haver rese le gratié á gli dei' distributori de doni che procedono dal primo, et infinito omnipotente lume; et haver magnificato il studio di questi generosi spirti, conoscemo apertissimamente che doviamo aprir gl'occhi a' quello ch'hanno osservato, et visto: et non porgere il consentimento a' quel ch'hanno conceputo, inteso, et determinato.

SMITHO. Di gratia fatemi intendere che opinione havete del Copernico?

THEOPHILO. Lui havea un grave, elaborato, sollecito, et maturo ingegno: huomo che non e' inferiore á nessuno astronomo che sii stato avanti lui, se non per luogho di successione et tempo, huomo che quanto al giuditio naturale é stato molto superiore á Tolomeo, Hipparco, Eudoxo, et tutti gl'altri, ch'han caminato appó i vestigii di questi: alche é divenuto per essersi liberato da alchuni presuppositi falsi de la comone et volgar philosophia, non voglio dir cecitá. Ma però non se n'é molto allontanato: per che lui piú studioso dela mathematica che de la natura, non hà possuto profundar, et penetrar sin tanto che potesse à fatto togler via le radici de inconvenienti et vani principii, onde perfettamente scioglesse tutte le contrarie difficultá, et venesse a' liberar et se, et altri da tãte vane inquisitioni, et fermar la contemplatione ne le cose costãte et certe. Cõ tutto ciò chi potra' a' pieno lodar la magnãnimita di questo Germano, il quale havêdo poco riguardo á la stolta moltitudine, e' stato si saldo contra il torrente de la cõtraria fede? et benche quasi inerme di vive raggioni, ripigliãdo quelli abietti, et rugginosi fragmenti ch'ha possuto haver per le mani da la antiquitá; le há ripoliti, accozzati, et risaldati in tãto con quel suo piu matêathico che natural discorso, ch'há resa la causa già ridicola, abietta, et vilipesa: honorata, preggiata, piu verisimile che la contraria; et certissimãente piu comoda et ispedita per la theorica et

In the same way, we may ask what judgments we could make if the many and various observations of the appearances of the celestial bodies above or around us had not been carried out and presented to the scrutiny of our reason. Certainly, none at all. Nonetheless, after we have given thanks to the gods who distribute the gifts which proceed from the primal, infinite, and almighty lamp, and after we have praised the studies of these noble spirits, we openly recognize that it is our task to make use of their observations but not necessarily to consent to what they have deduced from them.

SMITHUS. I would be grateful if you could tell me your opinion of Copernicus.

THEOPHILUS. He was a man of profound, refined, diligent, and mature genius, second to none of the astronomers who preceded him, except in so far as he came later than them in time. His judgment in matters of natural philosophy was far superior to that of Ptolemy, Hipparchus, Eudoxus, and all the others who followed in their footsteps.<sup>36</sup> He got so far because he freed himself from a number of false presuppositions, not to say blindness and error, which characterize the commonly accepted philosophy. Yet he did not leave this philosophy far enough behind him; for, in so far as he was a student of mathematics rather than of nature, he was unable to penetrate those depths which would have allowed him to eradicate the useless and inappropriate principles from which it stems. Only by so doing would he have been able to dispel completely the contradictions it contains, free himself and others from many vain speculations, and fix our attention on things which are constant and certain. That said, who will ever be able to praise sufficiently the great and noble genius of this German? Heedless of the vulgar herd, he stood firm against the torrent of contrary beliefs; and although almost destitute of direct proofs, he took up the despised and rusty fragments which he found in antiquity until, with that mathematical rather than natural kind of reasoning of his, he had rendered them newly shining, coherent, and sound. Thus he rehabilitated a cause formerly covered with ridicule and scorn until it became once more

raggione calcolatoria. Cossi questo Alemano benche non habbi havuti sufficienti modi per i quali oltre il resistere, potesse á bastanza vincere, debellare, et supprimere la falsità. Há pure fissato il piede in determinare ne l'animo suo, et apertissimamente confessare ch'al fine si debba conchiudere necessariamente che piu tosto questo globo si muova á l'aspetto de l'universo che sii possibile che la generalità di tanti corpi innumerabili, de quali molti son conosciuti piu magnifici, et piu grandi: habbia al dispetto del la natura, et raggioni, che con sensibilissimi moti cridano il contrario; conoscere questo per mezzo, et base de suoi giri, et influsi. Chi dunque sarà si villano et discortese verso il studio di quest huomo ch'havendo posto in oblio quel tanto ch' há fatto con esser ordinato da gli dei come una aurora, che dovea precedere l'uscita di questo sole de l'antiqua vera philosophia, per tanti secoli sepolta nelle tenebrose caverne de la cieca, maligna, proterva, et invida ignoranza: vogli notandolo per quel che non hà possuto fare, metterlo nel medesimo numero della gregaria moltitudine che discorre, si guida, et si precipita piu per il senso de l'orecchio d'una brutale et ignobil fede: che vogli computarlo trà quei che col felice ingegno s'han possuto drizzare, et inalzarsi per la fidissima scorta del occhio della divina intelligenza?

Hor che dirró io del Nolano? Forse per essermi tanto prossimo quanto io medesimo a' me stesso, non mi converrà lodarlo? Certamente huomo ragguonevole non sarà che mi riprenda in ciò: atteso che questo talvolta non solamente conviene, ma è ancho necessario, come bene esprese quel terso et colto Tansillo.

Bench'ad un huom, che preggio et honor brama,  
 Di se stesso parlar molto sconvogna:  
 Per che la lingua, ov' il cor teme, et ama,  
 Non é nel suo parlar di fede degna:  
 L'esser altrui precon de la sua fama  
 Pur qualche volta par che si convegna,  
 Quando vien á parlar per un di dui,  
 Per fuggir biasmo, ó per giovar altrui.

Pure se sarà un tanto supercilioso che non vogli a' proposito alchuno patir la lode propria ó come propria: sappia che quella talvolta non si può dividere da sui presenti, et riportati effetti. Chi riprenderà Apelle che presentando l'opra, a' chi lo vuol sapere, dice quella esser sua manifattura? chi biasimarà Phydia s'a' un che dimanda l'authore di questa magnifica scoltura, risponda esser stato lui? Hor dunque a'

honoured, valued, generally considered closer to the truth than the theory it replaced, and certainly more convenient and agile for the theory and calculation of the phenomena. So we can say that this German managed to resist falsehood, although he was without sufficient means to overcome, defeat, and suppress it altogether. Nevertheless, in the end he stood fast and proclaimed privately and in public the necessary conclusion that this globe moves with respect to the universe rather than that all those innumerable bodies, many of which are known to be far greater and more splendid, should, against all rhyme and reason, find the centre and basis of all their revolutions and influences in the earth. Who would be so unfair and so ungenerous as to belittle the achievement of this man, either by underlining that which he failed to do or by placing him among the gregarious multitude which chatters, moves forward, and finishes by stumbling because of the ear it lends to a brutal and ignoble faith? It was ordained by the gods that he should announce the dawn that precedes the rising sun of the ancient and true philosophy, buried for so many centuries in the dark caverns of a blind, malign, insolent, and envious ignorance. He can be numbered among those whose fertile genius has enabled them to rise up and hold their heads high under the benign glance of the divine intelligence.<sup>37</sup>

And now, what shall I say of the Nolan? Is it perhaps unbecoming in me to praise him, given that he is closer to me than I am to myself?<sup>38</sup> Yet surely no reasonable man would reprove me for doing so; given that sometimes self-praise is not only appropriate but necessary, as that polished and cultivated poet Tansillo so aptly put it:

The man who longs for honour and esteem,  
Should not of himself speak much or long;  
When fear and self-love in the heart do teem,  
The tongue gives vent to words which may be wrong.  
Yet there are times when others, it may seem,  
Should hear our fame announced in rhyme or song;  
For we may wish to clear ourselves from blame,  
Or profit others by praising our own name.<sup>39</sup>

He who disdains, on any pretext, to hear or sing his own praises should realize that it is sometimes impossible to separate them from a consideration of his own achievements and their results. Who will scold Apelles for admitting, when asked, that the work on display was his own?<sup>40</sup> Who will blame Phidias for replying, to someone who asked what artist made this magnificent sculpture, that it was himself?<sup>41</sup>

fin ch'intendiate il nogocio presente, et l'importanza sua: vi propono per una conclusione che ben presto, facile, et chiarissimamente vi si provará: che se vien lodato lo antico Típhi per havere ritrovata la prima nave, et cogl'Argonauti trapassato il mare:

Audax nimium, qui freta primus,  
Rate tam fragili perfida rupit:  
Terrasque suas post terga videns,  
Animam levibus credidit auris.

Se a' nostri tempi vien magnificato il Colombo, per esser colui, de chi tanto tempo prima fú pronosticato,

Venient annis  
Secula seris, quibus Oceanus  
Vincula rerum laxet, et ingens  
Pateat tellus. Tiphysque novos  
Detegat orbes, nec sit terris  
Ultima Thule.

Che dè farsi di questo che ha' ritrovato il modo di montare al cielo, discorrere la circonferenza de le stelle, lasciarsi a' le spalli la convessa superficie del firmamento? Gli Típhi han ritrovato il modo di perturbar la pace altrui, violar i' patri genii de le reggioni, di confondere quel che la provida natura distinse, per il commertio radoppiar i difetti, et gionger vitii a vitii de l'una et l'altra generatione, con violenza propagar nove follie, et piantar l'inaudite pazzie ove non sono, conchiudendosi al fin piu saggio quel che e' piu forte: mostrar novi studii, instrumenti, et arte de tirannizar, et sassinar l'un l'altro: per mercé de quai gesti, tempo verrà ch'havendono quelli a sue male spese imparato, per forza de la vicissitudine de le cose, sapranno et potranno renderci simili, et peggior frutti de sì perniciose inventioni.

Candida nostri secula patres  
Videre procul fraude remota:  
Sua quisque piger littora tangens,  
Patrioque senex fractus in arvo  
Parvo dives: nisi quas tulerat

Similarly, in order that you may understand what follows, and appreciate its importance, I will propose to you a conclusion which will soon be easily and evidently proved: that if the ancient Tiphys is praised for having invented the first ship and crossed the sea with the Argonauts:

Lavish of life and dreadlesse was the wight,  
 Attempting first in slender tottring Barge  
 With flying Ore the sliced wave to smite,  
 And durst commit the dainty tender charge  
 Of hazard life to inconstant course of wynde ...<sup>42</sup>

and if in our times Columbus is exalted as a Tiphys, of whom it was foretold long ago:

Time shall in fine out breake  
 When Ocean wave shall open every Realme.  
 The wandring World at will shall open lye  
 And Typhis will some newe found Land survey  
 Some travelers shall the Countreys farre escrye,  
 Beyond small Thule, knowne furthest at this day<sup>43</sup>

then what shall be said of the man who has found the way to fly into the sky, to leap over the circumference of the stars, and to leave behind him the convex boundary of the universe?<sup>44</sup> Tiphys and his like discovered how to disturb the peace of others, how to violate the local genius of a place, how to confuse those things which nature had kept apart, how to duplicate one's faults through commerce, how to add new vices to old and propagate new follies by means of violence, how to introduce unheard-of forms of madness where before they were unknown. Finally they demonstrated that wisdom lay in strength, and introduced the arts of tyranny and murder, for which they developed ever more refined instruments and techniques. The time will come when the natives of those places, having learnt their lesson only too well, will discover in the inevitable course of events how to repay us in the same coin, perhaps even improving on the wickedness they were taught.

The golden worlde our fathers have possest,  
 Where banyshyt fraude durst never come in place,  
 All were content to live at home in rest,  
 With horye head, gray beard, and furrowed face.  
 Whych tract if time within his countrey brought.

Natale solum non norat opes.  
 Bené dissepti fœdera mundi  
 Traxit in unum Thessala pinus,  
 Iussitque pati verbera pontum,  
 Partemque metus fieri nostri  
 Mare sepositum.

Il Nolano per caggionar effetti al tutto contrarii, há disciolto l'animo humano, et la cognitione che era rinchiusa ne l'artissimo carcere de l'aria turbulento, onde a pena come per certi buchi havea facultá de remirar le lontanissime stelle, et gl'erano mozze l'ali, a' fin che non volasse ad aprir il velame di queste nuvole, et veder quello che veramente la' su si ritrovasse, et liberarse da le chimere di quei che assendo usciti dal fãgo, et caverne de la terra, quasi Mercuri, et Appollini discesi dal cielo, con moltiforme impostura han ripieno il mondo tutto d'infinite pazzie, bestialitá, et vitii, come di tante vertu, divinità, et discipline: smorzãdo quel lume che rendea divini et heroichi gl'animi di nostri antichi padri, approvãdo, et cõfirmando le tenebre caliginose de sophisti et asini. Per il che gia tâto tẽpo l'humana ragione oppressa, tal volta nel suo lucido intervallo piangendo la sua sì bassa conditione, alla divina et provida mente, che sempre ne l'interno orecchio li sussurra, si rivolge con simili accenti.

Chi salirà per me madonna in cielo,  
 A' riportarne il mio perduto ingegno?

Hor ecco quello ch'há varcato l'aria, penetrato il cielo, discorse le stelle, trapassati gli margini del mondo, fatte svanir le phantastiche muragla de le prime, ottave, none, decime, et altre che vi s'havesser potute aggiungere sphere per relatione de vani mathematici, et cieco veder di philosophi volgari. Cossi al cospetto d'ogni senso et ragione, co la chiave di solertissima inquisitione aperti que chiostri de la veritá che da noi aprir si posseano, nudata la ricoperta et velata natura: hà donati gl'occhi à le talpe, illuminati i ciechi che non possean fissar gl'ochi et mirar l'imagin sua in tanti specchi che da ogni lato gli s'opponeno. Sciolta la lingua a muti, che non sapeano et non ardivano esplicar gl'intricati sentimenti. Risaldati i' zoppi che non valean far quel progresso col spirito, che non può far l'ignobile et dissolubile

Riche having little, for more they did not toyle,  
 No vente for wares, nor Trafique far they sought,  
 No wealth that sprange beyond theyr native soyle,  
 The Thessail shyp together now hath set,  
 The world that well with Seas dissevered lay,  
 It bides the flouds with Oares to be bet,  
 And streames unknowen with shipwreck us to fray...<sup>45</sup>

The Nolan's achievement is of quite another kind. He has released the human spirit with its capacity for knowledge from its false prison of turbulent air where the distant stars could only be seen as if through narrow chinks. Its wings were clipped, so that it was prevented from flying upwards and piercing through the mist of clouds to see what really lies up there. The Nolan has freed it from the ghosts who have crawled out of the mud and caves of the earth as if they were so many Mercurys and Apollos descended from heaven. These, with impostures of all kinds, have filled the whole world with countless follies and bestial vices disguised as virtue, piety, and discipline, dimming that light which made the souls of our ancient fathers heroic and divine, while welcoming and preferring the obscure shadows of sophists and fools. And so human reason, oppressed for all this long while, and at times in her lucid intervals bewailing her base condition, appeals to the wisdom of the divine mind, which never fails to murmur in her ear, crying:

Mistresse, who shall for me to heav'n up fly,  
 To bring again from thence my wandring wit ...<sup>46</sup>

Here, then, you see the man who has soared into the sky, entered the heavens, wandered among the stars, passed beyond the boundaries of the universe, effaced the imaginary barriers constituted by the first, the eighth, the ninth, and tenth spheres, and any others they might wish to add on the authority of the false mathematics and distorted vision of the commonly accepted philosophy. By the light of sense and reason, and with the key of diligent inquiry, he has opened those cloisters of truth which it is given us to open, stripped the veils and coverings from the face of nature, given eyes to the moles and sight to the blind who were unable to contemplate her image in the mirrors which reflect her on every side. He has loosened the tongues of the mute who were unable and unwilling to unravel hidden meanings, and has healed the lame who were loath to make that progress of the spirit which the base and corruptible flesh could not achieve. He brings the sun, moon, and other



composto. Le rende non men presenti, che si fussero proprii habitatori del sole, de la luna, et altri nomati astri. Dimostra quanto siino simili, o' dissimili, maggiori, o' peggiori que corpi che veggiamo lontano, a' quello che n'e' appresso, et a' cui siamo uniti, et n'apre gl'occhi ad veder questo nume, questa nostra madre, che nel suo dorso ne alimenta, et ne nutrisce, dopò haverne prodotti dal suo grembo al qual di nuovo sempre ne riaccoglie; et non pensar oltre, lei essere un corpo senza alma, et vita, et anche feccia trà le sustanze corporali. A questo modo sappiamo che si noi fussimo ne la luna, o in altre stelle: non sarreimo in loco molto dissimile a' questo, et forse in peggiore: come possono esser altri corpi cossi buoni, et ancho meglori per se stessi, et per la maggior felicità de propri animali. Cossi conoscemo tante stelle, tanti astri, tanti numi, che son quelle tante centenaia de miglaia ch'assistono al ministerio et contemplatione del primo, universale, infinito, et eterno efficiente. Non é piu imprigionata la nostra ragione cò i ceppi de phâstastici mobili, et motori otto, nove, et diece. Conoscemo che non é ch'un cielo, un'etherea reggione immensa, dove questi magnifici lumi serbano le proprie distanze, per comodità de la participatione de la perpetua vita. Questi fiammeggianti corpi son que ambasciatori, che annuntiano l'eccellenza de la gloria, et maesta de Dio. Cossi siamo promossi á scuoprire l'infinito effetto dell'infinita causa, il vero, et vivo vestigio de l'infinito vigore. Et habbiamo dottrina di non cercar la divinità rimossa da noi: se l'habbiamo appresso, anzi di dentro piu che noi medesmi siamo dentro à noi. Non meno che gli coltori de gl'altri mondi non la denno cercare appresso di noi, l'havendo appresso, et dentro di se. Atteso che non piu la luna è cielo à noi, che noi alla luna. Cossi si può tirar à certo meglor proposito quel che disse il Tansillo quasi per certo gioco.

Se non toglete il ben che v'e' da presso,  
 Come torrete quel che v'e' lontano?  
 Speggiar il vostro mi par fallo espresso,  
 Et bramar quel che sta nel'altrui mano.  
 Voi sete quel ch'abandonò se stesso,  
 La sua sembianza desiando in vano:  
 Voi sete il veltro che nel rio trabocca,  
 Mentre l'ombra desia di quel ch'ha in bocca.  
 Lasciate l'ombre et abbracciate il vero,  
 Non cangiate il presente col futuro,  
 Io d'haver di meglor già non dispero,

known stars as near to us as if we dwelt upon them, and demonstrates how those distant bodies are like or different, greater or less than this one which is so near at hand, and to which we are united. Then he opens our eyes in contemplation of this earth, our divine mother, who produces us from her womb, feeds and nourishes us on her back, and gathers us ever to herself again. So he teaches us not to think of her as a body without soul and life, made of the dregs of corporeal substances. In this way we realize that if we were in the moon, or some other star, we would not be in a place very dissimilar to this one, and perhaps even worse. For it is possible that there are other globes as good as this, or even better for the nourishment of their own life and the happiness of those who live upon them. And so we understand how the hundreds of thousands of heavenly bodies, which are so many stars, planets, and divinities, minister in the contemplation of the first, universal, infinite, and eternal efficient cause. Our reason is no longer imprisoned in absurd fantasies such as the eight, nine, or ten moving spheres. We know that there is only one heaven, which is an immense, ethereal region where these magnificent lamps keep their appointed places in order to participate in perpetual life. These globes, all ablaze, are ambassadors who announce the excellence of the glory and majesty of God. We are encouraged to discover the infinite effect of the infinite cause, to trace the true and lively workings of infinite power. It is our doctrine that we should not look for the divine outside ourselves, given that we have it near at hand, even within, more than we are within our own selves. In the same way, those who live in other worlds should not expect to find God in ours, for they have him near and within themselves. For the moon is no more heaven to us than we are to the moon. So that it is possible to understand in another and better sense the words of Tansillo, which were very likely written in jest:

If you scorn what you find on your own land,  
How shall you profit from what is far away?  
To long for what is held in another's hand,  
Is to despise all that is yours today.  
You are the man who loses himself in dream,  
A shadow image of himself pursuing:  
You are the dog who falls into the stream  
Seeking the shade of what its mouth is chewing.  
Leave vain illusions and the truth embrace,  
Change not the present for a future state.  
I hope one day a better path to trace;

Ma per viver piu lieto et piu sicuro,  
 Godo il presente, et del futuro spero:  
 Cossi doppia dolcezza mi procuro.

Cò ciò un solo, benche solo, può et potrà vècere, et al fine harà vinto, et triumphará contra l'ignoranza generale: et non e' dubio, se la cosa dé, determinarsi non cò la moltitudine di ciechi, et sordi testimoni, di convitii, et di parole vane; ma cò la forza di regolato sentimento, il qual bisogna che còchiuda al fine, perche in fatto tutti gl'orbi non vaglono per uno che vede, et tutti i' stolti non possono servire per un savio.

PRUDENTIO.

Rebus, et in sensu, si non est quod fuit ante,  
 Fac vivas contentus eo quod tēpora præbent,  
 Iudicium populi nunquā contempseris unus,  
 Ne nulli placeas dū vis contemnere multos.

THEOPHILO. Questo e' prudentissimamente detto in proposito del convitto et regimento comone, et pratica de la civile conversatione: ma non già in proposito della cognitione de la verità, et regola di contemplatione, per cui disse il medesimo saggio.

Disce, sed a' doctis, indoctos ipse doceto.

E' ancho quel che tu dici in proposito di dottrina espediente a' molti, et però e' consiglio che riguarda la moltitudine, per che non fá per le spalli di qualsivogla questa soma, ma per quelli che possono portarla come il Nolano: o' almeno muoverla, verso il suo termine senza incorrere difficultá disconveniente, come il Copernico hà possuto fare.

Oltre color ch'hanno la possessione di questa verità non denno ad ogni sorte di persona comunicarla, si non voglono lavar (come se dice) il capo a' l'asino, se non vuolè vedere quel che fan fare i' porci á le perle, et raccoglere qué frutti del suo studio et fatica, che suole produrre la temeraria et sciocca ignoranza, insieme co la presuntione et incredulità, la quale e' sua perpetua et fida compagna. Di qué dunque indotti possiamo esser maestri, et di quei ciechi illuminatori; che non per inhabilità di naturale impotenza; o' per privation d'ingegno et disciplina: ma sol per non avvertire, et non considerare, son chiamati orbi: il che avviene per la privation de l'atto solo, et non de la facultá anchora. Di questi sono alchuni tanto maligni et scelerati, che per una certa neghittosa invidia, si adirano, et inorgogolano contra colui che par loro voglia insegnare;

But only to enjoy, if not too late.  
 Loving now, I hope a better future to secure;  
 In that way a double good I for myself procure.<sup>47</sup>

A single man, although alone, can and will win the day, triumphing over the general ignorance. Without doubt the question must be settled, not by a multitude of blind and deaf witnesses whose convictions and words are of no worth, but by the force of a well-regulated understanding which leads towards conclusive findings. For one who can see is worth all the blind, and a multitude of fools is no substitute for a single sage.

PRUDENTIUS.

*Rebus, et in sensu, si non est quod fuit ante,  
 Fac vivas contentus eo quod tempora præbent.  
 Iudicium populi nunquam contempseris unus,  
 Ne nulli placeas dum vis contemnere multos.*<sup>48</sup>

THEOPHILUS. This is most prudently said as far as the conduct of ordinary life and the practice of civil conversation are concerned; but it does not apply to a knowledge of truth, nor to the discipline of thought, so that the same sage said:

*Disce, sed a doctis; indoctos ipse doceto.*<sup>49</sup>

For what you say is a doctrine of expedience suitable for the crowd, a piece of advice concerning the multitude; whereas the burden I am talking about is not suitable for all shoulders, but only for those able to bear it, like the Nolan's, or at least for those capable of advancing it towards its goal without meeting severe impediments, as Copernicus was able to do. And those who possess such truth must not communicate it to any and everyone unless they wish to lose their labour, or to see what happens when pearls are cast to swine. Otherwise they may reap from their studies and fatigue the consequences commonly produced by over-confident and stupid ignorance, and the rude presumption which is its habitual and faithful companion.<sup>50</sup> We will, then, be able to teach and illuminate the ignorant and the blind who have had no opportunity of considering these subjects – who have been deprived of the act, not the faculty of learning – but not those who suffer from some natural disability or handicap. Even then there will be some so wicked, so full of indolent envy and contempt, that they will rail against the very person who desires to teach them. For they are

essendo, come son creduti, et (quel ch'e' peggio) si credeno dotti et dottori, ardisca mostrar saper quel che essi non sanno. quá le vederete infocar et rabbiarsi.

FRULLA. Come avvenne a' qué doi dottori barbareschi, de quali parlaremo, l'un de quali non sapendo piú che si rispondere, et che argomentare; s'alza in piedi in atto di volerla finir cò una provisione di adagii d'Erasmus, ô ver cò, í pugni, cridò quid? non ne Anticyrâ navigas? tu ille Philosophorum protoplastes, qui nec Ptolomeo, nec tot, tantorumque, Philosophorum, et Astronomorum maiestati quippiam concædis? Tu ne nodum in scirpo queritas? et altri propositi, degni d'essergli decisi á dosso cò quelle verghe doppie (chiamate bastoni) co le quale i' facchini soglon prender la misura per far i' gipponi à gl'asini.

THEOPHILO. Lasciamo questi propositi per hora. Sono alchuni altri che per qualche credula pazzia, temẽdo che per vedere non se guastino, voglono ostinatamente perseverare ne le tenebre di quello ch'hanno una volta malamente appreso. Altri poi sono i' felici et ben nati ingegni, verso gli quali nisciuno honorato studio é perso, temerariamente non giudicano, hanno libero l'intelletto, terso il vedere, et son prodotti dal cielo si non invetori, degni però esaminatori, scrutatori, giodici, et testimoni de la veritá. Di questi hà guadagnato, guadagna, et guadagnerà, l'assenso, et l'amore il Nolano. Questi son que nobilissimi ingegni che son capaci d'udirlo, et disputar cò lui. Per che in vero nisciuno e' degno di contrastarli circa queste materie: che si non vien contento di cõsentirgli à fatto, per non esser tanto capace: non gli sotto scriva al meno ne le cose molte, maggiori, et principali: et confesse che quello che non può conoscere per piu vero: é certo che sii piu verisimile.

PRUDENTIO. Sij come la si vuole, io non voglo discostarmi dal parere de gl'antichi, per che dice il saggio, Ne l'antiquità é la sapienza.

THEOPHILO. Et soggiunge in molti anni la prudenza. Si voi intendreste bene quel che dite, vedreste che dal vostro fondamẽto s'inferisce il còtrario di quel che pensate: voglio dire che noi siamo piu vecchi et habbiamo piu lungha età che i' nostri predecessori, intendo per quel che appartiene in certi giuditij, come in proposito. Non hà possuto essere si maturo il giodicio d'Eudosso che visse poco dopo la rinascenza astronomia, se pur in esso non rinacque: come quello di Calippo che visse trent anni dopo la morte d'Alessandro magno, il quale come

reputed to be cultured, and, which is worse, they believe themselves to be so; and they burn with a desire to show off their learning even if, in reality, they are ignorant. Such people you will see raging and fuming.

FRULLA. This happened to those two barbarous doctors we shall discuss. One of them, not knowing either whether to reply or what arguments to use, rose to his feet and tried to end the controversy by firing off a discharge of Erasmus's adages, waving his fists and shouting: – *Quid? non ne Antyciram navigas? Tu ille philosophorum protoplastes, qui nec Ptolomeo, nec tot tantorumque philosophorum et astronomorum maiestati quippiam concedis? Tu ne nodum in scirpo quaeritas?*<sup>21</sup> – and other remarks worthy of being scored onto his back with blows from those double canes called *bastoni* that porters use to measure the saddle-cloths for their asses.

THEOPHILUS. Let us talk no more of them for the moment. There are others who, in their credulous folly, obstinately choose to persist in the obscurity of concepts that they have inadequately grasped, fearing lest understanding might compromise them. Then there are those again to whose well-developed and talented intelligence no serious form of study comes amiss: these refrain from judging rashly, and they have unprejudiced intellects and far-seeing minds. They are descended from heaven to be, if not inventors, then at least inquirers into the truth, as well as its judges and witnesses. From these men the Nolan has won, wins, and will continue to win love and approval. They are men whose admirable and noble minds can understand him and engage him in debate. For it has to be admitted that no one is qualified to oppose him on such matters; so that if they are unwilling to go with him all the way, because they are unable to, they should at least accept his principal arguments and admit that those whose truth cannot be demonstrated are without doubt extremely probable.

PRUDENTIUS. Be that as it may, for my part I am loath to depart from the opinion of the ancients, because as the wise man says: in antiquity lies wisdom.

THEOPHILUS. But he adds: and in many years there is prudence.<sup>52</sup> If only you understood fully what you are saying, you would see that the exact opposite of your opinion is to be inferred from your premises: namely, that we are older and more mature than our predecessors, that is to say as far as certain kinds of judgment are concerned, such as those we are discussing. It was impossible that the theories of a Eudoxus should be as advanced as those of Callippus, for he lived soon after the revival of astronomy – if, indeed, it was not born again with him – whereas Callippus lived 30 years after the death of Alexander the Great, and

giunse anni ad anni, possea giongere anchora osservanze ad osservãze. Hipparco, per la medesima raggione, dovea saperne piu di Calippo, per che vedde la mutatione fatta fino à centonovantasei anni dopo la morte d'Alessandro. Menelao Romano Geometra per che vedde la differenza de moto quatrocento sessanta dui anni dopo Alessandro morto; e' raggione che n'intendesse piu ch'Hipparco. Piu ne dovea vedere Machometto Aracense mille ducento et dui anni dopo quella. Piu n'ha veduto il Copernico quasi à nostri tempi appresso la medesima anni mille ottocento quarantanove. Ma che di questi alchuni che son stati appresso, non siino però stati piu accorti che quei che furon prima: et che la moltitudine di qué che sono a nostri tempi non há però piu sale: questo accade per cio che quelli non vissero, et questi non vivono gl'anni altrui et (quel che e' peggio) vissero morti quelli et questi ne gl'anni proprii.

PRUDENTIO. Dite quel che vi piace, tiratela a' vostro bel piacer dove vi pare, io sono amico de l'antiquità, et quãto appartiene a' le vostre opinioni o' paradossi nõ credo che si molti et si saggi sien stati ignoranti come pensate voi, et altri amici di novità.

THEOPHILO. Bene maestro Prudẽtio si questa voglare, et vostra opinione per tanto e' vera, in quanto che e' antica: certo era falsa quando la fu nova. Prima che fusse questa philosophia conforme al vostro cervello; fu' quella de gli Caldei, Egittii, Maghi, Orphici, Pithagorici et altri di prima memoria, conforme al nostro capo: da quali prima si ribbellorono questi insensati, et vani logici, et mathẽatici, nemici non tanto de la antiquità quanto alieni da la veritá. Poniamo dunque da canto la raggione de l'antico et novo; atteso che non e' cosa nova, che non possa esser vecchia: et non e' cosa vecchia, che non sii stata nova: come ben notò il vostro Aristotele.

FRULLA. S'io non parlo scoppiaró, creparò certo. Havete detto il vostro Aristotele, parlãdo a' mastro Prudentio: Sapete come intendo che Aristotele sii suo, idest lui sii, peripatetico? (di gratia facciamo questo poco di digressione per modò di parentesi) come di dui ciechi mendichi ala porta de l'arcivescovato di Napoli, l'uno se diceva Guelfo et l'altro Ghibellino: et con questo si cominciorno si crudamente a' toccar l'un l'altro con qué bastoni ch'haveano, che si non fussero stati divisi, nõ só come sarebbe passato il negotio. In questo se gl'accosta

as years were added to years so observation could be added to observation.<sup>53</sup> For the same reason, Hipparchus could not help knowing more than Callippus, for he could observe the mutations which had taken place up to 196 years after the death of Alexander.<sup>54</sup> Because the Roman geometer Menelaus could observe the differences in position 462 years after the death of Alexander, it is obvious that he knew more than Hipparchus.<sup>55</sup> Mahomet Haracensis necessarily had even more data at his disposal, for he lived 1202 years after Alexander's death.<sup>56</sup> Copernicus could use many more observations for the simple reason that he lived 1849 years after Alexander, almost in our own times.<sup>57</sup> However, it is also true that some of those who came afterwards have not shown a keener intelligence<sup>58</sup> than their predecessors, and that most of our contemporaries have been unable to improve on them; for the former failed, and the latter still fail, to take advantage of the experience of the past, while (what is worse) both the former and the latter have lived as dead in their own times.<sup>59</sup>

PRUDENTIUS. Say what you please, and distort matters to suit your own argument as you will: I remain on the side of the ancients. As for your opinions and your paradoxes, I cannot believe that so many, and such wise men were all ignorant fools as you and other friends of the moderns seem to believe.

THEOPHILUS. Let me remind you, Master Prudentius, that if an opinion which has become a commonplace, such as yours, is true because it is old, then it must have been false when it was new. For before the philosophy which suits your mentality, we find that of the Chaldeans, of the Egyptians, the Magi, the Orphics, the Pythagoreans, and others of most ancient times, which is more to our liking;<sup>60</sup> and the first to rebel against it were the ignorant logicians and mathematicians who were not so much enemies of antiquity as strangers to the truth. So let us put aside the question of the old and the new, bearing in mind that there is nothing new which may not yet be old, and nothing old which has not once been new, as your Aristotle himself pointed out.<sup>61</sup>

FRULLA. If I don't speak now, I'll burst. I really will! Speaking to master Prudentius, you used the phrase *your Aristotle*. Do you know in what way I think Aristotle is his, *idest*, he is a Peripatetic? (For goodness' sake, let us have a little digression by way of parenthesis.) There were two blind men begging at the gate of the Archbishop's palace in Naples, and one of them said he was a Guelph and the other that he was a Ghibelline.<sup>62</sup> Then they started hitting each other with their sticks so violently that, if they had not been separated, I really don't know what



un huom da bene, et li disse. Venite qu  tu, et tu orbo mascalzone; che cosa   Guelfo? che cosa   Ghibellino? che vuol dir esser Guelfo, et esser Ghibellino? In verit  l'uno non seppe punto che rispondere, ne che dire. L'altro si risolse dicendo, il Sgnor Pietro Costanzo che   mio padrone, et al quale io voglo molto bene,   un gibellino. Cossi   punto molti sono Peripatetici che si adirano, se scaldano et s'imbraggiano per Aristotele, vogl  defendere la dottrina d'Aristotele, son inimici de qu  che non sono amici d'Aristotele, voglon vivere et morire per Aristotele: i quali non intendono ne anche quel che significano i titoli de libri d'Aristotele. Se volete ch'io ve ne dimostri uno; ecco costui al quale havete detto, il vostro Aristotele, et che a' volte a' volte ti sfodra un'Aristoteles noster Peripateticor  princeps, un Plato noster, et ultra.

PRUDENTIO. Io f  poco conto del vostro conto, niente istimo la vostra stima.

THEOPHILO. Di gratia non interrompete pi  il nostro discorso.

SMITHO. Seguite sig. Theophilo.

THEOPHILO. Not  dico il vostro Aristotele che come   la vicissitudine de l'altre cose, cossi non meno de l  opinioni et effetti diversi: per  tanto   haver riguardo alle philosophie per le loro antiquit , quanto voler decidere se f  prima il giorno   la notte. Quello d que al che doviamo fissar l'occhio de la consideratione,   si noi siamo nel giorno, et la luce della verit    sopra il nostro orizzonte: ovvero in quello de gl'avversarii nostri antipodi? si siamo noi in tenebre, o' ver essi? et in conclusione si noi che damo principio a' rinovar l'antica philosophia, siamo ne la mattina per dar fine a' la notte: o' pur ne la sera per donar fine al giorno? et questo certamente non   difficile a' determinarsi, ancho giudicando a' la grossa da frutti de l'una et l'altra specie di contemplatione.

Hor veggiamo la differenza tr  quelli et questi. Quelli nel viver temperati; ne la medicina, esperti; ne la contemplatione, giuditiosi; ne la divinatione, singolari; ne la magia, miracolosi; ne le superstitioni, providi; ne le leggi, osservanti, ne la moralit , irreprensibili; ne la theologia, divini; in tutti effetti, heroici, come ne mostrano lor prolungate vite, i' meno infermi corpi, l'inventioni altissime, le adempite prognosticationi, le sustanze per lor opra trasformate, il convitto pacifico de qu  popoli, gli lor sacramenti inviolabili, l'essecutioni giustissime, la familiarit  de buone, et protettrici intelligenze, et i' vestigii (ch'anchora durano) de lor maraviglose prodezze. Questi altri c trarij lascio essaminargli al giuditio de chi n'ha.

would have happened. At that point a well-meaning gentleman went over to them and said: "Come here, you pair of blind rascals, and tell me: What is a Guelph? And what is a Ghibelline?" As a matter of fact, one of them didn't know how to reply at all. The other got out of it by saying: – "Signor Pietro Costanzo, my employer, and a very good one too, is a Ghibelline."<sup>63</sup> – In much the same way there are many Peripatetics who get all excited and worked up about Aristotle, who want to defend Aristotle's doctrines, who are the bitter enemies of those who are not Aristotle's friends, who want to live and die for Aristotle, but who do not know as much as the meaning of the titles of Aristotle's books. And if you want me to show you one of these, there's your man, to whom you have just said *your Aristotle*, and who every now and then comes out with an *Aristoteles noster*, *Peripateticorum princeps*, or a *Plato noster, et ultra*.<sup>64</sup>

PRUDENTIUS. I have little consideration for your consideration, and no esteem for your estimation.

THEOPHILUS. Well then, do not interrupt us any more.

SMITHUS. Please continue, Signor Theophilus.

THEOPHILUS. Your Aristotle himself, as I was saying, observed that opinions in their various forms have their vicissitudes just like other things; so that to judge philosophies by their antiquity is like trying to decide which comes first, day or night. The question we should really be asking ourselves is whether it is daytime with us, and if the light of truth is above our horizon or that of the adversaries at our antipodes. Are we in the dark, or are they? And finally are we, who are beginning to revive the ancient philosophy, in the dawn or in the dusk of a closing day? And this is really not a difficult question to answer, even if we judge only approximately the fruits of one and the other schools of thought. – Supposing we consider the differences between them. One the one hand we have men who live a temperate life, expert in medicine, judicious in contemplation, remarkable in divination, miraculous in magic, wise in their practice of superstition, observant of the laws, irreproachable in their morality, godlike in their theology, and heroic in every way. This can be seen by the greater length of their lives, the greater strength of their bodies, the fertility of their imaginations, the accuracy of their prognostications, their transformations of substances, the peaceful relationships between their societies, the inviolability of their oaths, the justice of their acts, their familiarity with the best of guardian spirits, and the evidence, still apparent today, of their remarkable achievements. As to those others, their opponents, I leave them to the consideration of anyone with good sense.<sup>65</sup>

SMITHO. Hor che direte se la maggior parte di nostri tempi pensa tutto il contrario, et spetialmente quanto à la dottrina?

THEOPHILO. Non mi maraviglo, per che (come e' ordinario) quei che manco intendeno, credono saper piú: et quei che sono al tutto pazzi, pensano saper tutto.

SMITHO. Dimmi in che modo si potran corregger questi?

FRULLA. Con toglerli vià quel capo, et piantargline un'altro.

THEOPHILO. Con toglerli via in qualche modo d'argumentatione quella esistimation di sapere: et con argute persuasioni spoglarle quanto si può di quella stolta opinione, á fin che si rendano uditori: havendo prima avvertito quel che insegna, che siino ingegni capaci, et habili. Questi (secondo l'uso de la schuola Pythagorica et nostra) non voglio ch'habbino facultá di esercitar atti de interrogatore, ó disputante, prima ch'habbino udito tutto il corso de la philosophia, per che all'hora se la dottrina e' perfetta in se, et da quelli e' stata perfettamente intesa: purga tutti i dubbii, et togle via tutte le contradittioni. Oltre (s'avviene che ritrove un piú polito ingegno) all'hora quel potrà vedere, il tanto che vi si può aggiungere, toglere, correggere, et mutare. All'hora potrà conferire questi principii, et queste conclusioni, a quelli altri contrarii principii, et conclusioni; et cossí raggionevolmente consentire o' dissentire; interrogare, et rispondere: per che altrimente non e' possibile saper circa una arte o' scienza dubitar, et interrogar a' proposito, e cò gl'ordini che si convengono: se non há udito prima. Non potrà mai esser buono inquisitore, et giodice del caso; se prima non s'e' informato del negocio. Però dove la dottrina vá per i' suoi gradi, procedendo da posti et confirmati principii et fondamenti, a' l'edificio, et perfettione de cose che per quella si possono ritrovare; l'auditore deve essere taciturno, et prima d'haver tutto udito, et inteso; credere che con il progresso de la dottrina cessaranno tutte difficultadi. Altra consuetudine hanno gl'Ephettici, et Pyrrhoni, i' quali facendo professione che cosa alchuna non si possa sapere: sempre vanno dimandando, et cercando, per non ritrovar giamai. Non meno infelici ingegni son quei, che ancho di cose chiarissime voglono disputare, facendo la maggior perdita di tẽpo che imaginar si possa, et quei che per parer dotti, et per altre indegne occasioni, non voglono insegnare, ne imparare: ma solamente contendere, et oppugnar il vero.

SMITHUS. So what do you say to the fact that most people in our times think exactly the opposite, especially as far as philosophical doctrine is concerned?

THEOPHILUS. I am not surprised. Generally speaking, people who are ignorant think they know more than they do, and those who are completely mad think they know everything.

SMITHUS. Tell me, how can such people be corrected?

FRULLA. By cutting off their heads and planting new ones on their necks.

THEOPHILUS. By arguing with them in order to dissuade them of their estimation of their own knowledge, and by persuading them with subtle arguments to discard their foolish beliefs and listen to the opinions of others: which should only be done if the teacher has first satisfied himself that their intelligence is sufficiently able. In fact, following the customs of the Pythagorean school and our own, I do not want them to start asking questions and disputing before they have heard the whole course of philosophy.<sup>66</sup> Because then, if the doctrine is perfect in itself and has been perfectly understood, it dispels all doubts and resolves all contradictions. Besides, if somebody particularly intelligent is present, it is then that he will be able to add to it or to discard something, to correct or make some changes. Then will be the moment for comparing these principles and conclusions with those of the opposite school; for reasonably expressing agreement or dissent, and for asking and answering questions. Because in the arts and the sciences, it is impossible to raise doubts or queries in an orderly and relevant manner unless the arguments have first been given a hearing. Nobody will be able to inquire into, and judge competently, the merits of a case unless he knows in what it consists. So that if a doctrine is to be developed in the appropriate order, proceeding from accepted premises and foundations to the building up and perfecting of the deductions drawn from them, the student must listen in silence and try to understand, in the belief that as the argument progresses the difficulties will disappear. The Ephectics and the Pyrrhoneans use different procedures; for they profess the belief that it is impossible to know anything, and so they are always asking questions, and searching without ever finding.<sup>67</sup> Equally mistaken are those who are always wanting to dispute about what is already clearly established, wasting an unbelievable amount of time; or those who have no real intention of teaching or learning, but only of contradicting and denying the truth so that they will appear learned, or for some such trivial motive.

SMITHO. Mi occorre un scrupolo circa quel ch'havete detto: che essendo una innumerabil moltitudine di quei che presumeno di sapere, et se stimano degni d'essere costantemente uditi: come vedete che per tutto, le università et achademie so piene di questi Aristarchi, che non cederebbono un zero a' l'altitonante Giove, sotto i' quali quei che studiano non haranno al fine guadagnato altro, che esser promossi da non sapere (che e' una privatione de la verità) à pensarsi et credersi di sapere, che e' una pazzia, et habito di falsità. Vedi dunque che cosa han guadagnato questi uditori: tolti da la ignoranza di semplice negatione, son messi in quella di mala dispositione, come la dicono. Hora chi me farà sicuro, che facendo io tanto dispendio di tempo et di fatica, et d'occasione di meglor studi, et occupationi: non mi avvèga quel ch'á la massima parte suole accadere, che in luogo d'haver cōprata la dottrina, nō m'habbi infettata la mēte di pernitiöse pazzie? come io che nō so nulla potrò conoscere la differenza de dignità et indignità, de la povertà et ricchezza, di qué che si stimano, et son stimati savi? Vedo bene che tutti nascemo ignoranti, credemo facilmente d'essere ignoranti, crescemo, et siamo allevati co la disciplina et cōsuetudine di nostra casa, et nō meno noi udiamo biasimare le leggi, gli riti, le fede, et gli costumi de nostri adversarii, et alieni da noi: che quelli de noi, et di cose nostre. Non meno in noi si piantano per forza di certa naturale nutrizione le radici del zelo di cose nostre: che in quelli altri molti, et diversi de le sue. Quindi facilmente hà possuto porsi in consuetudine, che i' nostri stimino far un sacrificio á gli dei, quando harranno oppressi, uccisi, debellati, et sassinati gli nemici de la fé nostra: non meno che quelli altri tutti quando harran fatto il simile à noi. Et non con minor fervore et persuasione di certezza quelli ringratiano Idio d'haver quel lume per il quale si prometteno eterna vita: che noi rendiamo gratie di non essere in quella cecità et tenebre ch'essi sono. A' queste persuasioni di religione, et fede: s'aggiongono le persuasioni de scienze. Io o' per eletitione di quei che me governaro padri, et pedagogi; o' per mio capriccio et phantasia, o' per fama d'un dottore: non men con satisfattione de l'animo mio mi stimarò haver guadagnato sotto l'arrogante, et fortunata ignoranza d'un cavallo: che qualsivoglia altro sotto un meno ignorante, o' pur dotto. Non sai quanta forza habbia la consuetudine di credere, et esser nodrito da fanciullezza in certe persuasioni, ad impedirne da l'intelligenza de cose manifestissime; non altrimenti ch'accader suole a' quei che sono avezzati a'

SMITHUS. What you have said troubles me: for given that innumerable multitudes presume to learning, and think they should be constantly listened to, we find that all the universities and academies are full of such Aristarchuses, who refuse to yield an inch to the thunders of Jove.<sup>68</sup> Under such teachers all the students gain is to pass from a state of ignorance, which means being deprived of the truth, to one of supposed learning, which is a foolish illusion. This is all that these listeners will have gained: having been uprooted from the simple negation of a state of ignorance, they finish up by wishful thinking, as the saying goes. So who will guarantee that if I dedicate to such teachers time and energy which might have been employed on different studies and activities, I shall not finish up in the same boat as so many others: having infected my mind with dangerous and foolish ideas without having acquired any sound doctrine? And how can I, who know nothing, distinguish between the excellence or mediocrity of those who are reputed by themselves and by others to be cultured? It is clear that we are all born ignorant and know ourselves to be so. Then we grow up, and are educated in the teaching and habits of our country of origin where we hear the laws, rites, faith, and customs of other and hostile civilizations severely condemned, as they blame ours. So it is natural that we find planted within us the roots of loyalty towards our own origins, just as others from a different background are loyal to theirs. And so, inevitably, it seems to us that we are doing a service to the gods when we attack, murder, oppress, and wreak havoc on the enemies of our faith, just as they think they are doing such a service when they do the same thing by us. They thank God for the light which they think will give them eternal life with no less fervour than we thank Him for leading us out of the blindness and darkness which is theirs. To these convictions about religion and faith should be added those belonging to the sphere of knowledge. Either through the choice of the parents or teachers who had charge of my education, or through my own whim or fancy, or perhaps influenced by a scholar's reputation, I may, to my complete satisfaction, be convinced that I learnt more from the arrogant and blissful ignorance of a pack-horse than someone else did from a less ignorant and perhaps more cultured master. You have no idea how deeply rooted are the habits of thought in which we are brought up from childhood: they can prevent us from understanding the most obvious truths. The same thing happens to people who

mangiar veleno, la compulsion de quali al fine non solamente non ne sente oltraggio, ma anchora se l'ha convertito in nutrimento naturale: di sorte che l'antidoto istesso gl'e' divenuto mortifero? Hor dimmi con quale arte ti conciliarai queste orecchie piú tosto tu ch'un altro: essendo che ne l'animo di quello e' forse meno inclinatione ad attendere le tue propositioni, che quelle di mill'altri diverse?

THEOPHILO. Questo é dono de gli dei, se ti guidano et dispensano la sorte da farte venir a' l'incontro un'huomo che non tanto habbia l'esistimation di vera guida, quanto in veritá sii tale, et illuminano l'interno tuo spirito al far elettione de quel ch'e' migliore.

SMITHO. Però comunemente si vá appresso al giuditio comone, á fin che se si fá errore, quello non sará senza gran favore, et compagna.

THEOPHILO. Pensiero indegnissimo d'un huomo, per questo gl'huomini savij, et divini son assai pochi: et la volontà di dei e' questa, atteso che non e' stimato, ne pretioso quel tanto ch'e' comone, et generale.

SMITHO. Credo bene che la veritá e' conosciuta da pochi, et le cose pregiate son possedute da pochissimi: ma mi confonde, che molte cose son poche, trá pochi, et forse appresso un solo, che non denno esser stimate, non vaglon nulla, et possono esser maggior pazzie et vitij.

THEOPHILO. Bene ma in fine e' piú sicuro cercar il vero, et conveniente fuor de la moltitudine: perche questa mai apportó cosa pretiosa et degna, et sempre trá pochi si trovorno le cose di perfettione et pregio; le quali se fusser sole ad esser rare et appresso rari: ogn'uno, ben che non le sapesse ritrovare, al meno le potrebbe conoscere: et cossi non sarebbono tanto pretiose per via di cognitione, ma di possessione solamente.

SMITHO. Lasciamo dunque questi discorsi, et stiamo un poco ad udire et osservare i' pensieri del Nolano. E' pure assai, che sin hora s'habbia conciliato tanta fede: ch'e' stimato degno d'essere udito.

THEOPHILO. A' lui basta ben questo. Hor attendete quanto la sua philosophia sii forte á conservarsi, defendersi, scuoprir la vanità, et far aperte le fallacie de sophisti, et cecitá del volgo, et volgar philosophia.

habitually eat poison; in the end they not only fail to suffer from it, but it even becomes their natural form of nourishment so that the antidote finishes by having mortal effects.<sup>69</sup> Now tell me, with what art will you charm these ears to attend to you rather than to another, given that the other may be less disposed to hear your arguments than those of a thousand others?

THEOPHILUS. It is a gift of the gods if they order your destiny by leading you to meet with a man who is not only considered a guide to truth, but is so indeed, and if they illumine your inner spirit by directing you to choose him as the best.<sup>70</sup>

SMITHUS. Even so, it is very common for people to follow the general opinion; so that if there is an error, they will find themselves in the company of many others.

THEOPHILUS. A thought most unworthy of a man! It is for this reason that there are so few wise and godlike men. Such is the will of the gods themselves; for whatever is ordinary and commonly met with is neither respected nor of worth.

SMITHUS. I am not against the truth being known only to a few, and the things of greatest worth being divided among even fewer. But it troubles me that many things possessed by the few, and sometimes by one man only, are of little real worth or value, and may even be the most appalling follies and vices.

THEOPHILUS. I agree. Nevertheless, it is safer to look for what is true and useful far from the common herd. For the multitude has never made a significant contribution to the search; and the things of greatest worth and perfection have always been found among the few. If such things alone were rare, and divided among the few, everybody, even if they were unable to discover them for themselves, could at least have knowledge of them. So it would only be the possession of them, and not the knowledge of them, which would be the privilege of the few.

SMITHUS. I think we should finish this discussion, and pause to listen to and ponder over the thoughts of the Nolan. It is remarkable enough that up to now there has been sufficient confidence in him for it to be considered worth giving him a hearing.

THEOPHILUS. That is all he asks for. Now you will see how well established his philosophy is, what strong defences it boasts of, and how apt it is to unveil the distortions and fallacies of the sophists, together with the errors of the common man and the commonly accepted philosophy.



SMITHO. A' questo fine (per esser hora notte) tornaremo domani quá a' l' hora medesima, et faremo consideratione sopra gli rancontri, et dottrina del Nolano.

PRUDENTIO. Sat prata biberunt: nam iam nox humida cælo præcipitat.

Fine del primo Dialogo.

SMITHUS. It is already night. Let us return here tomorrow, at the same time, to consider whom the Nolan found himself up against, and his philosophical doctrine.

PRUDENTIUS. *Sat prata biberunt; nam iam nox humida caelo praecipitat.*<sup>71</sup>

End of the First Dialogue.

## *Dialogo Secondo.*

### **Theophilo.**

All' hora gli disse il Sig. Folco Grivello. Di gratia S. Nolano, fatemi intendere le ragioni per le quali stimate la terra muoversi. A' cui rispose, che lui non gl'harebbe possuto donar raggione alchuna, non conoscendo la sua capacità & non sapendo come potesse da lui essere inteso, temerebbe far come quei che dicono le sue ragioni a' le statue, et andando á parlare có gli morti.

Per tanto gli piaccia prima farsi conoscere con proporre quelle ragioni, che gli persuadeno il contrario: per che secondo il lume, et forza de l'ingegno che lui dimostrará apportando quelle, gli potranno esser date resolutioni. Aggiunse á questo, che per desiderio che tiene di mostrar la imbecillità di contrari pareri per i' medesmi principii, có quali pensano esser confirmati; se gli farebbe non mediocre piacere di ritrovar persone, le quali fussero giudicate sufficiente a' questa impresa: et lui sarebbe sempre apparecchiato et pronto al rispondere. con questo modo si potesse veder la virtù de fondamenti di questa sua philosophia contra la volgare, tanto meglormente, quanto maggior occasione gli verrebbe presentata di rispondere, et dechiarare. Molto piacque al sig. Folco questa risposta. disse, voi mi fate gratissimo officio. accetto la vostra proposta, et voglio determinare un giorno, nel quale ve si opporranno persone, che forse non vi faran manchar materia di produr le vostre cose in campo. Mercoldi ad otto giorni che sará de le ceneri, sarete invitato con molti gentil' homini, et dotti personaggi, á fin che dopo mangiare si faccia discussione di belle, et varie cose. Vi prometto (disse il Nolano) ch'io non mancaró d'esser presente all' hora, et tutte volte che sí presenterá

## *Dialogue II*

### **Theophilus.**

Then Sir Fulke Greville said to him: – “Signor Nolano, please explain to me the reasons which lead you to think that the earth moves.”<sup>1</sup> The Nolan replied that he was unable to give any reasons since he had as yet no idea of Greville’s capacity for understanding him. Until he knew this, he ran the risk of appearing like those people who explain their reasons to statues, or try to speak with the dead.

So he preferred that Greville first explain what arguments had persuaded him of the contrary opinion, so that – according to the power and the strength of the reasons proposed by Greville – he could advance his own solutions to the problems raised. To this the Nolan added that it was his desire to demonstrate the stupidity of opinions contrary to his own by adopting the same principles as those which appeared to confirm them. Hence, if Greville would consent to finding persons whom he judged equal to such a task, he himself would always be ready and equipped to answer them. In this way, it would be possible to demonstrate the virtues of the foundations of his philosophy by opposing it to the prevailing idea, and to do it all the better in so far as he would have the possibility of replying and defending himself. Sir Fulke was delighted with this reply and said: “You ask me to do something which gives me the greatest pleasure. I accept your proposal and would like to arrange a day on which to invite opponents for you. They will not be lacking in subject matter that will allow you to put forward your own arguments. A week from Wednesday, which will be Ash Wednesday,<sup>2</sup> you will be invited together with many other gentlemen and scholars; and after we have eaten, there will be a discussion on various subjects of interest.” “I promise you,” said the Nolan, “that I will not fail to be

simile occasione: per che non e' gran cosa sotto la mia elettione, che mi ritarde dal studio di voler intendere, et sapere. Ma vi priego che non mi fate venir innanzi persone ignobili, mal create, et poco intendenti in simile speculationi (et certo hebbe raggione di dubitare per che molti dottori di questa patria có i' quali há ragionato di lettere, há trovato nel modo di procedere haver piú del bifolco, che d'altro che si potesse desiderare) Rispose il Sign. Folco, che non dubitasse, perche quelli che lui propone, son morigeratissimi, et dottissimi.

Cossí fú con chiuso. Hor essendo venuto il giorno determinato. Aggiuatemi Muse a' raccontare.

PRUDENTIO. Apostrophe, Pathos, invocatio poetarum more.

SMITHO. Ascoltate vi priego maestro prudentio.

PRUDENTIO. Lubentissime.

THEOPHILO. Il Nolano havêdo aspettato fin dopo pranso, et non havendo nuova alchuna: stimó quello gentil'huomo per altre occupationi haver posto in oblio, o' men possuto proveder al negocio. et sciolto da quel pensiero, andó a' rimenarsi, et visitar alchuni amici Italiani. et ritornando al tardi dopo il tramontar del sole.

PRUDENTIO. Già il rutilante Phebo havendo volto al nostro hemisphero il tergo, con il radiante capo ad illustrar gl'antipodi sen giva.

FRULLA. Di gratia magister raccontate voi, per che il vostro modo di recitare mi sodisfa mirabilmente.

PRUDENTIO. Oh s'io sapesse l'istoria.

FRULLA. Hor tacete dunque in nome del vostro diavolo.

THEOPHILO. La sera al tardi gionto á casa, ritrova avanti la porta Mess. Florio, et Maestro Guin, i' quali s'erano molto travagliati in cercarlo; et quando il veddero venire. O' di gratia (dissero) presto senza dimora andiamo che vi aspettano tanti cavallieri, gentil'homini, et dottori, et trá gl'altri ve n'e' un di quelli ch'hanno a' disputare, il quale e' di vostro cognome. Noi dunque (disse il Nolano) non ne potremo far male: sin' adesso una cosa m'e' venuta in fallo, ch'io sperava di far questo negocio a' lume di sole: et veggio che si disputará á lume di candela. Iscusó maestro Guin per alchuni cavallieri, che desideravano esser presenti, non han possuto essere al desinare, et son venuti a' la cena. Horsú (disse il Nolano) andiamo et preghiamo Dio che ne faccia accompagnare in questa sera oscura, a' si lungho camino, per sí poco sicure strade.

present then, and at all other times when a similar occasion presents itself. For nothing, if I can help it, prevents me from attempting to enlarge my knowledge and understanding. All I ask of you is that you do not produce opponents who are mediocre, bad mannered, and unprepared for similar disputes." He had good reason to doubt, because many of the doctors in this country with whom he discussed learned topics seemed to him to proceed more like uneducated rustics than anything else. Sir Fulke begged him not to worry on that account, as the people he had in mind were both courteous and learned. So it was arranged. And now the appointed day had arrived. Help me, Muses, to tell my story!

PRUDENTIUS. *Apostrophe, pathos, invocatio poetarum more.*<sup>3</sup>

SMITHUS. Please listen, Master Prudentius.

PRUDENTIUS. *Lubentissime.*<sup>4</sup>

THEOPHILUS. The Nolan, having waited for news until lunch was over, decided that the gentleman had forgotten the appointment due to other engagements. Considering himself free from his duties, he went for a walk and visited some Italian friends.<sup>5</sup> While coming back late, after sunset ...

PRUDENTIUS. Already had fiery Phoebus turned his back towards our hemisphere, and departed to illuminate the antipodes with his radiant countenance.

FRULLA. Please, Master, tell the story yourself; for I find your manner of narrating it wonderfully satisfying.

PRUDENTIUS. Oh, if only I knew the story!

FRULLA. Then be silent, in the name of your devil.

THEOPHILUS. ... arriving back late at night, he found Mr Florio and Master Gwinne in front of the door, exhausted by their search for him. When they saw him coming they said: "Oh, please hurry; for we must leave at once. Many knights, gentlemen, and doctors are waiting for you, and among the disputants is one who has the same surname as yourself." "Now, we must not fail in our undertaking," said the Nolan. "So far, the only thing I regret is that we shall not, as I had hoped, be deciding this question in the light of day; but rather disputing it by candlelight." Master Gwinne made apologies on behalf of some of the knights who wished to be present: "They were unable to make it for lunch, and had come to supper." "So, let us go," said the Nolan, "and pray God that he accompany us on this dark evening, during our long walk through such unsafe streets."

Hor benché fussemo ne la strada diritta, pensando di far meglio, per accortar il camino: divertimmo verso il fiume Tamesi per ritrovar un battello, che ne cōducesse, verso il palazzo. Giunsemo al pôte de palazzo del Milord Beuckhurst: et quindi cridando, et chiamando oares, idest gondolieri: passammo tanto tempo, quanto harrebe bastato a' bell'agio di condurne per terra al loco determinato, et havere spedito anchora qualche piccolo negotio. Risposero al fine da lungi dui barcaroli, et pian pianino, come venessero ad appiccarsi giunsero a' la riva: dove dopò molte interrogationi et risposte del d'onde, dove, et perche, et come, et quanto, approssimorno la proda a' l'ultimo scalino del pôte: et ecco di dui che v'erano, un che pareva il nocchier antico del tartareo regno, porse la mano al Nolano, et un altro che penso ch'era il figlo di quello, benché fusse huomo de sessantacinque anni in circa accolse noi altri appresso. et ecco che senza che qui fusse entrato un Hercole, un Enea, o' ver un Re di Sarza Rodomonte.

Gemuit sub pondere cimba

Sutilis, et multam accepit limosa paludem.

Udendo questa musica il Nolano: piaccia a Dio (disse) che questo non sii Caronte: credo che questa e' quella barca chiamata l'emula de la lux perpetua. questa puó sicuramente competere in antiqità co l'arca di Noe, et per mia fé, per certo par una de le reliquie del diluvio. Le parti di questa barca ti rispondevano ovomque la toccassi, et per ogni minimo moto risuonavano per tutto. Hor credo (disse il Nolano) non esser favola che le muragla (si ben mi ricordo di Thebe) erano vocali, et che talvolta cantavano a' raggion di musica: si nol credete; ascoltate gl'accenti di questa barca, che ne sembra tanti pifferi con qué fischi, che fanno udir le onde quando entrano per le sue fessure et rime d'ogni canto. Noi risemo, ma dio sá come. Annibal quand'a' l'imperio afflitto: veddè farsi fortuna si molesta, rise trà gente lacrimosa, et mesta.

PRUDENTIO. Risus sardonicus.

Now, although our way lay straight ahead, we thought we would do better, and shorten our journey, if we turned towards the River Thames and looked for a boat to conduct us towards the Palace.<sup>6</sup> We arrived at the landing-stage of Lord Buckhurst's mansion,<sup>7</sup> and called out "Oars!" that is, gondoliers. But we had to wait such a long time that we would easily have been able to reach our destination by road, and even have had time to do one or two other things besides. At last two boatmen answered our call. They were far away, and very slowly, as if on their way to be hanged, they arrived at the river bank. After much questioning as to where from, where to, why, how, and for how much, they drew their bows alongside the lowest step of the landing-stage. One of them, who seemed the ancient helmsman of the Tartarean realm,<sup>8</sup> stretched out his hand to the Nolan, and the other, who seemed to be his son (although he was a man of sixty-five or thereabouts), helped the rest of us in. So, although none of those embarked was a Hercules, an Aeneas, or a Rodomont, the King of Sarza,<sup>9</sup>

The ramshackle craft creaked under his weight  
And let in through its seams great swashes of muddy water.<sup>10</sup>

On hearing such music, the Nolan said: "Please God that this man be not Charon in person. I believe that this is the boat known as the rival of the *lux perpetua*.<sup>11</sup> Certainly it is at least as old as Noah's Ark: and I would not be surprised if it were one of the relics of the flood." Every part of the boat responded to your touch, and the slightest movement set it creaking throughout. "Now I believe," said the Nolan, "that it is no fable that the walls of Thebes (if I remember rightly) had voices, and that at times they sang melodiously. If you don't believe it, listen to the notes of this boat, which seem to be played by a pipe, with that whistling caused by the waves that enter everywhere through her cracks and seams." We laughed, but God knows how we managed to: And Hannibal, when he saw Fortune vex/His troubled realm so greatly, laughed among/His people, tearful and distraught...<sup>12</sup>

PRUDENTIUS. *Risus sardonicus*.<sup>13</sup>



THEOPHILO. Noi invitati sí da quella dolce armonia, come da amor, gli sdegni, i' tempi, et le stagioni, accompagnammo i' suoni con i' canti. Messer Florio (come ricordandosi de suoi amori) cantav. Il dove senza me dolce mia vita. Il Nolano ripigliava. Il saracin dolente, o' femenil ingegno, et vá discorrendo. Cossí a' poco a' poco, per quanto ne permettea la barca; che (benche da le tarle et il tempo fusse ridutta a' tale ch'harrebe possuto servir per subero) pareva col suo festina lente tutta di piombo, et le braccia di qué dua vecchi, rotte: i' quali benche col rimenar de la persona mostrassero la misura lungha: nulla dimeno cò i' remi faceano i' passi corti.

PRUDENTIO. Optime discriptum illud, festina, con il dorso frettoloso di marinaii, lente, col profitto de remi: qual mali operarii del dio de gl'orti.

THEOPHILO. A' questo modo avanzando molto di tempo, et poco di camino: non havendo già fatta la terza parte del viaggio, poco oltre il loco che si chiama il tempio: ecco ché i' nostri patrini in vece d'affrettarsi, accostano la proda verso il lido.

Dimanda il Nolano che voglon far costoro? voglon forse riprendere un pò di fiato? et gli venne interpretato che quei non erano per passar oltre: perche quivi era la lor stanza. Priega, et ripriega, ma tâto peggio. per che questa e' una specie de rustici, nel petto de quali spunta tutti i' sui strali il dio d'amor del popolo villano.

PRUDENTIO. Principio omni rusticorum generi, hoc est a' natura tributum, ut nihil virtutis amore faciant; et vix quicquam formidine pænæ.

FRULLA. E' un altro proverbio ancho in proposito di ciaschedun villano.

Rogatus tumet,  
Pulsatus rogat,  
Pugnis concisus adorat.

THEOPHILO. In conclusione, ne gittarono lá, et dopo pagategli, et resegli le gratie (per che in questo loco non si puó far altro, quando se riceve un torto da simil canaglia) ne mostrorno il diritto cammino per uscire a' la strada.

Hor quà te voglio dolce Maphelina, che sei la musa di Merlin cocaio. Questo era un cammino che cominciò da una buazza la quale ne per ordinario, ne per fortuna, havea divertiglio. Il Nolano il quale há studiato et hà praticato ne le schuole piú che noi, disse, mi par veder ù porco

THEOPHILUS. Yielding to the invitation of that sweet harmony, as love yields to disdain and the rhythm of the seasons, we accompanied those sounds with song. Mr Florio (as if in memory of his former loves) sang: "Where without me, sweet my life."<sup>14</sup> The Nolan answered him with: "The suffering Saracen, Oh female whim," and so on in the same vein.<sup>15</sup> Thus we proceeded little by little, as fast as the boat would allow. For, although time and woodworm had reduced it to such a state that it could have served as a cork, it seemed with its *festina lente*<sup>16</sup> as if it were made of lead. As for the arms of those two old men, they appeared to be broken; for even if they stretched their bodies out while rowing, they made only short strokes with their oars.

PRUDENTIUS. *Optime discriptum illud*<sup>17</sup> "*festina*," referring to the quick movements of the sailors' backs, and "*lente*" referring to the poor work with the oars. Like the poor workmen of the God of gardens.<sup>18</sup>

THEOPHILUS. In this way we advanced greatly in time but little in distance, and had not covered even a third of the journey – being but little beyond the place called the Temple<sup>19</sup> – when our skippers, instead of quickening their pace, pointed their bow towards the shore.

"What do these people want now?" asked the Nolan. "Do they perhaps need to rest a little?" But he was made to understand that they had no intention of proceeding any further, for they had reached their moorings. They were begged and begged again: but it was no use. For on the hearts of boors of this kind, the god of love of the vulgar herd blunts all his darts.

PRUDENTIUS. *Principio omni rusticorum generi, hoc est a natura tributum, ut nihil virtutis amore faciant; et vix quicquam formidine poenae.*<sup>20</sup>

FRULLA. And here's another proverb dealing with rustics of all kinds:

*Rogatus tumet,  
pulsatus rogat,  
pugnis concisus adorat.*<sup>21</sup>

THEOPHILUS. To conclude, they set us down there; and when we had paid and thanked them (because in this place, there is nothing else to be done when you receive an offence from such beasts), they showed us the way towards our road.

And now it is you I desire, sweet Maphelina, muse of Merlin Cocai.<sup>22</sup> – This road started off with a muddy pool which it was impossible to circumvent either in ordinary or in exceptional conditions. The Nolan, who had frequented and studied in the schools more than we, said: "I

passaggio, però seguitate à me. et ecco non havea finito quel dire, che vien piantato lui in quella fanga di sorte che non possea ritrarne fuora le gambe, et cossi aggiutando l'un l'altro, vi dammo per mezzo, sperando che questo purgatorio durasse poco: ma ecco che per sorte iniqua, et dura, lui et noi, noi et lui ne ritrovammo ingolfati dentro un limoso varco il qual come fusse l'orto de la gelosia, o' il giardin de le delitie, era terminato quinci et quindi da buone muraglia: et perche non era luce alchuna che ne guidasse, non sapeamo far differenza dal camino ch'haveam fatto, et quello che doveam fare, sperando ad ogni passo il fine: sempre spaccando il liquido limo, penetravamo fin alla misura delle ginocchia verso il profondo, et tenebroso averno. Quà l'uno non possea dar consiglio à l'altro, non sapevam che dire, ma con un muto silentio chi sibilava per rabbia, chi faceva un bisbiglio, chi sbruffava co le labbia, chi gittava un suspiro, et si fermava un poco, chi sotto lingua bestemiava, et per che gl'occhi non ne serveano; i' piedi faceano la scorta a' i piedi, un cieco era confuso in far piú guida a' l'altro. Tanto che

Qual'huom che giace et piange lungamente  
 Sul duro letto il pigro andar del'hore;  
 Hor pietre, hor carme, hor polve, et hor liquore  
 Spera ch'uccida il grave mal che sente:  
 Ma poi ch'a' lungo andar vede il dolente  
 Ch'ogni rimedio e' vinto dal dolore;  
 Desperando s'acqueta, et se ben more  
 Sdegnà ch'a' sua salute altro si tente.

Cossí noi dopo haver tentato et ritentato; et non vedendo rimedio al nostro male, desperati, senza piú studiar, et beccarsi il cervello in vano, risoluti ne andavamo a' guazzo a' guazzo per l'alto mar di quella liquida bua, che col suo lento flusso andava del profondo Tamesi à le sponde.

PRUDENTIO. O' bella clausula.

THEOPHILO. Tolta ciascun di noi la resolutione del tragico cieco d'Epicuro.

Dov' il fatal destin, mia guida cieco,  
 Lasciami andar et dove il pié mi porta  
 Ne per pietá di me venir piú meco.  
 Trovarò forse un fosso, un speco, un sasso  
 Piatoso a' trarmi fuor di tanta guerra,  
 Precipitando in loco cavo, et basso.

think I can see a swinish passage, so follow me." He had hardly finished saying this when he fell so deeply into the mud that he was unable to pull his legs out of it; and so, following each other, we all found ourselves in the middle of it, hoping that this purgatory would not last long.<sup>23</sup> But then a harsh and evil fate decreed that he and we, we and he, found ourselves blocked in a slimy passage which was bound on either side by solid walls, like the Orchard of Jealousy or the Garden of Delights. As there was no light to guide us, we were unable to see how far we had come or how far we had to go. At each step we hoped to reach the end, but always we went on, sinking knee-deep into the liquid mud until it seemed as if we had reached the depths of shadowy Avernus.<sup>24</sup> Here it was impossible for one of us to offer advice to another. We knew not what to say, but in a mute silence interrupted by angry hisses and whispers, some of us blowing through our lips, others heaving a sigh and pausing a moment, others again swearing under their breaths, we put one foot after the other; for eyes were of no use, and it was a case of the blind leading the blind. So much so that:

He who on a hard bed lies  
And mourns at length the passing of the hours,  
Hoping with stones, or charms, or liquid powers  
To dull the heavy pain which in him cries:  
But then is forced with time to recognize  
That every remedy attempted sours,  
Disdaining further aid, his lament lowers,  
Quietly despairing, even as he dies.<sup>25</sup>

In the same way, after having tried and tried again in despair, and no longer seeing an end to our troubles, we ceased to exercise our minds in vain and went on resolutely splashing through that sea of liquid mud which slowly crept from the depths of the Thames towards its shores ...

PRUDENTIUS. Oh, what a poetic ending!

THEOPHILUS. ... each one of us having made the resolution of the tragic blind man of Epicurus:

Led by fatal Fortune, blind of sight,  
Leave me to go as my feet desire;  
Do not stop me for pity of my plight.  
I may be saved from the din and strife,  
By a ditch, a pool, a pointed stone,  
Which make me fall, and take my life.<sup>26</sup>

Ma per la gratia de gli Dei (per che come dice Aristotele, non datur infinitum in actu) senza incorrer peggior male, ne ritrovammo al fine ad un pantano: il quale benche anchor lui fusse avaro d'un poco di margine per darne la strada: pure ne relevò cō trattarci piu cortesemente, non inceppando oltre i' nostri piedi: sin tanto che (montando noi piu alto per il sentiero) ne rese a' la cortesia d'una lava la quale da un canto lasciava un sì petroso spatio per porre i' piedi in secco: che passo passo ne fé cespitar come ubriachi, non senza pericolo di ròperne qualche testa, o' gamba.

PRUDENTIO. Conclusio, conclusio.

THEOPHILO. In conclusione, Tandem læta arva tenemus, ne parve essere a' i' campi Elysii, essendo arrivati a' la grande, et ordinaria strada. et quivi da la forma del sito considerando dove ne havesse condotti quel maladetto divertiglio: ecco che ne ritrovammo poco piu, o' meno di vintidui passi, discosti da onde eravamo partiti per ritrovar gli barcaroli, et vicino a' la stanza del Nolano. O' varie dialettiche, o' nodosi dubbii, o' importuni sophismi, o' cavillose captioni, o' scuri enigmi, o' intricati laberinti, o' indiavolate sphynge risolvetevi, o' fatevi risolvere. In questo bruto, in questo dubbio passo. Che debo far? che debbo dir, ahi lasso? Da quà ne richiamava il nostro alloggiamento: per che ne havea sì fattamente imbottati maestro Buazzo et maestro Pantano; che a' pena posseamo muovere le gābe. Oltre, la regola de la Odomantia et l'ordinario de gli augurii importunamēte ne consigliavano a' non seguitar quel viaggio. Li astri per essserno tutti ricoperti sotto l'oscuro, et tenebroso manto, et lasciandoci l'aria caliginoso; ne forzavano al ritorno: Il tempo ne dissuadeva l'andar sì lungi avante, et essortava a' tornar quel pochetto a' dietro. Il loco vicino applaudeva benignamente. L'occasione la quale con una mano ci havea risopinti fin quá, adesso con dui piu forti pulsi facea il maggior empito del mondo. La stanchezza al fine (non meno ch'una pietra dal intrinseco principio, et natura, e' mossa verso il centro) ne mostrava il medesimo camino, et ne fea inchinar verso la destra. Da l'altro canto ne chiamavano le tante fatiche, travagli, et disaggi i' quali sarrebono stati spesi in vano: ma il vermine de la coscienza diceva, se questo poco di camino n'ha costato tanto che non e' vinticinque passi; che sarà di tanta strada che ne resta? meior es perdere, che mas perdere. Da la' ne invitava il desio comone ch'havemo di non defraudar la espettatione di qué cavallieri et nobili personaggi: dall'altro canto rispondeva il crudo rimorso, che quelli non havendo havuto cura ne pensiero di mandar cavallo ô battello a' genti'huomini in questo tempo, hora, et occasione: non

But by the grace of the gods (for, as Aristotle claims, “the infinite cannot be an actual thing”),<sup>27</sup> without meeting any further obstacles, we finally reached a muddy path, which, although hardly affording any clear space on either side, nevertheless treated us more gently. We could proceed more easily, and as we climbed up the path it turned into a gutter which offered us a stony space on which to walk with dry feet. So we stumbled on like drunkards, in danger of breaking our heads or legs.

PRUDENTIUS. *Conclusio, conclusio!*<sup>28</sup>

THEOPHILUS. In conclusion, “at last we come to a happy field.”<sup>29</sup> It seemed as if we had arrived at the Elysian fields, for we finally reached the spacious main road. Looking round from where we were, and considering where that unfortunate detour had taken us, we realized that we were little more than twenty paces from where we had turned off to look for the boatmen, and right next to the Nolan’s lodgings. O multifarious dialectics, O knotty doubts, O importunate sophisms, O captious cavils, O dark enigmas, O intricate labyrinths, O diabolical sphinxes – reach a solution, or allow your problems to be solved:

At this crossroads, in this doubt,  
What must I do? Alas, what must I say?<sup>30</sup>

We would have gone home from there; for we were so covered by Master Mud and Master Sludge that we could hardly move our legs. Besides, the rules of odomancy<sup>31</sup> and of ordinary omens urged us strongly not to pursue that journey. The stars were completely covered by an obscure and shadowy mantle, giving rise to an impenetrable darkness which counselled us to turn back. The hour too dissuaded us from going on, exhorting us to cover the short distance home, which beckoned to us welcomingly. The luck which had led us back to this spot now weighed on us with redoubled force. Then there was the fatigue which (as a stone is directed towards the centre by an intrinsic principle of its nature) similarly suggested to us to press on and turn to the right.<sup>32</sup> On the other hand, there was the thought of the fatigue, the effort, and the discomforts which had already been faced in vain; although conscience whispered: If this short walk, of less than twenty-five paces, has been so exhausting, how about the long road ahead? “Better to lose something than to lose more.”<sup>33</sup> Then there was our common desire not to disappoint the expectations of those knights and nobles. By contrast, a cruel reproach answered that, for their part, in spite of the weather and the hour, they had not even bothered to send a horse or a boat to bring us to them, gentlemen as

farebbono anchora scrupolo del nostro non andare. Da lá eravam o accusati per poco cortesi al fine, o' per huomini che van troppo sul pôtiglo, che misurano le cose da i' meriti et uffici, et fan professione piú di ricever cortesia, che di farne. Et come villani, et ignobili, voler piu tosto esser vinti in quella, che vincere: da quá eravamo iscusati che dove e' forza, non e' ragione. Da lá ne attrahea il particular interesse del Nolano ch'havea promesso, et che gl'harrebbono possuto attaccar a dosso un non sò che. Oltre ch'há lui grà desio che se gl'offra occasione di veder costumi, conoscere gl'ingegni, accorgersi si sia possibile di qualche nova veritá, confirmar el buono habito de la cognitione, accorgersi di cosa che gli manca. Da quá eramo ritardati dal tedio comune, et da non sò che spirito che diceva certe ragioni piú vere, che degne á referire. A' chi tocca determinar questa contradittione? chi há da trionfar di questo libero arbitrio? a' chi consentisce la ragione? che há determinato il fato? Ecco questo fato, per mezzo de la ragione, aprendo la porta del'intelletto, si fá dentro, et comanda á l'elettione, che ispedisca il consentimento, di continuar il viaggio. O' passi graviora (ne vien detto) o' pusillanimità, o' leggieri, incostanti, et huomini di poco spirito.

PRUDENTIO. Exaggeratio concinna.

THEOPHILO. Non é, non é impossibile, benche sii difficile questa impresa; La difficultá e' quella ch'e' ordinata a' far star á dietro gli poltroni. Le cose ordinarie, & facili son per il volgo, et ordinaria gente. Gl'huomini rari, heroichi et divini: passano per questo camino de la difficultá, á fine che sii costretta la necessitá, à concedergli la palma de la immortalitá. Giungesi a' questo che quantumque non sia possibile arrivar al termine di guadagnar il palo: correte pure, et fate il vostro sforzo in una cosa de sí fatta importanza, et resistete fin a' l'ultimo spirito. Non sol chi vince vien lodato: ma ancho chi non muore da codardo, et poltrone: questo rigetta la colpa de la sua perdita, et morte in dosso de la sorte, et mostra al mondo che non per suo difetto, ma per torto di fortuna e' gionto a' termine tale. Non solo e' degno di honore quell'uno ch'há meritato il palio: ma anchor quello, et quell'altro, ch'há si ben corso, ch'e' giudicato ancho degno, et sufficiente del'haver meritato, ben che non l'abbia vinto. et son vituperosi quelli ch'al mezzo de la carriera desperati si fermano, et non vanno (anchor che ultimi) a' toccar il termine con quella lena, et vigor, che gl'e' possibile.

we were; and that they would not mind if we failed to appear. On the other hand, we might be accused of being rude, or too punctilious: people who measure everything according to status and position, and are more concerned to receive courtesy from others than to offer it – base people who would rather lose than win in such matters. On the other hand again, we had every excuse; for when one is forced to do something, it is better not to do it. But then again there was the attraction of the Nolan's particular interest in the matter, and his promise to attend, which could have exposed him to all sorts of criticisms and attacks. Besides, he liked to take advantage of every occasion to see these people's customs, become familiar with their wit, to glean, if possible, some new truth. And he liked to make a habit of learning, and becoming aware of what he lacked. Against this, we were all of us held back by our fatigue, and by some spirit or other which insinuated in us thoughts which, although perhaps true, do not deserve to be repeated. Whose task was it to choose the right solution?<sup>34</sup> Who was going to exercise their free will? Who was favoured by reason? What had fate determined? So, now here is fate, opening the door of intellect by means of the reason, and entering to command the choice, which falls, without delay, on the continuation of the journey: 'You who have faced trials worse than this,'<sup>35</sup> a voice said to us, 'O weak-minded, fragile, inconstant men, of little spirit ...'

PRUDENTIUS. *Exaggeratio concinna.*<sup>36</sup>

THEOPHILUS. ... although difficult, this undertaking is far from impossible: the difficulty is such that it will deter only the lazy. Things which are ordinary and easy are for base and vulgar men. Those who are rare to come by, who are heroic and divine, have to follow this path of difficulty, so that necessity is constrained to award them the palm of immortality. Furthermore, even when it is not possible to finish the race and win the prize, it should be run, nevertheless, and every effort should be made in an undertaking of such importance, as long as the spirit can resist. For not only the winner deserves praise, but also all those who do not die like lazy cowards. Such men tend to impute their loss and death to luck, and to cry to the world that evil fortune<sup>37</sup> and not their own fault has brought them to such an end. The prize deserves to be won not only by the winner, but also by those who have run so well that they may be considered worthy and deserving of praise, even if they have not won the race. And those who stop mid-way in despair should be ashamed for refusing to continue the race, even if they are the last; for they should reach the finishing line with as much energy and vigour as possible.<sup>38</sup>



Venca dunque la perseveranza; per che se la fatica e' tanta; il premio non sarà mediocre. Tutte cose pretiose son poste nel difficile: Stretta et spinosa e' la via de la beatitudine; Gran cosa forse ne promette il cielo.

Pater ipse colendi  
 Haud facilem esse viam voluit, primusq; per artē  
 Movit agros: curis acuens mortalia corda,  
 Nec torpore gravi passus sua regna veterno.

PRUDENTIO. Questo é un molto emphatico progresso, che converrebbe à una materia di piu grande importanza.

FRULLA. E' lecito, et e' in potestà di principi, de essaltar le cose basse: le quali se essi sarran tali, saran giudicate degne, et veramente saran degne, et in questo gl'atti loro son piu illustri et notabili, che si aggrandissero i' grandi; perche non e' cosa che non credeno meritar per la sua grandezza, ò vero che si mantenessero i' superiori ne la sua superiorità, perche diranno quello convenirgli non per gratia, cortesia, et magnanimità di principe: ma per giustizia et ragione: Cossi non essaltano per ordinario degni et virtuosi, perche gli pare che quelli non hanno occasione di rendergli tante gratie: quante un'aggrandito poltrone, et feccia di forfanti. Oltre hanno questa prudenza per far conoscere che la fortuna (alla cui cieca maestà son obligati molto) é superiore à la virtù: se tal volta esaltano un'huom da bene et honorato tra quelli; di rado li faran tener quel grado nel quale non se gli prepona un tale, che gli faccia conoscere quanto l'authorità vale sopra i' meriti: et che i' meriti non vaglono, se non quanto quella permette et dispensa. Hor vedete con qual similitudine potrete intendere per che Theophilo exaggere tanto questa materia: la qual quantumque rozza vi paia, é pur altra cosa che esaltar la Salza. l'Orticello. il Culice. la Mosca. la Noce, et cose simili con gl'antichi scrittori: et con qué di nostri tempi il Palo. la Stecca. il Ventaglo. la Radice. la Gniffeguerra. la Candela. il Scaldaletto. il Fico, la Quintana, il Circello, et altre cose che non solo son stimate ignobili; ma son ancho molte di quelle stomacose. Ma si tratta dell'andar á ritrovar trà gl'altri un par di suppositi: che portan seco tal significatione: che certo, gran cosa ne promette il cielo. Non sapete che quando il figlo di Cis chiamato Saul andava cercādo gl'asini, fú in punto d'esser stimato degno, et esser ordinato Re del popolo Israelita? Andate, andate á leggere il primo libro di

Let those win who persevere; for if they put in a lot of effort, their reward will not be small. All valuable things are difficult to obtain: the way towards beatitude is narrow and thorny. But the heavens seem to promise much:

For the Father of Agriculture  
Gave us a hard calling: he first decreed it an art  
To work the fields, sent worries to sharpen our mortal wits  
And would not allow his realm to grow listless from lethargy.<sup>39</sup>

PRUDENTIUS. I find this a very emphatic hyperbole. It would be more appropriate for a subject of greater importance.

FRULLA. Princes have the power to exalt base and menial things, which, even if they are base and menial, by being judged worthy of notice will become really worthy in the process. In this way the princes do things that are more illustrious and noteworthy than if they exalted those who are already great. For such people believe that they deserve praise for their greatness itself. They desire to preserve their superiority by insisting that they are forever superior. They will say that this is not due to the grace, courtesy, or magnanimity of their prince, but simply to reason and justice. That is why princes usually refrain from praising those who are already worthy and virtuous, knowing that from those they will receive little thanks. They will find far more gratitude in some idle fellow or unworthy rascal who gets promoted. In that way, the princes prudently make it known that fortune (to whose blindness they themselves owe so much) is often more important than virtue. If, on some occasions, they happen to promote someone who is really worthy and honourable, they hardly ever assign him a post for which someone else has been proposed. In that way, they make it clear to what extent their authority exceeds the reasons of merit. The message being that merit only counts in so far as the authority of the prince allows and permits. So you see, Theophilus did not exaggerate by using this similitude. It may seem an uncouth one to you, but it is always better than singing the praise of some sauce, or of a vegetable garden, a mosquito or a fly, a nut or some such thing. That is what the ancient writers did, and even today some sing the praises of a post, a stick, a fan, a root, a mercenary soldier, a candle, a bedwarmer, a fig, a quintan fever, a ring, and other things which are not only base but often also disgusting.<sup>40</sup> It is all a question of trying to find a subject or two among many others to illustrate your meaning: for it is certain that heaven does hold out many promises. Did you not know that when the son of Cis called Saul went looking for his asses, he was at that moment

Samuele; et vi vedrete che quel gentil personaggio tutta via fea piú conto di trovar gl'asini, che d'esser onto Re. Anzi par che non si cõtètava del regno, se non trovava gl'asini. Onde tutte volte che Samuele gli parlava di coronarlo; lui rispondeva. Et dove son gl'asini? gl'asini dove sono? mio padre m'há inviato à ritrovar gl'asini, et non volete voi ch'io ritrove gli miei asini? In conclusione non si quietó mai, sin tanto che non gli disse il profeta ch'gli asini eran trovati, volendo accennar forse ch'hæva quel regno, per cui possea contentarsi che valeva per gli suoi asini, et d'avantaggio anchora. Ecco dumq; come alle volte tal cosa si é andato cercâdo che quel cercare é stato presagio di regno. Gran cosa adunq; ne promette il cielo. Hor seguita Theophilo il tuo discorso. Narra i' successi di questo cercare che faceva il Nolano; fanne udire il restante de i' casi di questo viaggio.

PRUDENTIO. Benest, pro bene est, prosequere Theophile.

SMITHO. Ispedite presto perche s'accosta l'hora d'andar á cena: Dite brevemente quel che vi occorre dopo che vi risolveste di seguitar piu tosto il lungo et fastidioso camino, che ritornar á casa?

THEOPHILO. Alza i' vâni, Theophilo, et ponti in ordine, et sappi ch'al presente nõ s'offre occasione di apportar de le piu alte cose del mōdo. Nõ hai quâ materia di parlar di quel nume de la terra, di quella singolare, et rarissima Dama, che da questo freddo cielo, vicino a l'Artico parallelo, á tutto il terrestre globo rende si chiaro lume. Elizabetta dico, che per titolo, et dignitá Regia, non é inferiore á qualsivogla Re, che sii nel mōdo. Per il giodicio, saggezza, consiglio, et governo; non é facilmentē seconda ad altro che porti scettro in terra. Ne la cognitione de le arti, notitia de le scienze, intelligenza et pratica de tutte lingue, che da persone popolari, et dotte possono in Europa parlarsi: lascio al mondo tutto giudicare, qual grado lei tenga trá tutti gli'altri principi. Certo se l'imperio de la fortuna corrispōdesse, et fusse agguagliato á l'imperio del generosissimo spirito, et ingegno: bisognarebe che questo grande Amphitrite aprisse le sue fimbrie, et allargasse tanto la sua circonferenza: che si come gli cōprende una Britannia, et Hibernia; gli desse un'altro globo intiero, che venesse ad uguagliarsi á la mole universale: onde cō piu piena significatione la sua potente mano sustente il globo d'una generale et intiera monarchia.

Non hai materia di parlar di tanto maturo, discreto, et provido Consiglio, con il quale quell'animo heroico già vinticinque anni et piú, col cenno de gl'occhi suoi, nel centro delle borasche d'un mare

judged worthy of becoming the King of the people of Israel? Go, go and read the first book of Samuel, and you will see how that fine person was far more interested in finding his asses than in being anointed King. In fact, it seems that he had no intention of accepting the kingdom if he was unable to find his asses. So every time Samuel said he wanted to offer him the crown, Saul would reply: "And where have my asses gone? Where are they? My father asked me to find the asses, and you want me to ignore his request?" He refused to calm down, until the prophet assured him that the asses had been found, meaning perhaps that the kingdom was now his, and that he could be happy, for it was worth all his asses and more besides. This shows how sometimes one can search for something small, and the search can give rise to a kingdom.<sup>41</sup> So it is true that heaven holds out many promises. Continue with your story, Theophilus. Tell us about the success of this search carried out by the Nolan. Tell us about the remaining incidents of his journey.

PRUDENTIUS. ... *Benest, pro bene est, prosequere Theophile.*<sup>42</sup>

SMITHUS. Be quick about it, though, because supper time is near. Tell us briefly what happened to you after you decided to finish that long and difficult walk rather than turn back home.

THEOPHILUS. Unfurl your sails, Theophilus, and clear your decks. Bear in mind that there is no need at present to discuss the most important affairs of the world. Nor are you worthy to speak of that earthly spirit, that unique and rare Lady who, under this cold sky, close to the Arctic parallel, sheds her bright light over this terrestrial globe. Elizabeth, I mean, whose titles and dignity are not to be considered inferior to any King's in this world. For she is second to none for judgment, wisdom, and policy, with respect to all of those who wield a sceptre on this earth. I leave it to all of you to judge the place she holds among the other princes in knowledge of the arts, notions of the sciences, ability and practice in all those languages that simple and erudite people talk in Europe. It is certain that if the reign of fortune corresponded to, or was equal to, the reign of her generous spirit and intelligence, it would oblige that great Amphitrite to open her wings and enlarge her circumference to take in not only Britain and Scotland but the whole universal globe. For she is of a universal stature, and deserves to hold in her powerful hand the globe of a general and universal monarchy.<sup>43</sup>

It is not your part, Theophilus, to talk of the mature, discreet, and generous Council, together with which, for twenty-five years or more, that heroic spirit has looked with steady eyes over a storm-ridden sea of

d'adversitá; há fatto trionfar la pace, et la quiete; mantenutasi salda in tanto gagliardi flutti, et tumide onde di sí varie tempeste: con le quali à tutta possa gl'há fatto impeto quest'orgoglioso, et pazzo Oceano, che da tutti contorni la circonda. Quivi (bench'io come particolare non le conosca, ne habbia pensiero di conoscerli) odo tanto nominar gl'illustrissimi et eccellentissimi cavallieri, Un grã Thesorier del regno, et Roberto Dudleo Conte di Licestra, la generosissima humanità di quali é tanto conosciuta dal mondo, nominata insieme con la fama della Regina, et regno, tanto predicata ne le vicine provincie, come quella ch'accoglie con particolar favore ogni sorte di forastiero, che non si rende al tutto incapace di gratia et ossequio. Questi insieme co l'eccellentissimo Signor Francesco Walsingame, gran Secretario del Regio consiglio (come quelli che siedono vicini al sole del Regio splendore) con la luce de la lor gran civiltade, son sufficienti á spengere, et annular l'oscuritá: et cõ il caldo de l'amorevol cortesíá desrozzir et purgare qualsivogla rudezza, et rusticitá, che ritrovar si possa non solo trá Britanni: ma ancho trá Scythi, Arabi, Tartari, Canibali, et Antropophagi. Non ti viene á proposito di referire l'honestà conversatione, civiltá, et buona creanza di molti cavallieri, et molto nobili personaggi del regno, trá quali e' tanto cõosciuto, et á noi particolarissimamente, per fama prima, quando eravamo in Milano, et in Francia; et poi per esperienza, hor che siamo ne la sua patria, manifesto, il moltó illustre, et eccellente cavalliero, Sig. Phillippo Sidneo, di cui il tersissimo ingegno (oltre i' lodatissimi costumi) e' sí raro, et singolare: che difficilmente trá singolarissimi et rarissimi, tanto fuori quanto dentro Italia ne troverete un simile.

Ma á proposito importunissimamente ne si mette avanti gl'occhi una gran parte de la plebe: La quale é una sí fatta sentina; che se non fusse ben ben suppressa da gl'altri: mandarebbe tal puzza, et sí mal fumo: che verrebbe ad offuscar tanto il nome di tutta la plebe intiera: che potrebe vantarsi l'Inghilterra d'haver una plebe, la quale in essere irrispettevole, incivile, rozza, rustica, salvatica, et male allevata, non cede ad altra che pascere possa la terra nel suo seno. Hor messi da canto molti soggetti che sono in quella degni di qualsivogla honore, grado, et nobiltá: Eccovi proposta avanti gl'occhi un'altra parte, che quando vede un forastiero; Sembra (per Dio) tanti Lupi, tanti Orsi: che con suo torvo aspetto, gli fanno quel viso, che saprebbe far un porco ad un, che venesse á torgli il tinello d'avanti. Questa ignobilissima portione (per quanto appartiene al proposito) é divisa in due specie.

PRUDENTIO. Omnis divisio debet esse bimembris, vel reducibilis ad bimembrem.

adversity. She has guided the triumph of peace and quiet, has remained firm when progressing through many tempestuous waves driven by the madness of the Ocean all around her. In this place, I continually hear the names (although I do not know them personally, or expect to do so) of illustrious and excellent knights such as the Treasurer of the Kingdom, or Robert Dudley, Earl of Leicester, whose generous humanity is recognized throughout the world, together with the fame of the Queen and the whole kingdom.<sup>44</sup> For they are well known throughout the neighbouring provinces for the particular favour with which they receive all foreigners, or at least those who appear deserving of grace and respect. These knights, together with the excellent Sir Francis Walsingham, Secretary to the Royal Council (like those who sit near the sun of royal splendour), aided by the light of their civil virtues, have succeeded in dispersing the shadows of obscurity.<sup>45</sup> With the warmth of their amorous courtesy they have purged and civilized those uncouth and rustic defects which can be found not only here among the British, but also among the Scythians, the Arabs, the Tartars, Cannibals, and Anthropophagi. But it would be inappropriate here to refer to the honest conversation, the civility and the good manners of many of these knights, as well as many other noble persons in this kingdom. There is one person, however, who must be mentioned, already well known to me by reputation when I was in Milan and in France, and then by experience here in his own country, where I have seen him: that is, the very illustrious and excellent knight, Sir Philip Sidney, whose remarkable mind and much-praised manners are so unique and rare that they are difficult to equal in any company, however brilliant it may be. Nobody can be compared to him, either inside or outside of Italy itself.<sup>46</sup>

But while I am on this subject, suddenly, an objectionable presence rises up before my eyes: that is, a large part of the common people. These are of such a sort that (if they were not nearly obliterated by the others of a better kind) they would let off such stinking fumes that they would offend the name of the whole people. The English can hardly be proud if their common people are so irreverent, uncivil, uneducated, rustic, savage, and badly brought up that they can be compared with no other people on this earth. It is clear that many of them are not like that. Many of them are honourable, dignified, and noble; but there is another part of them that, when they see a foreigner, begins to resemble a pack of wolves, a cluster of bears. They begin to look like pigs whose swill is being taken away from them.<sup>47</sup> This less than noble part of the common people (given that we are dealing with the subject) is divided into two sorts.

THEOPHILO. De quali l'una e' de arteggiani, et botteggari, che conoscenti in qualche foggia forastiero: ti torceno il musso, ti ridono, ti ghignano, ti petteggiano co la bocca, ti chiamano in suo linguaggio cane, traditore, straniero, et questo appresso loro é un titolo inguiriosissimo, et che rende il supposito capace ad ricevere tutti i' torti del mondo, sia pur quantosivogla huomo giovane, ó vecchio, togato, ó armato, nobile, ó gentil'huomo. Hor quã se per mala sorte ti vien fatto, che prendi occasione di toccarne uno, ó porre mano á l'armi: ecco in un punto ti vedrai, quanto é lunga la strada, in mezzo d'uno esercito di coteconi i' quali piu di repente che (come fingono i' poeti) da denti del drago seminati per Iasone risorsero tanti huomini armati: par che sbuchino da la terra: ma certissimamente esceno da le botteghe: et facendo una honoratissima et gentilissima prospettiva de una selva de bastoni, pertiche lunghe, alebarde, partesane, et forche rugginenti; le quali (bêche ad ottimo uso gli siano state concesse dal prencipe) per questa et simile occasioni han sempre apparecchiate et pronte. Cossí con una rustica furia te le vedrai avventar sopra, senza guardare á chi, perche, dove, et come, senza ch'un se ne referisca á l'altro, ogn'uno sfogando quel sdegno naturale ch'há contra il forastiero ti verrà di sua propria mano (se non sarà impedito da la calca de gl'altri che poneno in effetto simil pensiero) et con la sua propria verga á prendere la misura del sayo, et se non sarai cauto á saldarti anchora il cappello in testa. Et se per caso vi fusse presente qualch'huomo da bene, ó gentil'huomo, al quale simil villania dispiaccia: quello (anchor che fusse il Conte ó il Duca) dubitando con suo danno senza tuo profitto d'esserti compagno (per che questi non hanno rispetto á persona, quando si veggono in questa foggia armati) sarà forzato á rodersi dentro, et aspettar, stando discosto, il fine. Hor al tãdem quando pensi che ti sii lecito d'andar á trovar il barbiere, et riposar il stanco, et mal trattato busto: ecco che trovarai quelli medesimi esser tanti birri et zaffi, i' quali se potran fengere che tu habbi tocco alchuno (potreste haver la schena et gambe quãtosivogla rotte) come havessi gli talari di Mercurio, ó fussi montato sopra il cavallo Pegaseo, o' premessi la schena al destrier di Perseo, ò calcassi l'ipogriffo d'Astolfo, ó ti menasse il dromedario de Madian, ò ti trottasse sotto una de le ciraffe de gli tre Magi: á forza di bussate ti faran correre, aggiutandoti ad andar avanti con qué fieri pugni: che meglo sarrebe per te fussero tanti calci di bue, d'asino, ó di mulo: non ti lasciaranno mai, sin tanto che non t'habbiano ficcato dentro una prigione, et quã me tibi comendo.

THEOPHILUS. One sort is made up of artisans and shopkeepers who, as soon as they realize that you are a foreigner, make faces at you, laugh and grin at you, make rude noises with their mouths, and in their language call you dog, traitor, foreigner, which in their jargon is a serious insult, and means that the subject concerned can be harmed in any way they think fit. It makes no difference if the person is a young man or old, wearing a gown or armed, a nobleman or a gentleman. If by some stroke of bad luck, you happen to touch one of them, or to place your hand on your weapon, you will suddenly become aware of how long the street is because it will be full of wild people who (as the poet sings) rise up from the ground like the dragons' teeth sown by Jason, all of them fully armed.<sup>49</sup> They rush out of the shops and create a veritable kind of wilderness made up of sticks, long poles, halberds, pikes, and rusted forks. Such things have been licensed by their rulers for other uses, but are kept by them for such purposes as these, always ready for use. So you will find yourself attacked by these furious rustics, who do not even ask themselves whom they are attacking, and why, where, or how. They seem to feel no need to concert their action, but attack you individually according to their different natures, venting their fury against the foreigner with their bare hands, sometimes getting mixed up with others who are attacking with the same intent. Each one will take the measure of your gown with their rods, and if you are not careful will snatch your hat from your head as well. And if it should happen that some well-intentioned gentleman were present, and not pleased by the scene played out before his eyes, even if he were a Lord or a Duke he would refrain from joining in on your side, for fear of harming himself without being of any help to you. For these people have no respect for anybody when they are armed and on the attack, with the effect that the gentleman will keep out of their way, even if he is angered by what is going on. And when it is all over, and at last you can go to the barber to rest your tired and aching body, you are likely to find there a group of policemen who will claim that it was you who touched someone. So, even if your back and legs are almost broken, you will end up by having to run away as if your heels were winged like those of Mercury, or as if you were mounted on the horse Pegasus, or riding on Perseus's stallion, or Astolfo's hippogriff, or were being led by Madian's dromedary, or were trotting under the giraffe of one of the Three Wise Men.<sup>50</sup> Beating you with their sticks, and pummelling you with their fists, they will force you to run and run, feeling as if you were being kicked by a cow, an ass, or a mule. They will never let you go until they have cast you into a prison, and here I commend myself to you.



PRUDENTIO. A fulgure et tempestate, ab ira, et indignatione, malitia, tentatione, et furia rusticorùm

FRULLA. Libera nos domine.

THEOPHILO. Oltre à questi s'aggiunge l'ordine di servitori: non parlo de quelli de la prima cotta, i' quali son gentil'huomini de baroni, et per ordinario non portano impresa ò marca, se non ó per troppo ambitione de gl'uni, ò per soverchia adulation de gl'altri, trá questi se ritrova civiltá.

PRUDENTIO. Omnis regula exceptionem patitur.

THEOPHILO. Ma (eccettuando però di tutte specie alchuni, che vi posson essere mē capaci di tal censura) parlo de le altre specie di servitori. de quali Altri sono de la secōda cotta: et questi tutti portano la marca affibbiata á dosso. Altri sono de la terza cotta, li padroni de quali non son tanto grandi, che li convēgna dar marca á servitori, ó pur essi son stimati indegni, et incapaci di portarla. Altri sono de la quarta cotta, et questi siegueno gli marcati, et non marcati; et son servi de servi.

PRUDENTIO. Servus servorum non est malus titulus usquequaque.

THEOPHILO. Quelli de la prima cotta son i' poveri et bisognosi gentil'huomini: li quali per disegno di robba, o' di favore, se riducono sotto l'ali di maggiori: et questi per il piu non son tolti da sua casa, et senza indignitá seguitano i' sui Milordi, son stimati et favriti da quelli. Quelli de la seconda cotta sono de mercantuzzi falliti, o' arteggiati, o' quelli che senza profitto hā studiato á leggere scrivere ó altra arte; et questi son tolti, ó fuggiti da qualche schuola, fundaco ó bottega. Quelli de la terza cotta son qué poltroni che per fuggir maggior fatica, han lasciato piú libero mestiero: et questi o' son poltroni acquatici, tolti da battelli: o' son poltroni terrestri, tolti da gl'aratri. Gl'ultimi de la quarta cotta sono una mescolta di desperati, di disgratiati da lor padroni, de fuor usciti da tempeste, de pelegriani, de disutili et inerti, di qué che non han piú comoditá di rubbare, di qué che frescamente son scampati di priggione, di quelli che han disegno d'ingannar qualchuno, che le viene a' torre da lá. Et questi son tolti da le colonne de la borsa, et da la porta di san Paolo. De simili se ne vuoi á Parigi, ne troverai quanti vi piace a la porta del palazzo. In Napoli à le grade di san Paolo, in Venetia, a' Rialto. In Roma al Campo di Flora.

PRUDENTIUS. *A fulgure et tempestate, ab ira, et indignatione, malitia, tentatione, et furia rusticorum ...*

FRULLA. ... *libera nos domine.*<sup>51</sup>

THEOPHILUS. Besides this sort of people, there are those that work as servants. I am not talking about those of the highest order, who are the servants of the nobility, and usually wear no badges or emblems, except when there is an excess of ambition on one side or an excess of adulation on the other. For such people have civil manners.

PRUDENTIUS. *Omnis regula exceptionem patitur.*<sup>52</sup>

THEOPHILUS. But, with the exception of those who for whatever reason are undeserving of censure, I am talking about the other kinds of servants, some of which are of the second order and wear a badge pinned on to them. Then there are others who are of the third order, and whose masters are not important enough to give them a badge to wear, or they themselves are not considered important enough to wear one. Then there are those of the fourth order, who come after those who wear a badge and those who do not, and these are the servants of servants.

PRUDENTIUS. *"Servus servorum" non est malus titulus usquequaque.*<sup>53</sup>

THEOPHILUS. The first of these sorts of servants are poor and needy gentlemen. Because they are in need of possessions as well as of favours, they are prepared to subordinate themselves to their masters. Most of these are not requested to leave their own homes, so that they can serve their masters without any loss of dignity, and they are respected and favoured by their lords. The second sort are mostly unsuccessful merchants, or artisans, or people who have studied law or learned to read and write, but had no success. Most of them have been taken away, or have run away, from some school, or foundry, or shop. Those of the third order are the lazy ones who, in order not to work too hard, have abandoned some freer profession. They might be idle seamen who have abandoned their ship, or idle farmers who have abandoned their plough. The last lot, or the fourth sort, are desperate people who have been cast off by their masters, people with a tempestuous past, or perhaps wanderers, useless people with no initiative, who no longer have any possessions left to be stolen from them. Some of them may have been recently released from prison, and perhaps have designs on the person who has had them released. They can be found under the arches of the Exchange, or at St Paul's gate. In Paris men of the same sort can be found at the Palace gate, in Naples at the steps of St Paul's, in Venice at the Rialto, in Rome at the Campo dei Fiori.<sup>54</sup>

De le tre ultime specie, sono quei che per mostrar quanto siino potenti in casa sua, et che sono persone di buon stomacho, son buoni soldati, et hãno á dispreggio il mondo tutto: ad uno che non fa mina di volergli dar la piazza largha: gli donaranno con la spalla, come con un sprone di galera una spinta, che lo faran voltar tutto ritondo, facendogli veder quanto siino forti robusti et possenti, et ad un bisogno buoni per rompere un'armata. Et se costui che se fará incontro, sará un forastiero: donigli pur quanto si voglia di piazza, che vuole per ognimodo che sappia, quanto fan far il Cæsare, l'Anniballe, l'Hettorre, et un bue che urta anchora. Non fanno solamente come l'asino il quale (massimamente quando e' carco) si contenta del suo diritto camino per il filo, d'onde se tu non ti muovi, non si moverá ancho lui, et converrà che o' tu a' esso, o' esso á te doni la scossa: ma fanno cossí questi che portan l'acqua; che se tu non stai in cervello, ti farran sentir la punta di quel naso di ferro che stá a la boccá de la giarra. Cossi fanno anchora color che portan birra et hala, i' quali: facendo il corso suo, se per tua inavertẽza te si avventaranno sopra, te faran sentir l'empito de la carca che portano; et che non solamente son possent á portar su le spalli; ma anchora á buttar una cosa innante, et tirar (se fusse un carro) anchora. Questi particolari per l'authoritá che tgnono in quel caso che portano la soma, son degni d'escusatione, per che hanno piu del cavallo, mulo, et asino, che de l'huomo: ma accuso tutti gl'altri li quali hanno un pochettino del rationale, et sono piu che gli predetti ad imagine et similitudine de l'huomo: et in luoco di donarte il buon giorno, ò buona sera (dopo haverti fatto un gratioso volto, come ti conoscessero et ti volessero salutare) ti verranno á donar una scossa bestiale. Accuso (dico) quell'altri i' quali tal volta fingendo di fuggire, ò voler perseguitare alchuno, ó correre á qualche negotio necessario: se spiccano da dentro una bottega, et con quella furia ti verranno da dietro ò da costa, á donar quella spinta che puó donar un toro quando e' stizzato, come (pochi mesi fa) accadde ad un povero M. ALESSANDRO CITOLINO al quale in cotal modo, cõ riso et piacer di tutta la piazza, fú rotto, et fracassato un braccio, al che volendo poi provvedere il magistrato: non trovò manco che tal cosa havesse possuto accadere in quella piazza. Si che quando ti piace uscir di casa: guarda prima di farlo senza urgente occasione, che non pensassi come di voler andar per la citta á spasso. Poi segnati col segno de la santa croce, armati di una corrazza di pazienza, che possa star á prova d'archibugio, et disponeti sempre á comportar il mãco male liberamente; se nõ vuoi comportar il peggio per forza. Ma di che devi lamentarti ahi lasso? Ti par ignobiltá l'essere un'animale urtativo? Nõ ti ricordi Nolano

These last three sorts feel the need to show how powerful they are in their master's home, how fearless they are, what good soldiers they are, and how much they despise the rest of the world. If you are not careful to give way to them in the street, they will butt you with their shoulders, like jailers poking at you with their spikes, or they will whirl you round to show you how strong and robust they are, and how they could fight an army if necessary. If the person who meets one of them coming towards him happens to be a foreigner, he should make ample way for him, for he will want to show how he is like Caesar, like Hannibal, like Hector, or like a fighting bull. They are not content to do as an ass does (particularly when it is loaded), that is to keep on in its way towards you without moving right or left, so that either you have to move out of its way, or it has to move out of yours, or otherwise there will be a clash. Rather, those who are carrying enormous jars of water will let you feel the jab of their metal spouts, unless you keep your wits about you. As for those who carry beer and hops, if you are not careful they will fall on top of you, letting you feel the full weight of their load. These people are not only strong enough to carry huge loads on their shoulders, but they also manage to throw them down in front of you, and sometimes to haul them along the ground as if they were carts. To tell the truth, these men should be excused for any inconvenience they cause, because they seem beasts of burden rather than men. The others, however, who have more rational tasks assigned to them, and seem to resemble men more than those do, sometimes will look at you smilingly as if they wanted to greet you, but will end up by pushing into you as if they were beasts. Then there are those I can only accuse, who seem to run away from you as if they were on some special errand, and then suddenly come rushing furiously out of a shop and run into you from behind or at your side as if they were angry bulls. That was what happened some months ago to Mr ALESSANDRO CITOLINI, who was treated in just such a way, to the vast amusement of the whole neighbourhood. His arm was broken and fractured, and he wanted to denounce the violence to the local magistrate, but the magistrate only told him that it was impossible that such a thing could have happened in such a place.<sup>55</sup> So I warn you, if you want to leave your lodging and go for a walk in the city, only do so if you have urgent business. And when you go out, make the sign of the cross, arm yourself with a good dose of patience, which even an arquebus would not serve to diminish, and be ready to face up to whatever your luck assigns to you, in order to avoid what could be worse. For goodness sake, why should you complain, after all? What's so undignified about being pushed around as if you were an animal? Do you, the Nolan, not remember what was

di quel che e' scritto nel tuo Libro, intitolato L'arca di Noe? Ivi mentre si dovean disporre questi animali per ordine, et doveasi terminar la lite nata per le precedenza: in quanto pericolo é stato l'Asino di perdere la preminenza che consisteva nel seder in poppa dell'archa; per essere un'animal piu tosto di calci, che di urti? Per quali animali si rapresenta la nobilitá del geno humano nell'horrido giorno, del giuditio, eccetto che per gl'agnelli, et gli capretti? Hor questi son qué virili, intrepidi, et animosi, de quali gl'uni da gl'altri non saran divisi come oves ab hædis; ma qual piu venerandi, feroci, et urtativi, saran distinti come gli padri de gl'agnelli, da padri di capretti. Di questi però i primi nella corte celestiale hanno quel favore che non hanno gl'secondi: et se non il credere, alzate un poco gl'occhi, et guardate chi e' stato posto per capo de la vanguardia di segni celesti? chi é quello che con la sua cornipotente scossa ne apre l'anno?

PRUDENTIO. Aries primo: post ipsú Taurus.

THEOPHILO. Appresso à questo gran capitano et primiero prencipe de le mandre: chi é stato degno d'essergli prossimo, et secondo, eccetto ch'il gran Duca de gl'armèti, á cui s'aggiogono, come per doi paggi, ó doi Gãimedi, qué bei gemegli garzoni? Considerate dunque quale et quanta sia cotal razza di persone che tengono il primato altrove, che dentro un'archa infracidita.

FRULLA. Certo non saprei trovar differenza alchuna trá costoro, et quel geno d'animali eccetto che quelli urtano di testa, et essi urtano di spalla anchora. Ma lasciate queste digressioni, et tornate al proposito di quel ch'avvenne in questo residuo del viaggio, in questa sera.

THEOPHILO. Hor dopo ch'il Nolano hebbe riscosse da vinti incirca di queste spuntonate: particolarmente alla piramide vicina al palazzo in mezzo di tre strade, ne si ferno incontro sei galant'huomini, de quali uno gli ne dié una si gentile, et gorda; che sola possea passar per diece; et gli ne fé donar un'altra al muro, che possea certo valer per altre diece. Il Nolano disse Tanchi maester. Credo che lo ringratiasse, per che li dié di spalla, et non di quella punta ch'é posta per centro del brocciero, ò per cimiero de la testa.

written in that book of yours entitled *Noah's Ark*.<sup>56</sup> For there, while the animals were being lined up in order, and the quarrels over precedence were being solved, was there not a risk of the ass losing its post of prominence — which consisted in sitting in the bows of the ark — because it is an animal that kicks rather than charges? What animals represent the nobility of the human race if not lambs and kids? So now, these people are those virile, intrepid, and lively animals, that will not be separated like the sheep from the goats, but because they are the most venerable, the most ferocious, and the most likely to charge you, they will be distinguished like the fathers of the lambs from the fathers of the kids.<sup>57</sup> In the celestial regions, however, the former are more favoured than the latter; and if you don't believe me, turn your eyes to heaven, and look up. Which of them has been chosen as the vanguard of the celestial signs? Which one is it that ushers in the year with its powerful horns?

PRUDENTIUS. *Aries primo; post ipsum, Taurus.*<sup>58</sup>

THEOPHILUS. And who has been considered to be worthy of second place to this great captain and prince of the fold? Unless it is the great duke of the herds, and added to it, as if they were two pages or two Ganymedes, those lovely twin boys? Consider then, what kind or number of persons come first outside the confines of a rotting ark.

FRULLA. It is true. I would not know how to discern any difference between such people and those kinds of animal, except to distinguish those who butt with their heads and those who do it with their shoulders. But let us bring these digressions to an end, and get back to discussing what happened in the last part of that journey, on the evening we are talking about.

THEOPHILUS. So, after the Nolan had received about twenty of such pushes, especially at the pyramid close to the building in the middle of a three-way junction, they were met by six gallants, one of whom barged into him so kindly and gently that it seemed like ten pushes, pressing him into the wall, where it felt like another ten again.<sup>59</sup> The Nolan said: "*Tanchi, maester.*" I believe he thanked him because that man had barged him with his shoulders, and not with that spout in the middle of his jug, or with its rim.

Questa fú l'ultima borascha, per che poco oltre per la gratia di san Fortúnio, dopo haver discorsi sí mal triti sentieri, passati sí dubbiosi divertigli, varcati sí rapidi fiumi, tralasciati sí arenosi lidi, superati sí limosi fanghi, spaccati sí turbidi pantani, vestigate sí pietrose lave, trascorse sí lubriche strade, intoppato in sí ruvidi sassi, urtato in sí perigliosi scogli: gionsemo per gratia del cielo vivi al porto, idest á la porta: la quale subito toccata ne fú apperta, entrāmo, trovammo à basso de molti et diversi personaggi diversi, et molti servitori; i' quali senza cessar, senza chinare la testa, et senza segno alchun di riverenza, mostrandone spreggiar co la sua gesta: ne ferno questo favore, de monstrarne la porta. andiamo dentro, montamo sú, trovamo che dopo haverci molto aspettato, disperatamente s'erano posti á tavola á sedere. Dopo fatti i' saluti, et i' resaluti.

PRUDENTIO. Vicissim.

THEOPHILO. Et alchuni altri piccoli ceremoni (tra quali vi fú questo da ridere, che ad un de nostri essendo presentato l'ultimo loco, et lui pēsa-  
ndo che là fusse il capo, per humilità voleva andar á seder dove sedeva il primo, et quā si fú un picciol pezzo di tempo in contrasto, trá quelli che per cortesia lo voleano far sedere ultimo, et colui che per humilità volea seder il primo) In conclusione. M. Florio sedde à viso à viso d'un cavalliero, che sedeva al capo de la tavola; il Sig. Folco, á destra de M. Florio: io et il Nolano à sinistra de M. Florio: Il dottor Torquato à sinistra del Nolano. Il dottor Nundinio á viso á viso del Nolano.

Quā per gratia di Dio non viddi il ceremonio di quell'urciuolo, ò becchieri, che suole passar per la tavola, á mano, á mano, da alto á basso, da sinistra, á destra, et altri lati, senza altro ordine che di conoscenza, et cortesia da montagne. Il quale dopo che quel che mena il ballo se l'há tolto di bocca, et lasciatovi quella impannatura di pinguedine che puó ben servir per colla: appresso beve questo, et vi lascia una mica di pane: beve quell'altro et v'affigge á l'orlo un frisetto di carne: beve costui, et vi scrolla un pelo de la barba: et cossi con bel disordine gustandosi da tutti la bevāda, nessuno é tanto mal creato, che nō vi lasse qualche cortesia de le reliquie che tiene circa il mustaccio. Hor se á qualchuno (ó per che non habbia stomacho, ò per che faccia del grande) non piacesse di bere: basta che solamēte se l'accoste tanto á la bocca, che v'imprima un poco di vestigio de le sue labbra anchora. Questo si fá á fine, che sicome tutti son convenuti á farsi un carnivoro lupo col mangiar d'un medesimo corpo d'agnello, di capretto, di montone, ò di un Grunnio Corocotta: cossi applicando tutti la bocca ad un medesimo bocale: venghino á farsi

That was the last tussle. For soon afterwards, thanks to San Fortunio, after having walked along such untended paths, passed over such uncertain crossroads, forged such rapid rivers, left behind us such sandy beaches, pushed our way through so much weedy slime, waded through such muddy puddles, climbed up so many stony ledges, walked along such dusty roads, fallen over such sharp stones, barged into so many dangerous rocks, by the grace of heaven we arrived at our destination, that is, at the door. As soon as we touched it, it opened. We entered, and downstairs we found many people of different kinds, mostly servants, who, without looking up from what they were doing, or bowing their heads or with any sign of respect, but rather with disparaging gestures, at least did us the favour of showing us the door. We entered and went upstairs, where we found that, after waiting for us at length, they had sat down to table in despair. After offering them our greetings, and then our greetings again ...

PRUDENTIUS. *Vicissim.*<sup>60</sup>

THEOPHILUS. ... and some other small ceremonies, there was something that made us laugh. This was when one of our party, being shown to the end of the table, and thinking that it was the head, out of politeness expressed a desire to sit at the head of the table. So there was a little fuss between those who really wanted him to sit at the far end, and him who wanted to sit at the head. In the end Mr Florio sat in front of a knight who was at the head of the table, while Mr Fulke sat to the right of Mr Florio. I myself and the Nolan were on Mr Florio's left, while Dr Torquato was on the Nolan's left. Dr Nundinio sat opposite the Nolan.

Thank God that here I did not see that ceremony of the goblet, or drinking cup, that is sometimes passed around the table from hand to hand, from the top to the bottom, from left to right, and from side to side, without more order or courtesy than one would find in mountaineers. So that after the person who has it in his hand has taken it from his mouth, leaving a nasty froth that serves as glue, another one drinks, leaving crumbs of bread, and then another who leaves bits of meat. As he drinks, he deposits a whisker from his beard, and in this disorderly way, everybody enjoys a drink without forgetting to leave some courtesy in memory of the relics he keeps inside his moustache. And if somebody, either because he has no stomach for it, or because he feels too grand, does not wish to drink in this way, all he has to do is to lift the cup up to his mouth and press his lips lightly against its rim. This is done to the end that all those who have come together to eat like wolves of the same lamb, the same kid or sheep, the same sucking pig, by applying



una sanguisuga medesima: in segno d'una urbanità, una fratellàza, un morbo, un cuore, un stomaco una gola, et una bocca, et ciò si pone in effetto cō certe gentilezze, et bagatelle: che é la piu bella cōedia del mondo á vederlo: et la piu cruda et fastidiosa tragedia á trovarvisi un galant'huomo in mezzo: quando stima esser ubligato á far come fan gl'altri, temendo esser tenuto incivile et discortese: per che quã consiste tutto il termine della civiltà et cortesia. Ma per che questa osservanza é rimasta nelle piu basse tavole et in queste altre nõ si trova oltre, se non con certa ragione piu veniale; per tanto senza guardare ad altro lasciamoli cenare, et domani parlaremo di quel ch'occorse dopo cena.

SMITHO. A'rivederci.

FRULLA. A' Dio.

PRUDENTIO. Valet.

Fine del Secondo Dialogo.

their mouths to the same goblet in this way, all become the same leech. This is a sign of their communal urbanity, their brotherly spirit, their disease, their common heart, stomach, throat, and mouth. And it is all done with so much courtesy and joking that it is the best comedy in the world to watch, and the most crude and irritating tragedy to find oneself involved in as a gentleman who feels obliged to do as the others do in order not to seem uncivil or impolite. For this is as far as civility or courtesy extends. However, this habit is common among the more lowly tables, while in ones like these it is no longer observed, or only in a more civilized way. So without looking at them any longer, let us leave them to their supper. Tomorrow we can talk about what happened after supper.

SMITHUS. Goodbye then.

FRULLA. Goodbye.

PRUDENTIUS. *Valete.*<sup>61</sup>

End of the Second Dialogue.

## *Dialogo Terzo*

### **Theophilo.**

Hor il dottor Nundinio dopo essersi posto in punto de la persona, rimẽato un poco la schena, poste le due mani su la tavola, riguardatosi un poco circũ circa, accomodatosi alquanto la lingua in bocca, rasserenati gl'occhi al cielo, spiccato da i' denti un delicato risetto, et sputato una volta; comincia in questo modo.

PRUDENTIO. In hæc verba, in hosce prorupit sensus.

### **Prima proposta di Nundinio.**

THEOPHILO. Intelligis domine que diximus? Et gli dimanda s'intendea la lingua Inglesa. Il Nolano rispose che non, et disse il vero.

FRULLA. Meglo per lui perche intẽderebbe piu cose dispiacevoli, et indegne: che contrarie á queste. Molto giova esser sordo per necessitá, dove la persona non sarebbe sordo per elettione. Ma facilmente mi persuaderei che lui la intenda; ma per non togliere tutte l'occasioni che se gli porgeno per la moltitudine de gli incivili rancontri, et per posser meglo philosophare circa i' costumi di quei, che gli se fanno innanzi; finga di non intendere.

PRUDENTIO. Surdorum, alii natura, alii physico accidente, alii rationali voluntate.

## *Dialogue III*

### **Theophilus.**

Then Dr Nundinius drew himself up to his full height, shrugged once or twice, placed his two hands on the table, took a brief look *circum circa*,<sup>1</sup> rolled his tongue around in his mouth, raised his eyes serenely up to heaven, gave a delicate little laugh, spat once, and began to speak thus: ...

PRUDENTIUS. *In haec verba, in hosce prorupit sensus.*<sup>2</sup>

### **Nundinius's First Proposition**<sup>3</sup>

THEOPHILUS. ...“*Intelligis domine quae diximus?*”<sup>4</sup> And he asked him if he understood English. The Nolan said no, which was the truth.

FRULLA. Better for him that he shouldn't; for he would hear unpleasant and silly things rather than the opposite. What a great advantage it is to be deaf by necessity, when you would not be so by choice. Still, I can easily believe that he does know English really. Yet he pretends not to in order to avoid unpleasant situations arising from a multitude of uncivil encounters, or to be able to philosophize more freely concerning the customs of the people he happens to meet.

PRUDENTIUS. *Surdorum, alii natura, alii physico accidente, alii rationali voluntate.*<sup>5</sup>

THEOPHILO. Questo non v'immaginate de lui, perche benche sii appresso un anno che há praticato in questo paese; non intende piu che due, ó tre ordinarissime paroli; le quali sá che sono salutationi, ma non gia particolarmente quel che voglan dire. Et di quelle se lui ne volesse proferire una; non potrebbe.

SMITHO. Che vol dire ch'há si poco pensiero d'intendere nostra lingua?

THEOPHILO. Non e' cosa che lo costringa, ò che l'inclini á questo. perche coloro che son honorati, et gentil'huomini co li quali lui suol conversare, tutti san parlare ó Latino, ó Francese, ó Spagnolo, ó Italiano: i' quali sapendo che la lingua Inglese non viene in uso se non dentro quest isola, se stimarebbono salvatici, nõ sapendo altra lingua che la propria naturale.

SMITHO. Questo é vero per tutto, ch'è cosa indegna non solo ad un ben nato Inglese, ma anchora di qualsivogl'altra generatione, non saper parlare piu che d'una lingua: pure in Inghilterra (come son certo che ancho in Italia et Francia) son molti gentil'homini di questa conditione, co i' quali, chi non há la lingua del paese, non può conversare, senza quella angoscia che sente un che si fà, et á cui é fatto interpretare.

THEOPHILO. E' vero che anchora son molti che non son gentil'homini d'altro che di razza, i' quali per piu loro, et nostro espediente, é bene, che non siano intesi, ne visti anchora.

### **De la seconda proposta di Nundinio.**

SMITHO. Che soggiunse il dott. Nundinio?

THEOPHILO. Io dunque (disse in latino) voglio interpretarvi quello che noi dicevamo, che é da credere il Copernico non esser stato d'opinione che la terra si movesse, per che questa é una cosa inconveniente et impossibile: ma che lui habbia attribuito il moto á quella piú tosto che al cielo ottavo, per la comoditá de le supputationi. Il Nolano disse che se Copernico per questa causa sola disse la terra muoversi, et non anchora per quell'altra: lui ne intese poco, et non assai. Ma é certo che il Copernico la intese come la disse, et con tutto suo sforzo la provò.

SMITHO. Che vuol dir che costoro sí vanamente buttorno quella sentenza sú l'opinione di Copernico: se nõ la possono raccogliere da qualche sua propositione?

THEOPHILUS. You shouldn't believe that of him; because although he has been nearly a year in this country, he is unable to understand more than two or three common words. He knows these are words of greeting, but is ignorant of their meaning; so that even if he should want to proffer one of them, he would be unable to do so.

SMITHUS. How are we to interpret his lack of interest in learning our language?

THEOPHILUS. Nothing obliges him to do so, or stimulates his desire in that direction. For the cultivated people and the gentlemen, such as he is used to talking to, all know how to speak Latin, French, Spanish, or Italian. They know that English is a language limited in its use to this island, and they would not be educated if they knew no other language than their own.<sup>6</sup>

SMITHUS. That is certainly true. Any well-born Englishman – as well as someone born anywhere else – can be considered educated only if he knows how to speak more than one language. In spite of this, there are many gentlemen in England (and, if I am not mistaken, in Italy and France as well) who are in precisely that condition. If someone does not know the language of their country, he is unable to converse with them without the frustration which arises when one's meaning has to be interpreted.<sup>7</sup>

THEOPHILUS. It is also true that many of them are gentlemen only by birth, and it is in both our interest and theirs that they should not be understood, or even encountered.

### Nundinius's Second Proposition

SMITHUS. What did Dr Nundinius say after that?

THEOPHILUS. "Well then," he said in Latin, "I will interpret what we were saying for you. We were saying that Copernicus should not be considered as having said that the earth moves; for that is neither proper nor possible. Rather, he attributed movement to it, instead of to the eighth sphere of the heavens, for greater convenience in calculation."<sup>8</sup> The Nolan said that if this was the only reason which made Copernicus claim that the earth moves, and no other, then he had clearly failed to understand him. But without any doubt, Copernicus meant what he said, and did all he could to prove it.

SMITHUS. How are we to interpret the fact that these people judged the opinion of Copernicus so mistakenly, instead of deducing it from propositions present in the text?

THEOPHILO. Sappi che questo dire nacque dal dottor Torquato, il quale di tutto il Copernico (benche posso credere che l'havesse tutto voltato) ne havea retenuto il nome de l'authore, del libro, del stampatore, del loco ove fu impresso, de l'anno, il numero de quinterni, et de le carte, et per non essere ignorante in gramatica, havea intesa certa Epistola superliminare attaccata non só da chi asino ignorante, et presuntuoso, il quale (come volesse iscusando favrir l'autore, o' pur a fine che ancho in questo libro gli altri asini trovando anchora le sue lattuche, et fruticelli: havessero occasione di non partirsene á fatto deggiuni) in questo modo le avvertisce avanti che cominciano ad leggere il libro, et considerar le sue sentenze.

Non dubito che alcuni eruditi (ben disse, alchuni, de quali lui puó esser uno) essendo già divulgata la fama de le nove suppositioni di questa opera, che vuole la terra esser mobile; et il sole starsi saldo, et fisso in mezzo del universo: non si sentano fortemente offesi; stimando che questo sia un principio per ponere in confusione l'arte liberali già tanto bene, et in tanto tempo poste in ordine. Ma se costoro voglono meglo considerar la cosa: trovaranno che questo authore non e' degno di riprensione, perche é proprio á gl'Astronomi raccorre diligente, et artificiosamente l'historià di moti celesti: non possendo poi per ragione alchune trovar le vere cause di quelli, gl'é lecito di fengersene, et formarsene à sua posta per principii di Geometria, mediàte i' quali tanto per il passato, quanto per avenire si possano calcolare onde non solamente non é necessario che le suppositioni siino vere, ma ne ancho verisimili. Tali denno esser stimate l'ypotesi di questo huomo, eccetto se fusse qualch'uno tanto ignorante del'Optica et Geometra, che creda che la distanza di quarãta gradi et piu, la quale acquista Venere discostandosi dal sole hor da l'una, hor da l'altra parte: sii caggionata dal movimento suo ne l'epiciclo, il che se fusse vero chi é sí cieco che non veda quel che ne seguirebbe contra ogni esperiẽza: che il diametro de la stella apparirebbe quattro volte, et il corpo de la stella piu di sedeci volte piu grande quando e' vicinissima nel opposto de l'auge: che quando e' lontanissima, dove se dice essere in auge. Vi sono anchora de altre suppositioni non meno inconvenienti che questa, quali non e' necessario riferire.

(Et conclude al fine)

THEOPHILUS. You should realize that this opinion originated with Dr Torquatus, who may have turned over all the pages of Copernicus, but who remembered only the name of the author, of the book itself, the printer, the town and year in which it was printed, and the number of pages it contained. Given that he was not ignorant of grammar, he had understood a certain preliminary letter attached to it by I know not what ignorant and presumptuous ass.<sup>9</sup> This person claims that he is doing a favour to the author (but perhaps his real concern is to supply lettuces and berries for other asses so that they should not go hungry) by issuing a warning to the readers before they start reading the book. He exhorts them to heed what he says.

“I have no doubt that some erudite persons” (and he did well to say “some,” for he is likely to be one of them himself) “who have heard of the fame acquired by this work, will be extremely offended by what it says. For it claims that the earth moves, and that the sun stays still and fixed in the centre of the universe. The liberal arts, which have long been ordered most satisfactorily, are thrown into confusion by such a principle. However, if these people consider the question with greater attention, they will realize that this author is not at fault; because it is the task of astronomers to narrate with diligence and expertise the history of the heavenly motions. Furthermore, it is by no means his intention to find the real causes of such motions. There is thus no reason why he should not imagine them according to the principles of geometry, using such principles – both with respect to the past and with respect to the future – as a means for calculation. Accordingly, it is not necessary to believe that such suppositions are true, or even apparently so. This is the correct way to judge the hypotheses of this man. Let us consider the case of someone so ignorant of optics and geometry as to believe that the distance of forty degrees or more acquired by Venus in her movement from one side to the other of the sun is caused by her own movement within her epicycle. If that were true, who could be so blind as not to realize what would happen, in contradiction to all experience: and that is, that the star’s diameter would appear four times larger, and the body of the star more than sixteen times larger, when it is nearest – in opposition to the apogee – than when it is furthest away, and said to be in the apogee? There are a number of other suppositions, no less unlikely than these, which it is not necessary to mention here.”<sup>10</sup>

(And he concludes at the end)



Lasciamoci dunque prendere il thesoro di queste suppositioni, solamente per la facilità mirabile et artificiosa del computo: per che se alcuno queste cose fente prenderà per vere; uscirà più stolto da questa disciplina, che non v'e' entrato.

Hor vedete che bel portinaio. considerate quanto bene v'apra la porta per farvi entrar dentro alla participation di quella honoratissima cognitione; senza la quale il saper computare et misurare et geometrare et prospettivare, non e' altro che un passatempo da pazzi ingenuosi. Considerate come fidelmente serve al padron di casa.

Al Copernico non hã bastato dire solamente che la terra si move; ma anchora protesta et cõferma quello, scrivendo al Papa, et dicendo, che le opinioni di philosophi son molto lõtane da quelle del volgo indegne d'essere seguitate, degnissime d'esser fugite, come contrarie al vero, et dirattura. et altri molti espressi inditii porge de la sua sentenza: non ostante ch'al fine par ch in certo modo vuole á comun giuditio tanto di quelli che intendeno questa philosophia, quanto de gl'altri che son puri mathematici, che se per gl'apparenti inconvenienti non piacesse tal suppositione: conviene ch'anco á lui sii concessa liberta d' ponere il moto de la terra per far dimostrazioni piu ferme di quelle ch'han fatte gl'antichi, i quali furno liberi nel fengere tante sorte et modelli di circoli, per dimostrar gli phenomeni de gl'astri. da le quale paroli non si puó raccorre che lui dubiti di quello che sí costantemente hã confessato, et provará nel primo libro sufficientemente rispondendo ad alchuni argomenti di quei che stimano il contrario: dove non solo fá ufficio di mathematico che suppone: ma ancho de physico che dimostra il moto de la terra.

Ma certamẽte al Nolano poco se aggiunge che il Copernico, Niceta Siracusano Pythagorico, Philolao, Heralide di Ponto, Echfanto Pythagorico, Platone nel Timeo (benche timida, et inconstantemente per che l'havea piu per fede che per scienza) et il divino Cusano nel secondo suo libro de la dotta ignoranza, et altri in ogni modo rari soggetti, l'habbino detto insegnato et cofirmato prima: perche lui lo tiene per altri proprii et piu s'aldi principii, per i' quali non per authoritate, ma per vivo senso et ragione, hã cossi certo questo, come ogn'altra cosa che possa haver per certa.

SMITHO. Questo e' bene; ma di gratia che argomento e' quello che apporta questo superliminario del Copernico: perche gli pare ch'habbia piu che qualche verisimilitudine (se pur nõ e' vero) che la stella di Venere debba haver tanta varietà di grandezza, quanta n'hà di distanza.

“Let us then take advantage of the treasure of these suppositions only in so far as they render the art of calculation marvellously easy. For if anyone takes such fictions for real, he will leave this discipline more ignorant than when he entered it.” See what a splendid door-keeper he is! See with what a flourish he opens the door for you, so you can enter and participate in that highly valued form of knowledge which teaches you how to calculate and make measurements, how to use the rules of geometry and perspective: a form of knowledge which is nothing more than a pastime for cunning madmen. Consider how faithfully he serves the owner of the house.

For Copernicus himself judges it insufficient simply to say that the earth moves. He goes on to protest and confirm the truth of such a statement by writing to the Pope. In this letter he claims that the opinions of philosophers are very far removed from those of the vulgar herd, which is unworthy of being followed and deserves to be disregarded because it is false and unreliable.<sup>11</sup> Furthermore, he produces evidence of many other kinds to support his thesis. It is true that in the end he seems to look for agreement both from those who believe in his philosophy and from those who are pure mathematicians. Ultimately, however, he claims that, even if his supposition should be found displeasing because of some apparent contradictions, he should nevertheless be free to assume the movement of the earth as a basis for more solid demonstrations than those put forward by the ancients. For they felt themselves free to invent all sorts and kinds of circles to explain the movements of the stars. From these words it is clear that he has no doubts of what he so consistently affirms, and which he proves well enough in the first book by replying to some objections by those who oppose him. At that point he not only acts as the mathematician who makes suppositions, but also as the physicist who demonstrates the movements of the earth.

In any case, it is of little consequence to the Nolan if Copernicus, Nicetus of Syracuse the Pythagorean, Philolaus, Heraclitus of Pontus, Ecphantus the Pythagorean, Plato in the *Timaeus* (although somewhat timidly and uncertainly, and more as a matter of faith than of science) as well as the divine Cusanus in the second book of his *De docta ignorantia* – and other extraordinary men – have already proposed and taught such a doctrine before him,<sup>12</sup> because he makes his proposals according to his own different and more reliable criteria, not basing himself on authority, but proceeding according to the testimony of sense and reason. On these bases, he is as certain of this thing as it is possible to be of anything.<sup>13</sup>

SMITHUS. So far so good. But what about this argument proposed by Copernicus’s torch-bearer? Because it does seem likely (and perhaps even true) that the size of the star Venus should vary in proportion to its distance.<sup>14</sup>

THEOPHILO. Questo pazzo il quale teme et ha' zelo che alchuni impazano con la dottrina del Copernico, non só se ad un bisogno havrebbe possuto portar piu inconvenienti di quello; che per haver apportato cò tanto sollènità stima sufficiente ad dimostrar che pensar quello síf cosa da un troppo ignorante d'Optica, et Geometria. Vorrei sapere de quale Optica et Geometria, intende questa bestia, che mostra pur troppo quanto sii ignorante de la vera Optica et Geometra lui et quelli da quali have imparato.

Vorrei sapere come da la grandezza de corpi luminosi, si può inferir la raggione de la propinquitá, et lontananza di quelli? et per il contrario; come da la distanza, et propinquitá di corpi simili, si può inferire qualche proportionale varietá di grandezza? Vorrei sapere con qual principio di prospettiva ó di optica, noi da ogni varietá di diametro possiamo definitamente conchiudere la giusta distanza, ò la maggior et minor differenza? Desiderarei intendere, si noi facciamo errore, che poniamo questa conclusione. Da l'apparenza de la quantità del corpo luminoso, non possiamo inferire la veritá de la sua grandezza, ne di sua distanza; per che sicome non é medesima raggione del corpo opaco, et corpo luminoso: cossi non e' medesima raggione d'un corpo men luminoso, et altro piu luminoso, et altro luminosissimo, accio possiamo giudicare la grandezza o' ver la distanza loro. La mole d'una testa d'huomo á due migla non si vede, quella molto piu piccola de una lucerna, ó altra cosa simile di fiamma, si vedrà senza molta differenza (se pur con differenza) discosta sessanta migla: come da Otranto di Pugla si veggono al spesso le candele d'Avellona, trà quai paesi tramezza gran tratto del mare Ionio. Ogn'uno che há senso, et raggione, sa che se le lucerne fussero di lume piu perspicuo á doppia proportion: come hora son viste ne la distanza di settanta migla, senza variar grandezza; si vedrebbero ne la distanza di cento quaranta migla, ad tripla; di ducento et diece. ad quatrupla; di ducento ottanta. medesimamente sempre giudicando ne l'altre additioni di proportioni, et gradi. perche piu presto da la qualità et intensa virtù de la luce che da la quãtitá del corpo acceso, suole mantenersi la raggione del medesimo diametro, et mole di corpo. Volete dunque o' saggi optici, et accorti prospettivi; che se io veggo un lume distante cento stadii haver quattro dita di diametro: sará raggione che distante cinquanta stadii debbia haverne otto: á la distanza di vinticinque, sedici: di dodici et mezzo, trenta due, et cossí va discorrendo, sin tanto che vicinissimo venghi ad essere di quella grandezza che pensate?

THEOPHILUS. This madman, who fears that readers will go mad when they learn about the doctrine of Copernicus, could hardly have proposed a more unfortunate objection than that one. He thinks it is enough to express himself with much solemnity in order to prove that the people who hold that idea are fools, with no idea of optics or geometry. I would like to know where he got his crass ideas of optics and geometry from: for he is clearly completely ignorant of a true optics or a true geometry.

I would like to know how he thinks that from the size of luminous bodies it is possible to calculate their proximity or distance. Or, on the other hand, how he thinks that from the proximity or distance of such bodies, it is possible to calculate a proportional change in their size. I would like to know by what principle of perspective or optics we may infer the true distance, or its greater or lesser variation, from the variations in diameter. It would be interesting to know if we are mistaken in reaching the following conclusion – from the apparent mass of a luminous body, we are unable to infer its true size, or its distance.<sup>15</sup> For opaque bodies and luminous bodies cannot be reasoned about in the same way when we try to calculate their true distance from us, or their size – any more than fairly luminous ones can, or extremely luminous ones. The size of a man's head cannot be seen from two miles away; but the size of a lantern, or some such illuminated object, can be seen with very little difference (although with some difference) from a distance of sixty miles. For example, the candles of Valona can often be seen from Otranto in Puglia, although there is a large expanse of the Ionian sea between them.<sup>16</sup> Everyone with a little common sense knows that if the light in a lantern were double as strong as another one, it would appear to be the same size 140 miles away as the other one at 70 miles. If it were treble as strong, it would appear the same at 210 miles. If it were four times as strong, at 280 miles. And so on, for increasing proportions and strengths. For it is the quality and intensity of the light rather than the quantity of illuminated body which determines the apparent diameter and size.<sup>17</sup> And so – oh, wise opticians and qualified geometricians – why not reckon that if I see a light at a distance of 100 yards which appears to have a diameter of 4 inches, at 50 yards it will seem to be 8 inches in diameter; at 25 yards, 16 inches; at 12 and a half, 32 inches; and so on until, at a very close distance, it will seem to be its proper size?

SMITHO. Tanto che secondo il vostro dire, benché sî falsa non però potrà essere improbata per le ragioni geometriche la opinione di Heraclito Ephesio che disse il sole essere di quella grandezza, che s'offre a' gl'occhi: al quale sottoscrisse Epicuro come appare ne la sua epistola á Sophocle, et ne l'undecimo libro de natura (come riferisce Diogene Laertio, dice che (per quanto lui può giudicare) la grandezza del sole, de la luna, et d'altre stelle, e' tanta, quanta á nostri sensi appare: perché (dice) se per la distanza perdessero lá grandezza, ad piu ragione perderebbono il colore: et certo (dice) non altrimenti doviamo giudicar di qué lumi, che di questi che sono appresso noi.

PRUDENTIO. Illud quoque Epicureus Lucretius testatur quinto de natura libro.

Nec nimio solis maior rota, nec minor ardor  
 Esse potest, nostris quam sensibus esse videtur.  
 Nã quibus e' spaciis cūque ignes lumina possunt  
 Ad iicere, et calidum membris adflare vaporem.  
 Illa ipsa intervalla nihil de corpore limant  
 Flammarũ, nihilo ad speciẽ est cōtractor ignis.  
 Luna quoque sive Notho fertur, sive lumine lustrans,  
 Sive suam proprio iactat de corpore lucẽ.  
 Quicquid id est nihilo fertur maiore figura.  
 Postræmo quoscunque vides hinc ætheris ignes,  
 Dum tremor est clarus, dum cernitur ardor eorũ,  
 Scire licet perquam pauxillo posse minores  
 Esse, vel exigua maiores parte parte brevique,  
 Quãdo quidẽ quoscunq; in terris cernimus ignes  
 Per parvũ quiddam interdum mutare videntur,  
 Alterutram in partem filum, cum longius absint.

THEOPHILO. Certo voi dite bene, che con l'ordinarie et proprie ragioni in vano verranno i' prospettivi, et Geometri á disputar con Epicurei, non dico, gli pazzi quale e' questo liminare del libro di Copernico: ma di quelli piú saggi anchora: et veggiamo come potrà concludere che á tanta distanza quanta e' il diametro de l'epiciclo di Venere, si possa in ferir ragione di tanto diametro del corpo del pianeta, et altre cose simili.

Anzi voglo avertirvi d'un'altra cosa. Vedete quanto e' grande il corpo de la terra? sapete che di quello non possiamo veder se non quanto e' l'orizzonte artificiale?

SMITHUS. In that case, according to you, the opinion held by Heraclitus of Ephesus cannot be refuted by geometrical reasoning, even if his opinion is false: that is, that the sun is the same size as it appears to be to the sight.<sup>18</sup> Epicurus was of the same idea, and wrote to that effect in his *Letter to Sophocles* and, according to Diogenes Laertius, in the eleventh book of his *De natura*.<sup>19</sup> There he says that, as far as he is able to judge, “the size of the sun, of the moon and the other stars, is as it appears to our senses.” “Because,” he says, “if their size were to diminish with distance, then so would their colour.” “And it is certain,” he writes, “that we must make our judgments about those luminous bodies in the same terms as we judge such bodies down here.”

PRUDENTIUS. *Illud quoque epicureus Lucretius testatur quinto “De natura” libro:*<sup>20</sup>

Nor can the sun’s blazing wheel be much greater or less, than it is seen to be by our senses. For from whatsoever distances fires can throw us their light and breathe their warm heat upon our limbs, they lose nothing of the body of their flames because of the interspaces, their fire is no whit shrunken to the sight ... The moon, too, whether she illumines places with a borrowed light as she moves along, or throws out her own rays from her own body, however that may be, moves on with a shape no whit greater than seems that shape, [with which we perceive her with our own eyes.]... Lastly, all the fires of heaven that you see from earth; inasmuch as all fires that we see on earth, so long as their twinkling light is clear, so long as their blaze is perceived, are seen to change their size only in some very small degree from time to time to greater or less, the further they are away: so we may know that the heavenly fires can only be a very minute degree smaller or larger by a little tiny piece.<sup>21</sup>

THEOPHILUS. You are certainly right when you say that the experts in optics and geometry will attempt in vain to dispute with the Epicureans by using the kinds of arguments they usually use. I am not referring to such fools as the person who introduces Copernicus’s book, but rather to wiser minds. For we will see how they are able to draw the conclusion that the diameter of the body of the planet, and other similar questions, can be inferred from the length of the diameter of Venus’s epicycle.

In fact, I want to warn you of something else. Do you see how big the body of the earth is? And do you know that we can only see of it that part which makes up the artificial horizon?<sup>22</sup>

SMITHO. Cossi e'.

THEOPHILO. Hor credete voi che se vi fusse possibile di ritirarvi fuor de l'universo globo de la terra in qualche punto de l'etherea regione (sii dove si vuole) che mai averrebbe che la terra vi paia piu grande?

SMITHO. Penso di non, per che non e' raggione alchuna per la quale de la mia vista la linea visuale debba esser forte piu, et allungar il semidiametro suo, che misura il diametro de l'orizzonte.

THEOPHILO. Bene giudicate. Però e' da credere che discostandosi piu l'orizzonte sempre si diminuisca. Ma con questa diminutione de l'orizzonte notate che ne si viene ad aggiungere la confusa vista di quello che è oltre il già compreso orizzonte, come si può mostrare nella presente figura dove l'orizôte artificiale e' I i. al quale risponde l'arco del globo. A. A. L'orizzonte de la prima diminutione e' 2. 2. al quale risponde l'arco del globo B.B. l'orizzonte de la terza diminutione e' 3.3. al quale risponde l'arco C.C. l'orizôte de la quarta diminutione e' 4.4. al quale rispõde l'arco D.D. et cossi oltre attenuandosi l'orizôte, sempre crescerà la cõprehensione de l'arco insino alla linea emispherica, et oltre, alla quale distanza ò circa quale posti, vedremo la terra con quelli medesmi accidenti co i' quali veggiamo la luna haver le parti lucide, et oscure secõdo che la sua superficie e' aquea, et terrestre. [Figure 1]

Tanto che quanto piu se stringe l'angolo visuale, tanto la base maggiore si comprende de l'arco emispherico, et tanto anchora in minor quantità appare l'orizzonte, il qual voglamo che tutta via perseveri á chiamarsi orizzonte, benche seconda la cõsuetudine habbia una sola propria significatione. Allontanandoci dunque, cresce sempre la comprehensione del'hemisphero, et il lume, il quale quanto piu il diametro si diminuisce, tanto d'avantaggio si viene ad riunire: di sorte che se noi fussemo piu discosti da la luna; le sue macchie sarrebbono sempre minori, sin alla vista d'un corpo piccolo et lucido solamente.

SMITHO. Mi par haver intesa cosa non volgare, et non di poca importanza: Ma di gratia vengamo al proposito del'opinion di Heraclito, et Epicuro; la qual dite che può star costante contra le ragioni prospettive, per il difetto de principii già posti in questa scienza. Hor per scuoprir questi difetti, et veder qualche frutto de la vostra invention: vorrei intendere, la resolutione di quella raggione, co la quale molto dimostrativamente si prova, ch'sole, non solo é grande, ma ancho piu

SMITHUS. That's correct.

THEOPHILUS. Now, do you think that, if it were possible for you to distance yourselves from this universal globe of the earth and to occupy some point in the region of the ether (any point you wish), what would happen would be that you see the earth as greater in size?

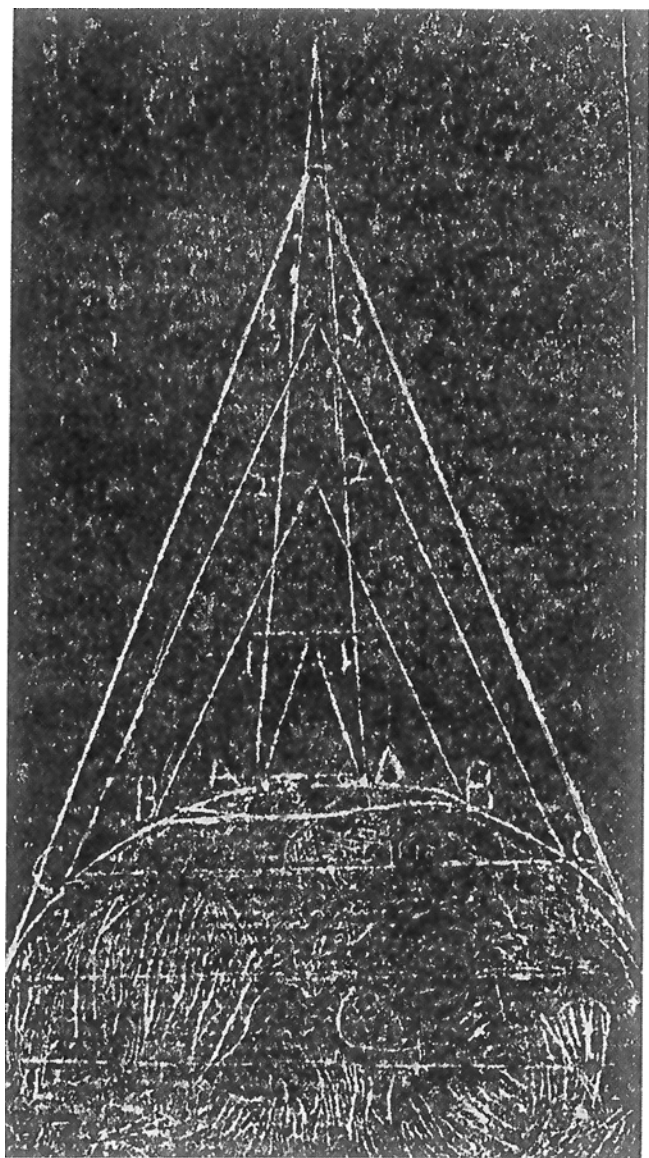
SMITHUS. I think not. Because there is no reason whatever why the line of vision from my eye should increase, and lengthen its radius, which gives the measure of the diameter of the horizon.

THEOPHILUS. A well-reasoned answer. However, it can be presumed that the horizon will diminish as it becomes more distant. You should note, though, that to this contraction of the horizon is added the confused view of what lies beyond the horizon itself, as the accompanying illustration demonstrates. In the figure, the artificial horizon is 1-1, which corresponds to the arc of the globe A-A; the horizon comprised by the first contraction is 2-2, which corresponds to the arc of the globe B-B; the horizon of the third contraction is 3-3, which corresponds to the arc C-C; the horizon of the fourth contraction is 4-4, which corresponds to the arc D-D.<sup>23</sup> In this way, as the horizon continues to diminish, the region subtended by the arc will increase until it expands into the hemispherical line and beyond. At which distance, or thereabouts, we would see the earth with those same characteristics as we see in the moon: its parts illuminated or dark according to whether its surface is composed of water or earth.<sup>24</sup> [Figure 1]

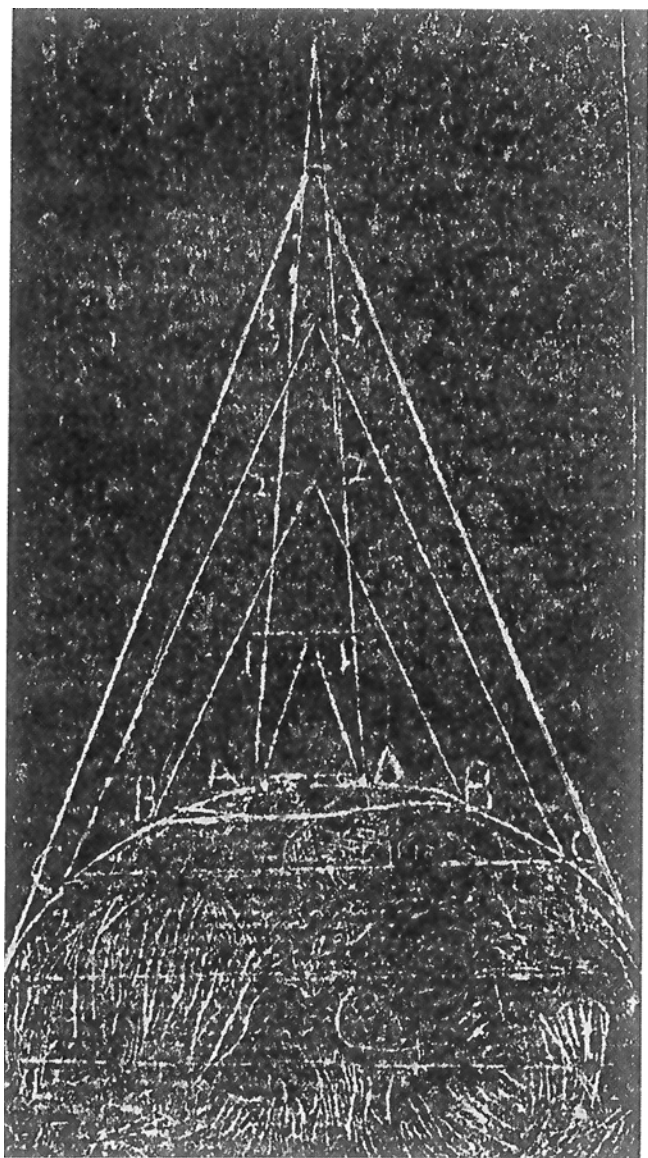
So much so that, the more the visual angle becomes acute, the more it comprises of the hemispherical arc of its base, while the horizon appears always to get smaller. Nevertheless, it is advisable to continue calling it a horizon, even if in ordinary usage the word has a single correctly defined meaning. So it is, then, that moving away from the earth, that part of the hemisphere comprised in our vision – as well as its illumination – increases, merging together sooner or later as the diameter diminishes. Similarly, if we were further away from the moon, its shadows would appear less clearly, until eventually it would be seen as nothing more than a small, luminous body.<sup>25</sup>

SMITHUS. What you have been saying seems to me unusual, and of considerable importance. But I would like to go back to the opinion of Heraclitus and Epicurus. You say they disagree with the arguments taken from perspective, given the faulty principles on which that science used to be founded.<sup>26</sup> Now, in order to discover what these defects were, and to enjoy some of the conclusions of your inventive reasoning, I would like to understand the meaning of that argument which proves





[Fig. 1 © The British Library Board, C.37.c.14.(2.) p. 56.]



[Fig. 1 Diagram representing the “eye” of an observer moving into space beyond the globe of the earth. As the angle of vision decreases, larger and larger portions of the earth’s horizon become visible.

grande che la terra. Il principio della qual raggione, é che il corpo luminoso maggiore spargendo il suo lume in un corpo opaco minore: de l'ombra conoidale produce la base in esso corpo opaco, et il cono oltre quello ne la parte opposita, come ne la seguente figura M. corpo lucido dalla base di C. la quale é terminatá per HI, manda il cono del'ombra ad N. punto. Il corpo luminoso minore havendo formato il cono nel corpo opaco maggiore; non conoscerà determinato loco, ove ragionevolmente possa designarsi la linea de la sua base, et par che vada à formar una conoidale infinita, come quella medesima figura A. corpo lucido dal cono del'ombra ch'e' in C. corpo opaco; manda quelle due linee. C.D. C.E. le quali sempre piu et piu dilatando la ombrosa conoidale: piu tosto correno in infinito, che possino trovar la base che le termini. [Figure 2]

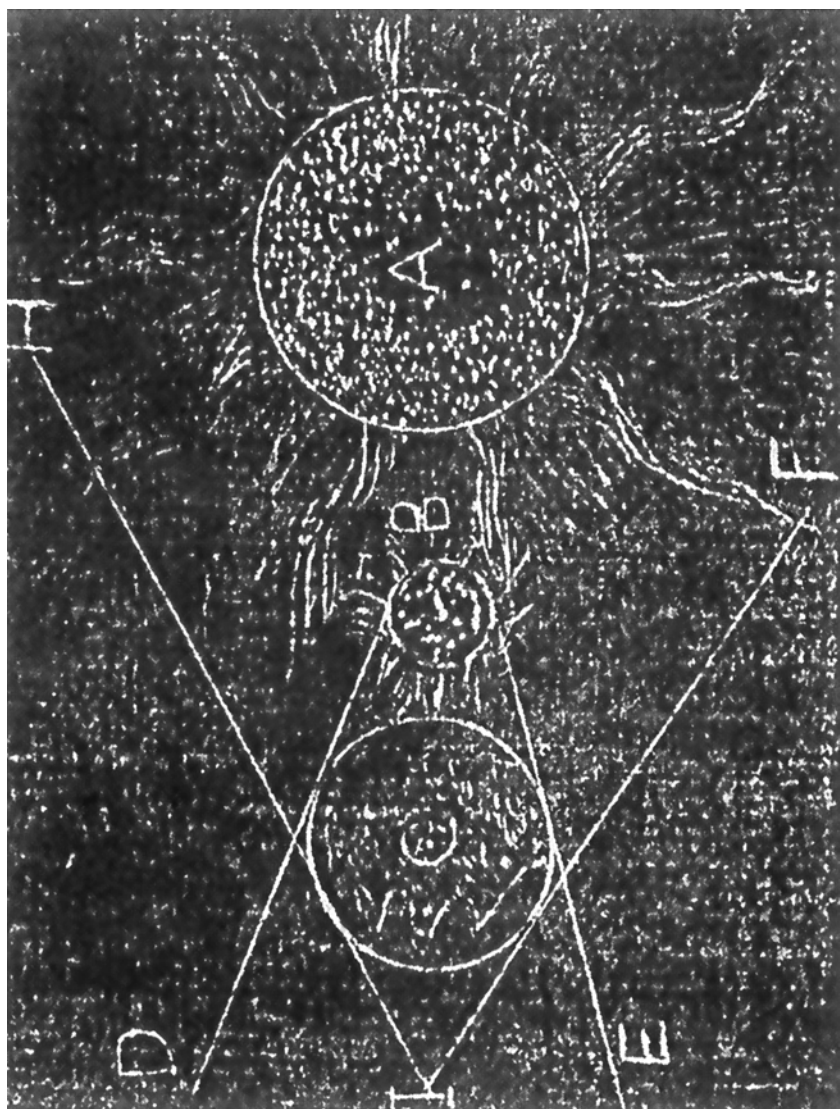
La conclusione di questa raggione, e' che il sole e' corpo piu grande che la terra, per che manda il cono de l'ombra di quella, sin appresso alla sphaera di Mercurio, et non passa oltre. che se il sole fusse corpo lucido minore; bisognarebbe giudicare altrimenti: onde seguirebbe che trovandosi questo luminoso corpo ne l'hemisphero inferiore; verrebbe oscurato il nostro cielo in piu gran parte che illustrato: essendo dato o' concesso, che tutte le stelle prendeno lume da quello.

[THEOPHILO]. Hor vedete come un corpo luminoso minore può illuminare piu dellá mitta d'un corpo opaco piu grãde. Dovete avvertire quel che veggiamo per esperienza. Posti due corpi de quali l'uno e' opaco, et grande come A; l'altro piccolo lucido come N. se sará messo il corpo lucido nella massima [minima], et prima distanza, come e' notato nella seguente figura, verrá ad illuminare secondo la raggione de l'arco piccolo C.D. stendendo la linea Bi. Se sará messo nella seconda distanza maggiore, verrá ad illuminare secondo la raggione del'arco maggiore EF. stendendo la linea B2. se sará nella terza, et maggior distanza, terminará secondo la raggione del'arco piu grande GH. terminato da la linea B3. Dal che si conchiude che può avvenire che il corpo lucido B. servando il vigore di tanta lucidezza che possa penetrare tanto spacio, quanto á simile effetto si richiede, potrà, col molto discostarsi comprendere al fine arcó maggior che il semicircolo: atteso che non e' raggione che quella lontananza ch'há ridotto a' tale il corpo lucido che comprenda il semicircolo, non possa oltre promuoverlo à comprendere di vantaggio. Anzi vi dico de piu, che essendo ch'il corpo lucido nõ perde il suo diametro se non tardissima et difficilissimamente: et il corpo opaco (per grande che sia) facilissimamente,

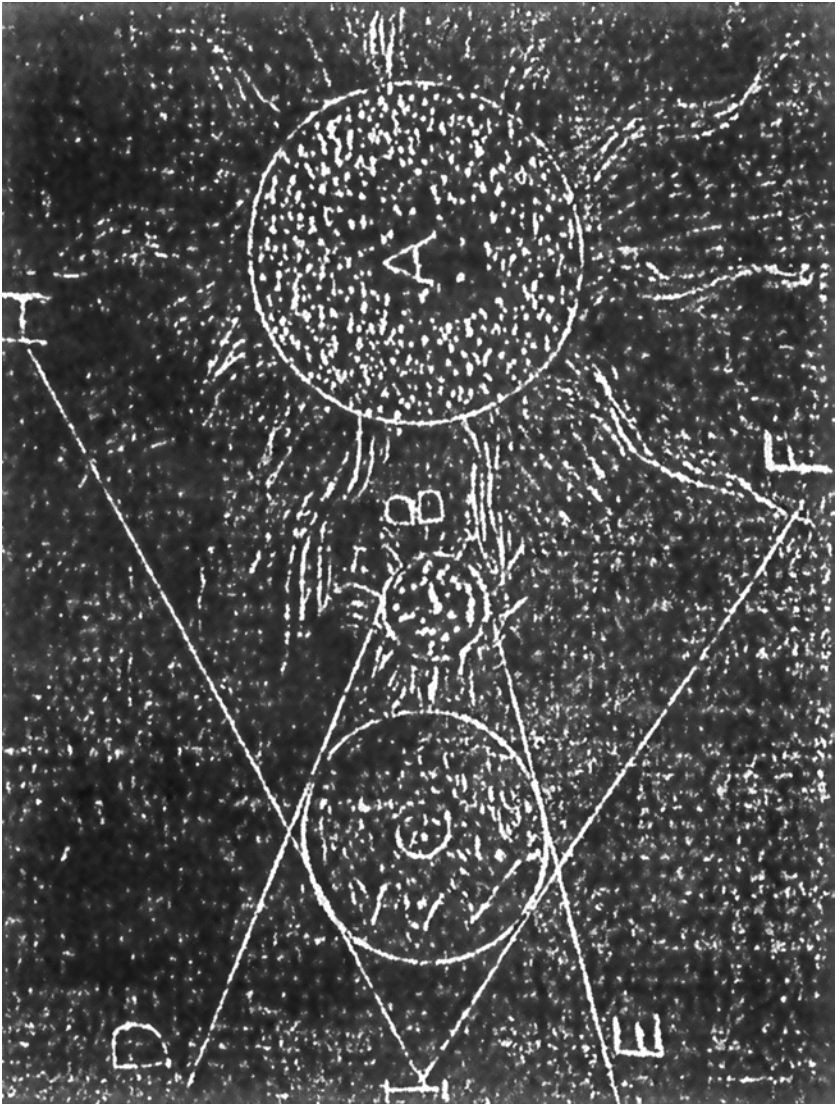
convincingly that the sun is not only as big as the earth, but even bigger. The argument begins with a large luminous body which sheds its light on a smaller opaque body, producing a cone-shaped shadow with its base in the opaque body itself and the cone cast in the opposite direction. As the following illustration shows, the luminous body M [A in fig.], placed opposite C, with limits at H and I [F in fig.], casts a cone of shadow to the point N [I in fig.]. A smaller luminous body, on the other hand, forms its cone with respect to the larger opaque body without any point at which it can reasonably be considered to vanish; so that it appears to form an infinite cone. This can be seen from the figure of the luminous body A [B in fig.], and from the cone of shadow which the opaque body C casts according to the lines C-D C-E, which continue to dilate in a shadowy cone until they become infinite, without finding any base in which they terminate. [Figure 2]

This argument reaches the conclusion that the sun is larger than the earth because it casts its cone of shadow almost up to the sphere of Mercury, and not beyond.<sup>27</sup> If the sun were a luminous body smaller than earth, the situation would be different. For in that case, it would follow that when the luminous body was in the Southern Hemisphere, our sky would be more dark than light – at least if we assume that the stars all receive their light from the sun.<sup>28</sup>

[THEOPHILUS]. Now I will show you how a smaller luminous body can illuminate more than half of a larger opaque body. You must pay attention to what we learn from experience. We take two bodies, of which one is opaque and large like A, and the other small and luminous like N. If the luminous body is placed at the first and minimum distance, as in the following illustration, it will illuminate the extent of the small arc C-D, which is an extension of the line B1. If it is placed at a second and greater distance, it will shed its light over the larger arc E-F, which is an extension of the line B2. If it is placed at a third and greater distance, it will illuminate the area delimited by the larger arc G-H, which is an extension of the line B3. From this it is possible to deduce that the luminous body B, by the strength of that amount of illumination which is able to penetrate the quantity of space corresponding to its effect, will be able, by moving a long way away, to cover an arc larger than the semicircle. For there is no reason why the distance which has allowed the luminous body to throw its light over the semicircle should not permit it to cover an even larger area if the distance were to be increased.<sup>29</sup> Furthermore, the diameter of a luminous body decreases with distance only very slowly and with difficulty, while that of an opaque body (of



[Fig. 2 © The British Library Board, C.37.c.14.(2.) p. 58.]



[Fig. 2 Diagram showing that the luminous sphere of the sun must be larger than the opaque sphere of earth because the earth produces a finite cone of shadow. © The British Library Board, C.37.c.14.(2.) p. 58.]

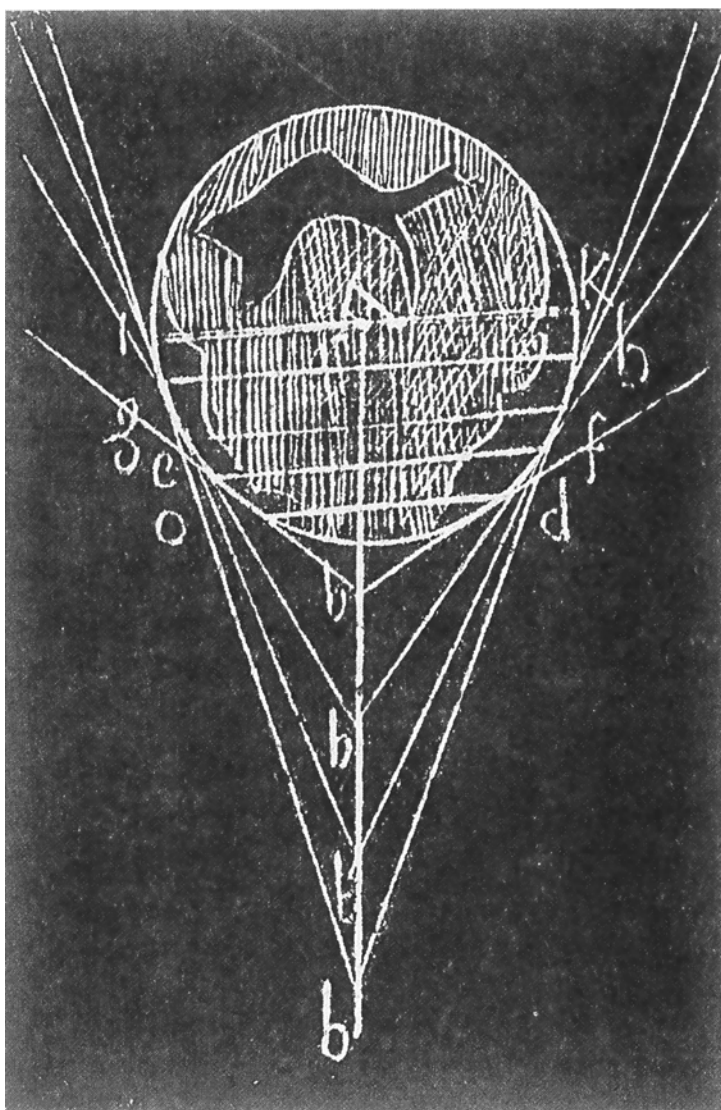
et improporționalmête il perde: [Figure 3] però si come per progresso de distanza dalla corda minore CD. é andato á terminare la corda maggiore EF. et poi la massima GH. la quale é diametro: cossi crescendo piu et piu la distanza, terminará l'altre corde minori oltre il diametro, fin tanto ch'il corpo opaco tramezzante non impedisca la reciproca vista de gli corpi diametralmente opposti. Et la causa di questo e' che l'impedimento che dal diametro procede: sempre con esso diametro si vá diminuendo piu et piu, quanto l'angolo B. si rende piu acuto. Et é necessario al fine che l'angolo sii fatto tanto acuto (per che nella physica divisione d'un corpo finito e' pazzo chi crede farsi progresso in infinito, o' l'intenda in atto o' in potenza) che non sii piu angolo, ma una linea, per la quale dui corpi visibili opposti possono essere alla vista l'un de l'altro; senza che in punto alchuno, quel ch'e' in mezzo, vaglia impedire: essendo che questo há persa ogni proportionalitá et differenza diametrale, la quale ne i' corpi lucidi persevera. Però si richiede che il corpo opaco che tramezza, ritegna tanta distanza da l'un et l'altro, per quanta possa haver persa la detta proportione, et differenza del suo diametro: come si vede et e' osservato nella terra; il cui diametro non impedisce che due stelle diametralmente opposte si veggano l'una l'altra, cossi come l'occhio senza differenza alchuna puó veder l'una et l'altra dal centro emispherico N. et dalli punti de la circonferenza A.N.O. (haven-doti imaginato in tal bisogno, che la terra per il centro sii divisa in due parte uguali á fin ch'ogni linea prospettivale habbia il suo loco.) Questo si fá manifesto facilmente ne la presente figura. [Figure 4]

Dove per quella ragione che la linea A.N. essendo diametro fa l'angolo retto, ne la circonferenza; dove e' il secondo loco, lo fá acuto: nel terzo piu acuto, bisogna ch'al fine dovenghi a' l'acutissimo, et al fine a' quel termine che non appaia piu angolo, ma linea; et per conseguenza e' destrutta la relatione, et differenza del semidiametro, et per medesima ragione, la differenza del diametro intiera AO, si distruggerá. La onde al fine e' necessario che dui corpi piu luminosi, i' quali non si tosto perdono il diametro, non saranno impediti per non vedersi reciprocamente; non essendo il lor diametro svanito, come quello di non lucido ò men luminoso corpo tramezzante.

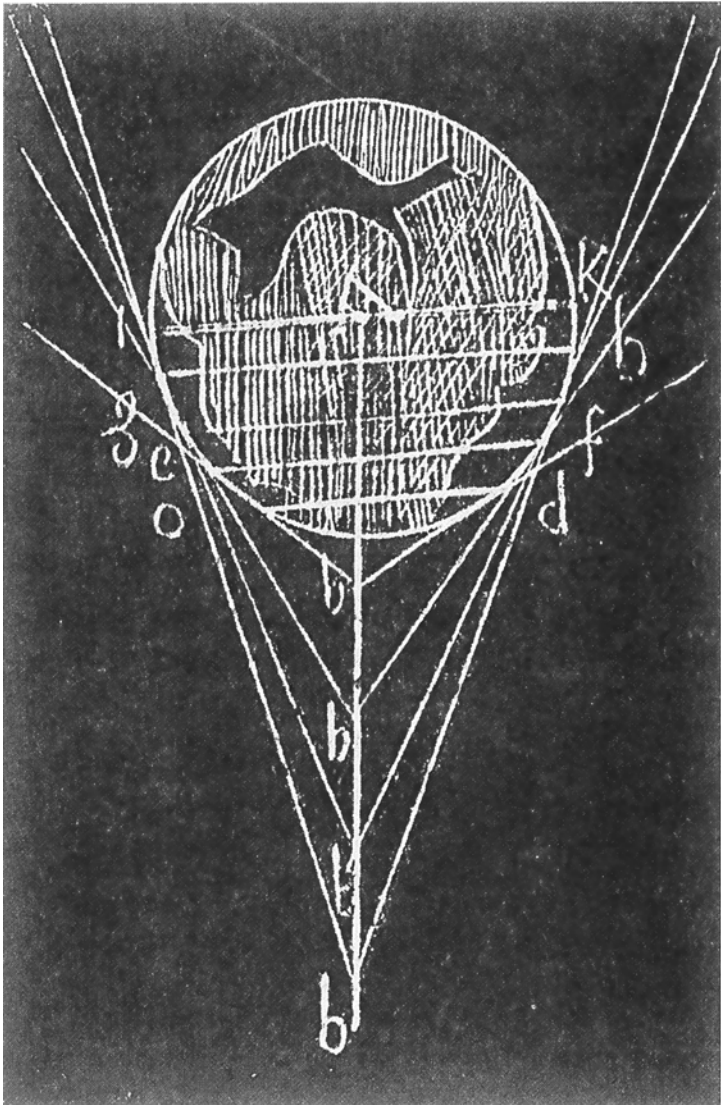
whatever size) decreases rapidly and out of all proportion. [Figure 3] Notice that with the increase in the distance, we pass from the smaller arc CD to the larger arc EF, and then to the maximum arc GH, which is the diameter. If the distance should increase even further it will reach the other lesser arcs beyond the diameter, at least for as long as the opaque body in between does not impede the view of the bodies diametrically opposite. The reason for this is that the impediment caused by the diameter continues to diminish as the diameter continues to diminish, while the angle B becomes more and more acute. In the end it necessarily becomes so acute that (given that, in physics, division of a finite body cannot progress to infinity except for those who are mad, whether we think of it in act or in potential) it is no longer an angle but a line.<sup>30</sup> For this reason, two visible bodies lying opposite one to another can be seen one by the other without the one in the middle impeding this in any point, given that this middle body has lost all proportion and difference of diameter which a luminous body would preserve. For this to be true, the opaque body which lies in between must be at a sufficient distance from both the other bodies to allow the proportion and difference of its diameter to disappear. This can be seen in the case of earth, whose diameter does not impede two stars lying diametrically opposite one another to be seen one from the other, in the same way as the eye, without any difference whatever, can see one or the other from the centre of the hemisphere N and from the points of the circumference ANO (supposing the earth, for convenience, divided into two equal parts through its centre so that each line is in the correct perspective).<sup>31</sup> This is easy to see from the following figure. [Figure 4]

Here the line AN, being the diameter, lies at right angles with respect to the circumference. However, in the second position the angle becomes acute, in the third position still more acute, becoming gradually more and more acute until it appears no longer as an angle but as a straight line. In consequence of this, the relation and difference with respect to the radius vanishes, and, for the same reason, its relation to the whole diameter AO reduces to nothing. For this reason, it follows necessarily that two luminous bodies, whose diameters will not disappear from view so easily, will not be impeded from viewing each other reciprocally; for their diameters will not vanish as will happen with a less luminous or opaque body lying in between them.

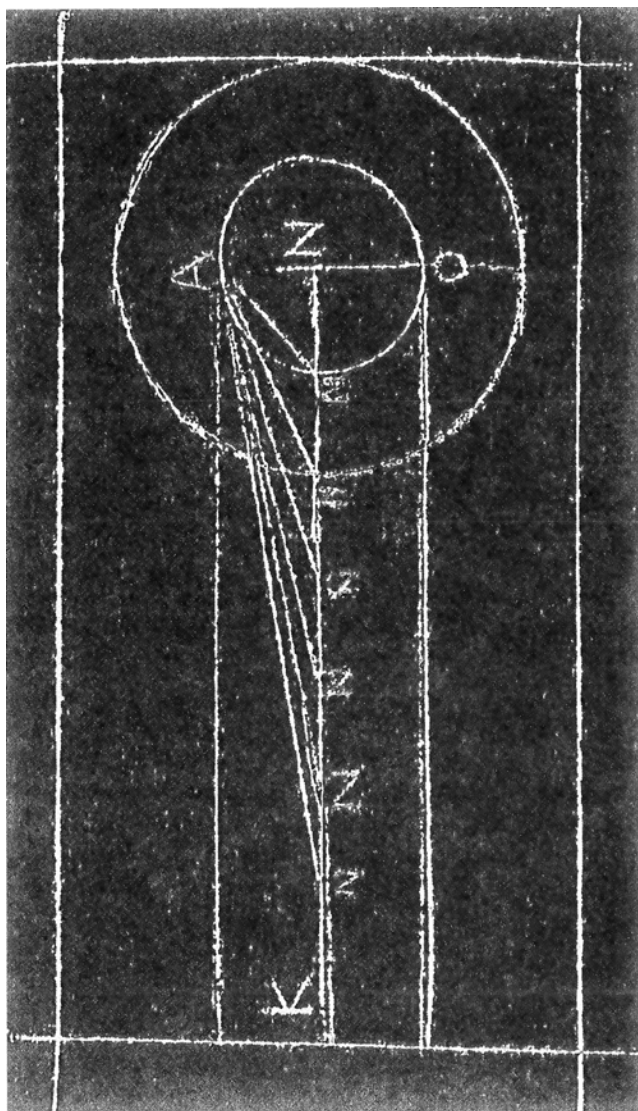




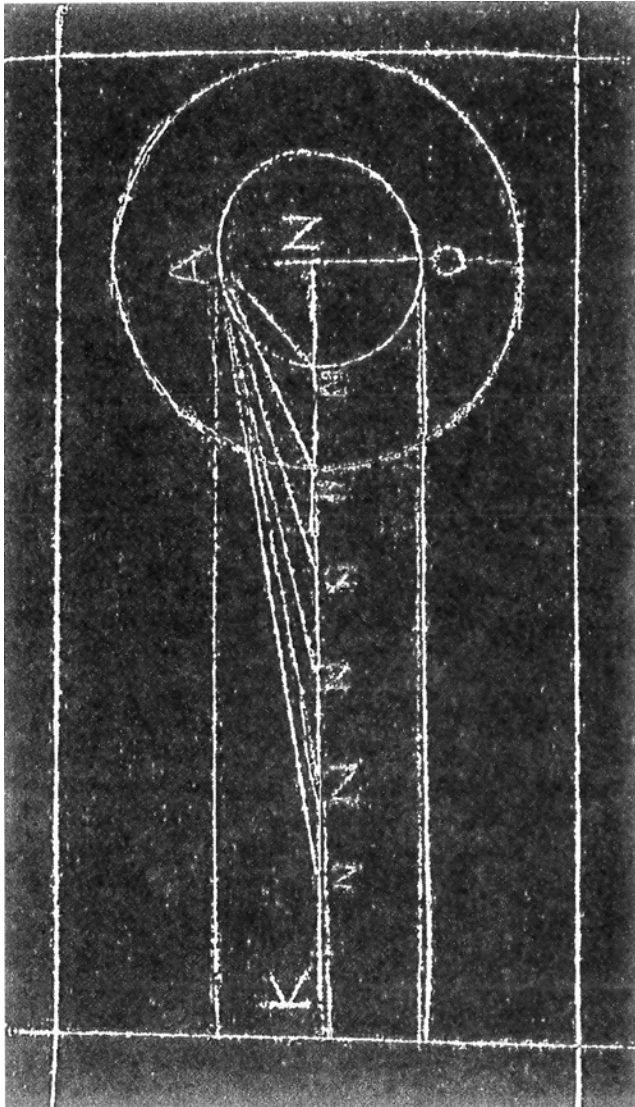
[Fig. 3 © The British Library Board, C.37.c.14.(2.) p. 60.]



[Fig. 3 Diagram claiming to show (erroneously) how a small luminous body moving away from a large opaque sphere will illuminate it at a great distance even beyond its diameter until a point is reached where the opaque body will no longer impede the vision of another luminous body placed on the opposite side.



[Fig. 4 © The British Library Board, C.37.c.14.(2.) p. 62.]



[Fig. 4 Diagram related to the previous figures showing how the eye of an observer moving away from the centre of the earth will see its diameter at an ever more acute angle until the angle becomes a straight line and the earth becomes a mere point and finally disappears.

Concludesi dunque che un corpo maggiore il quale e' piu atto a' perdere il suo diametro: benché stia per linea rettissima al mezzo, non impedirà la prospettiva di dui corpi quantosivoglia minori, pur che serbino il diametro della sua visibilità, il quale nel piu gran corpo é perso. Quà per disrozzir uno ingegno non troppo sollevato á fin che possa facilmente introdursè à comprendere la apportata raggione, et per ammollar al possibile la dura apprensione: fategli sperimentare ch'havendosi posto un stecco vicino a' l'occhio: la sua vista sarà di tutto impedita a' veder il lume de la candela posta in certa distanza: al quale lume quanto piu si viene accostando il stecco, allontanandosi da l'occhio; tanto meno impedirà detta veduta, sin tanto che essendo si vicino, et gionto al lume, come prima già era vicino, et gionto a' l'occhio: non impedirà forse tanto, quanto il stecco e' largo.

Hor giongí a' questo che ivi rimagna il stecco, et il lume altre tanto si discoste; verra il stecco ad impedir molto meno. Cossi piu et piu aumentando l'equidistanza de l'occhio et del lume dal stecco: al fine senza sensibilità alchuna del stecco, vedrai il lume solo. Considerato questo facilmente quantosivoglia grosso intelletto potrà essere introdotto ad intendere quel che poco avanti e' detto.

SMITHO. Mi par quanto al proposito, mi debba molto essere soddisfatto: ma mi rimane anchora una confusione nella mente quanto á quel che prima dicesti; come noi alzandoci da la terra et perdendo la vista de l'orizzonte di cui il diametro sempre piu et piu si vá attenuando: vedremmo questo corpo essere una stella. vorrei che à quel tanto ch'havete detto agiongessivo qualche cosa circa questo; essendo che stimate molte essere terre simili á questa, anzi innumerabili, et mi ricordo de haver visto il Cusano di cui il gioditio só che non riprovate, il quale vuole che ancho il sole habbia parti dissimilari come la luna e la terra: per il che dice, che se attentamente fissaremo l'occhio al corpo di quello vedremo in mezzo di quel splendore piu circonfenziale che altrimenti, haver notabilissima opacità.

THEOPHILO. Da lui divinamente detto, et inteso, et da voi assai lodabilmente applicato. Se mi ricordo, io anchor poco fá dissi che (per tanto che il corpo opaco perde facilmente il diametro, il lucido difficilmente) avviene che per la lontananza s'annulla et svanisce l'apparenza del' oscuro; et quella del illuminato diaphano ò d'altra maniera lucido, si vá come ad unire; et di quelle parti lucide disperse si forma una visibile continua luce, però se la luna fusse piú lontana, non eclisarebbe il sole et facilmente potrà ogni huomo che sa considerare

In conclusion, then, a larger body whose diameter is more prone to vanishing, provided it lies on the middle of a straight line, will not impede the view of two bodies much smaller than itself, for their diameter will not have vanished as it has in the larger body.<sup>32</sup> Let me attempt to render more cultivated your rather simple mind, so that it may at last be capable of understanding my previous reasoning. To facilitate the laborious process of learning, you should, at this point, experiment by holding a matchstick near your eye. The sight will be totally unable to see the light of a candle placed at a certain distance. But if the stick is moved nearer to the light and further from the eye, the view will be impeded less. Finally, when the stick is nearly touching the light, it will impede its view a little less than its size would have led one to suppose.

But if the stick is now kept nearly touching the light, and the light moved the same distance away, the view of the light will be impeded much less. And as the equal distance of the eye and the light from the stick is increased, there will be no sight of the stick and only the light will be visible. By considering this phenomenon, even the most gross intellect will be initiated into an understanding of what I have just said.

SMITHUS. As far as this subject is concerned, I can only express my satisfaction. But there is still some confusion in my mind about what you said before: that is, that on rising above the earth and losing sight of the horizon, whose diameter would become gradually smaller, we would see this earthly body as if it were a star. I would like you to add something to what you said on that subject, especially in view of the fact that you think that there are many earths similar to ours, in fact innumerable other ones. I remember reading in Cusanus – whose judgment I know you are far from despising – that even the sun has dissimilar parts, like the moon and the earth. He says, in fact, that if we fix our eyes with attention on the body of the sun, we will notice that its light shines most brightly around the circumference, while in the centre there is a very marked opacity.<sup>33</sup>

THEOPHILUS. What he understood, he expressed most divinely, and you have done well to refer to it. If I remember rightly, some little time ago I said that, just as the diameter of an opaque body vanishes easily and that of a luminous one is much more persistent, similarly distance annuls the appearance of darkness. The diaphanous brightness or lucid appearance unites into a whole, and the separated luminous parts form a visible continuous light. So that if the moon were further away, it would not eclipse the sun; and everyone who knows anything of these things understands that, being further away, it would be even brighter.<sup>34</sup> If we

in queste cose, che quella piú lontana sarebbe ancho piú luminosa: nella quale se noi fussemo, non sarrebe piú luminosa a gl'occhi nostri: come essendo in questa terra, non veggiamo quel suo lume che porge à quei che sono ne la luna, il quale forse è maggior di quello che lei ne rende per i' raggi del sole nel suo liquido cristallo diffusi. Della luce particolare del sole non sò per il presente se si debba giudicar secondo il medesimo modo, o' altro. Hor vedete fin quanto siamo trascorsi da quella occasione. mi par tempo di rivenire all'altre parti del nostro proposito.

SMITHO. Sarà bene de intendere l'altre pretensioni, le quali lui há pos-  
sute apportare.

### **La terza proposta del dottor Nundinio.**

THEOPHILO. Disse appresso Nundinio che non puó essere verisimile che la terra si muove, essendo quella il mezzo et centro de l'universo, al quale tocca essere fisso et costante fundamento d'ogni moto. Rispose il Nolano: che questo medesimo puó dir colui che tiene il sole essere nel mezzo del'universo, et per tâto immobile et fisso, come intese il Copernico et altri molti che hanno donato termine circonferentiale á l'universo. di sorte che questa sua raggione (se pur e' raggione) e' nulla contra quelli, et suppone i' proprii principii. E' nulla ancho contra il Nolano il quale vuole il mondo essere infinito, et però non esser corpo alchuno in quello al quale simplicimēte convegna essere nel mezzo, ó nell'estremo, o' tra qué dua termini, ma per certe relationi ad altri corpi et termini intentionalmente appresi.

SMITHO. Che vi par di questo?

THEOPHILO. Altissimamente detto. per che come di corpi naturali nessuno si e' verificato semplicemente rotôdo, et per conseguenza haver semplicemente centro, cossi ancho de moti che noi veggiamo sensibile et physicamente ne corpi naturali, non e' alchuno che di gran lunga non differisca dal semplicemente circolare, et regolare circa qualche centro: forzensi quantosivogla color che fingono queste borre et empiture de orbi disuguali, di diversità de diametri, et altri empiastri, et recettarii, per medicar la natura fin tanto che vengha al servitio di Maestro Aristotele, o' d'altro, a' conchiudere che ogni moto e'

were in the moon, it would no longer be luminous in our eyes, any more than the earth seems luminous to us here. For we cannot see the luminosity that it irradiates to those who are in the moon. This could be greater than the rays of light it receives from the sun, and which it diffuses throughout its crystal liquid. As far as the particular question of the light of the sun is concerned, I am not sure at present if it should be judged in the same way, or differently. But look how far we have wandered from our subject. I think it is time to return to the propositions we are considering.

SMITHUS. I think we should dedicate our attention to the other arguments which were put forward by that doctor.

### **Nundinius's Third Proposition**

THEOPHILUS. Then Nundinius said that it cannot be true that the earth moves, because it is the middle and centre of the universe and has to be considered the fixed and constant foundation of all motion. The Nolan replied that the same thing could be said by those who believe that the sun is in the middle of the universe. They think that the sun is therefore immobile and fixed, as Copernicus and many others have claimed, believing that the universe has a circumference. So that this kind of reasoning (if it can be called reasoning) carries no weight with those who are of a contrary opinion; while at the same time it presupposes its own principles. Above all, it carries no weight with the Nolan, who proposes an infinite universe within which no body can be said to be in the middle, or on the edge, or between one and the other – but only to be in relation to other bodies and boundaries which are specifically defined.<sup>35</sup>

SMITHUS. What is your opinion of this?

THEOPHILUS. That he is undoubtedly right. For just as no natural body has been shown to be absolutely round, and thus to have an exact centre, so the movements of natural bodies which we see with our senses – physically – are always far from being absolutely circular and regular around some centre. Those who want to imagine fillings and wadding of irregular orbs, full of bulges and cavities, can force matters as much as they like, inventing plasters and other prescriptions in order to heal nature so that it can serve their master, Aristotle or someone else, by claiming



continuo et regolare circa il centro. Ma noi che guardamo non a le ombre phantastiche: ma a' le cose medesme. Noi che veggiamo un corpo aereo, ethereo, spirituale, liquido, capace loco di moto et di quiete, sino immenso et infinito, (il che dovamo affermare al meno perche non veggiamo fine alchuno sensibilmente, ne rationalmête) et sappiamo certo che essendo effetto et principiato, da una causa infinita, et principio infinito, deve secondo la capacità sua corporale; et modo suo essere infinitamente infinito. Et son certo che non solamête á Nundinio, ma anchora á tutti i' quali sono professori de l'intendere, non e' possibile giamai di trovar raggione semiprobabile per la quale sia margine di questo universo corporale; et per conseguenza anchora li astri che nel suo spacio si contengono, siino di numero finito; et oltre essere naturalmente determinato centro et mezzo di quello.

SMITHO. Hor Nundinio aggiunse qualche cosa á questo? apporto qualche argomento, o' verisimilitudine, per inferire che l'universo prima sii finito, Secondo che habbia la terra per suo mezzo, Terzo che questo mezzo sii in tutto et per tutto immobile di moto locale?

THEOPHILO. Nūdinio come colui che quello che dice, lo dice per una fede et per una consuetudine; et quello che nega, lo nega per una dissuetudine et novitá, come é ordinario di qué che poco cōsiderano et non sono superiori alle proprie attioni, tanto rationali, quanto naturali, rimase stupido et attonito; come quello á cui di repente appare nuovo phantasma. Come quello poi che era alquanto piú discreto, et men borioso, et maligno ch'il suo compagno; tacque, et non aggiunse paroli ove non posseva aggiungere raggioni.

FRULLA. Non e' cossi il dottor Torquato il quale o' á torto o' á raggione, o' per Dio, o' per il diavolo la vuol sempre combattere, quando há perso il scudo da defendersi, et la spada da offendere; dico quando non há piu risposta, ne argomento; salta ne calci de la rabbia, acuisce l'unghie de la detractione, ghigna i' denti delle ingiurie, spalancha la gorgia de i' clamori; á fin che non lascie dire le raggioni cōtrarie, et quelle non pervengano á l'orecchie de circostanti come hò udito dire.

SMITHO. Dumque non disse altro.

THEOPHILO. Non disse altro á questo proposito: ma entró in un'altra proposta.

that motions are all regular and smooth around the centre.<sup>36</sup> But we who look at things as they are, without creating imaginary shadows: we see a single airy, ethereal, spiritual, and liquid body, a capacious place of motion and quiet which reaches out into the immensity of infinity. And we have to affirm this because we can detect no end to it, either with our senses or with our reason. Furthermore it is certain that, in so far as it is the effect of an infinite principle and cause, it has to be infinitely infinite both as a body and in its mode of being.<sup>37</sup> I am certain that neither Nundinius, nor all the other professors of understanding, will ever be able to find even a half-probable reason why there should be a boundary to this universal body; or why, as a consequence of this, the stars contained in this space should be finite in number; or why there should be a naturally determined centre and middle of this space.

SMITHUS. So, did Nundinius add anything to this? Did he advance some proofs or probabilities to support his contention that: first of all, the universe is finite; secondly, that the earth is at the centre; thirdly, that this centre is in every possible way immobile and without local motion?

THEOPHILUS. Nundinius, like everyone who says things on the basis of faith or out of habit, or who denies things on the basis of their unusualness or novelty, appeared surprised and stunned. People normally are when they think little and are unable to rise above their own actions, whether rational or natural. He seemed like somebody who has just been surprised by a ghost. Given that he was, nevertheless, far more discreet and less argumentative and evil than his companion, he remained silent and preferred not to speak where he was unable to reason.

FRULLA. Very unlike Dr Torquatus, who, whether rightly or wrongly – in the name of God or the devil – always wants a fight. Above all, when he has lost his shield to defend himself with, and his sword for the attack: that is when he has no more replies or objections to make. Then he kicks out in anger, scratches critically, grinds his teeth insultingly, and starts to shout loudly rather than let others say something to the contrary, which might be heard by those around him. At least, that's what people say.

SMITHUS. So he said nothing else.

THEOPHILUS. Not on that subject; but he started off on another tack.

**Terza [Quarta] proposta del Nundinio.**

Per che il Nolano per modo di passaggio disse essere terre innumerevoli simile à questa: Hor il dottor Nundinio come bon disputante non havendo che cosa aggiungere al proposito, comincia á dimandar fuor di proposito, et da quel che diceamo della mobilità o' immobilità di questo globo: interroga della qualità de gl'altri globi, et vuol sapere di che materia fusser quelli corpi che son stimati di quinta essentia: d'una materia inalterabile, et incorrottile, di cui le parti piu dense son le stelle.

FRULLA. Questa interrogatione mi par fuor di propositio, benche io non m'intendo di logica.

THEOPHILO. Il Nolano per cortesia non gli volse impropere questo: ma dopo havergli detto che gl'harebbe piaciuto che Nundinio seguitasse la materia principale, o' che interrogasse circa quella: gli rispose che li altri globi che son terre, non sono in punto alchuno differenti da questo in specie solo in esser piu grandi et piccioli come ne le altre specie d'animali per le differenze individuali accade inequalità, ma quelle sphere che sò foco come e' il sole (per hora) crede che differiscono in specie come il caldo et freddo; lucido per se et lucido per altro.

SMITHO. Perche disse creer questo per hora, et non lo affirmò assolutamente?

THEOPHILO. Temendo che Nundinio lasciasse anchora la questione che novamente haveva tolta, et si afferrasse et attaccasse á questa. Lascio che essendo la terra un'animale, et per conseguenza un corpo dissimilare, non deve esser stimata un corpo freddo per alchune parti massimamente esterne e ventilate dal'aria; che per altri membri, che son gli piu di numero et di grandezza, debba esser creduta et calda et caldissima: Lascio anchora che disputando con supponere in parte i' principii del'adversario il quale vuol essere stimato et fã professione di Peripatetico: et in un'altra parte i' principii proprii, et gli quali non son concessi, ma provati: la terra verrebbe ad esser cossi calda come il sole in qualche comparatione.

SMITHO. Come questo?

### Nundinius's Fourth Proposition

The Nolan, to bridge the gap, said that there were innumerable earths similar to this one. Then Dr Nundinius, like a good debater who has nothing to say on the chosen matter for debate, started to ask questions off the subject. Referring back to what we had said about the mobility or immobility of this globe of ours, he asked about the quality of those other globes. He wanted to know what kind of matter makes up those bodies that are considered as made of a quintessence: that is, an unalterable and incorruptible matter which, in its densest parts, makes up the stars.<sup>38</sup>

FRULLA. That question seems to me irrelevant to the proposition, even if I don't understand logic.<sup>39</sup>

THEOPHILUS. Out of politeness, the Nolan was loath to accuse him of impropriety. He simply told him that he would prefer it if he kept to the subject, and asked his questions about that. Then he replied that those other globes are earths, in no way different in species from this one except in so far as they are larger or smaller. As is the case with other species of living things, there are inequalities arising from individual differences. However, he thinks for the moment that those spheres which are fiery, like the sun, are specifically different in the way that heat is from cold, intrinsic light from extrinsic light.<sup>40</sup>

SMITHUS. Why did he say that he thought this now, rather than in the sense of an absolute affirmation?

THEOPHILUS. Because he was afraid that Nundinius would steer away again from the question which he had newly avoided, and start considering this one. I leave aside the idea that the earth, being a living animal – and thus a made up of dissimilar parts – cannot be considered a cold body just because some of its external parts are particularly exposed to the air. But then neither can it be considered hot, or very hot, just because of other parts which are more numerous and large. I also ignore the fact that by disputing partly on the basis of suppositions proper to his adversary – who wants to be reputed a Peripatetic, and professes to be one – and partly on the basis of his own principles, which are proved and not merely conceded, the conclusion reached could be that the earth is by comparison as hot as the sun.

SMITHUS. How could that be?

THEOPHILO. Perché (per quel che habbiamo detto) dal svanimento delle parti oscure et opache del globo, et dalla unione delle parti cristalline et lucide, si viene sempre alle reggioni più et più distante, á diffondersi più et più di lume. Hor se il lume e' causa del calore (come con esso Aristotele, molti altri affermano i' quali voglono che ancho la luna et altre stelle per maggior et minor participatione di luce son più et meno calde: onde quando alchuni pianeti son chiamati freddi, voglono che se intenda per certa comparatione et rispetto,) avverrà che la terra có gli raggi che ella manda alle lontane parti de l'etherea reggione, secondo la virtù della luce, venghi á comunicar altre tanto di virtù di calore. Ma á noi non costa che una cosa per tanto che e' lucida, sii calda, per che veggiamo appresso di noi molte cose lucide ma non calde. Hor per tornare á Nūdinio Ecco che comincia á mostrar i' denti, allargar le mascelle, strēger gl'ochci, rugar le ciglia, aprir le narici, et mandar un crocito di cappone per la canna del polmone; acciò che con questo riso gli circostanti stimassero che lui la intēdeva, bene, lui havea raggione; et quell altro dicea cose ridicole.

FRULLA. Et che sia il vero; vedete come lui se ne rideva?

THEOPHILO. Questo accade á quello che dona confetti á porci. Dimandato perché ridesse? rispose che questo dire et immaginarsi che siino al[tre] terre, che habbino medesme proprietá et accidenti e' stato tolto dalle vere narrationi di Luciano.

Rispose il Nolano che se quando Luciano disse la luna essere un'altra terra cossi habitata et colta come questa; venne á dirlo per burlarsi di qué philosophi che affermano essere molte terre (et particolarmente la luna la cui similitudine con questo nostro globo, é tanto piú sensibile, quanto é più vicina á noi) lui nõ hebbe raggione: ma mostró essere nella comone ignoranza, et cecitá: per che se ben consideriamo troveremo la terra et tanti altri corpi che son chiamati astri: membri principali de l'universo; come danno la vita et nutrimento alle cose, che da quelli toglono la materia, et á medesmi la restituiscano: cossi et molto maggiormente hāno la vita in se, per la quale cō una ordinata et natural voluntá da intrinseco principio se muoveno alle cose, et per gli spacci convenienti ad essi. Et non sono altri motori estrinseci che col muovere phantastiche sphere vengano á trasportar questi corpi come inchiodati in quelle: il che se fusse vero, il moto sarrebe violēto fuor de la natura del mobile, il motore più imperfetto, il moto et il motore solleciti et laboriosi, et altri molti inconvenienti s'aggiongerebbero. Consideresi dunque

THEOPHILUS. Because (as we have said) when the dark and opaque parts of the globe vanish, and the crystalline and luminous parts merge together, it will become brighter and brighter as the distance increases. Now, if light is the cause of heat (as Aristotle and many others claim, convinced that the moon and other stars are more or less hot due to a greater or lesser degree of light, so that they want some planets to be thought of as cold only in a comparative or relative sense), it follows that the earth, by sending her rays to the distant parts of the ethereal region by virtue of her light, must be considered to communicate the same amount of heat. But in our opinion it is not true that something is hot because it is luminous; because we see many things around us which are luminous without being hot.<sup>41</sup> So, to come back now to Nundinius: this is when he started to show his teeth, open his jaws, screw up his eyes, frown with his eyebrows, widen his nostrils, and utter a croak like a capon from his windpipe. And as he started to laugh, those around him were convinced that he knew what he was talking about – that he was right – and that the other man was saying something quite ridiculous.

FRULLA. Given that it is the truth, do you understand how he laughed about it?

THEOPHILUS. This is what happens to the man who casts pearls before swine. When Nundinius was asked why he was laughing, he replied that all this talk and fantasy about other earths which have the same properties and characteristics as this one is taken from the *True Histories* of Lucian.<sup>42</sup>

The Nolan replied that when Lucian says that the moon is another earth, inhabited and cultivated like this one, he says it only to ridicule those philosophers who claim that there are many earths (and in particular the moon, whose similarity to this globe of ours becomes evident the closer she is to us). He was mistaken about that, and no less ignorant or blind than anybody else. For if we think about it carefully, we will realize that the earth and many other globes which are called astral bodies – or the principal components of the universe – all have life in them to a remarkable degree. For they give life and nourishment to things, by absorbing their matter and then giving it back to them again. It is this which makes them move towards the goals and in the space assigned to them, with a regulated and natural will, as if moved by some intrinsic principle. There really are no extrinsic motors which project these bodies along as if transfixed to imaginary moving spheres. For if that were true, the motion would be a violent one, in excess of the nature of the moving body. The motor would be less perfect, with both the motion and the motor agitated and laboured; and there would be other

che come il maschio se muove alla femina, et la femina al maschio; ogni herba et animale, qual piu et qual meno espressamente si muove al suo principio vitale come al sole et altri astri: la calamita se muove al ferro, la pagla á l'ambra, et finalmente ogni cosa vâ a' trovar il simile, et fugge il contrario: tutto avviene dal sufficiênte principio interiore per il quale naturalmête viene ad esagitarse, et nõ da principio esteriore come veggiamo sempre accadere á quelle cose che son mosse ò contra, ò extra la propria natura. Muovêsi dũque la terra, et gli altri astri secõdo le proprie differenze locali dal principio intrinseco che é l'anima propria. Credete (disse Nũdinio) che sii sensitiva questa anima? Non solo sensitiva rispose il Nolano ma ancho intellettiva; non solo intellettiva come la nostra, ma forse ancho piu. Quà tacq; Nũdinio et non rise.

PRUDENTIO. Mi par che la terra essendo animata deve nõ haver piacere quãdo se gli fãno queste grotte et caverne nel dorso, come a noi viene dolor, et dispiacere quãdo ne si pianta qualche dête là o' ne si fora la carne.

THEOPHILO. Nundinio non hebbe tanto del Prudẽtio che potesse stimar questo argomẽto degno di produrlo, benché gli fusse occorso, per che nõ é tanto ignorante filosofo, che non sappia che se ella há senso; nõ l'há simile al nostro, se quella há le membra; non le hà simile á le nostre; se há carne, sangue, nervi, ossa, et vene, non son simili á le nostre; se há il core non l'ha simile al nostro, cossi de tutte l'altre parti, le quali hanno proportionẽ a gli membri de altri et altri che noi chiamiamo animali, et comunmente son stimati solo animali. Non é tâto buono Prudentio, et mal medico, che non sappia che alla gran mole de la terra, questi sono insensibilissimi accidenti, li quali à la nostra imbecillitá sono tanto sensibili. Et credo che intenda che non altrimenti che ne gli'animali quali noi conoscemo per animali, le loro parti sono in continua alteratione et moto, et hanno un certo flusso, et reflusso, dentro accogliendo sempre qualche cosa dall'estrinseco, et mandando fuori qualche cosa da l'intrinseco: onde s'allungano l'unghie; se nutriscono i' peli, le lane, et i' capelli; se risaldano le pelle, s'induriscono i' cuoi: cossi la terra riceve l'efflusso, et influxo delle parti, per quali molti animali (à noi manifesti per tali) ne fan vedere espressamente la loro vita: come é piu che verisimile (essendo che ogni cosa partecipa de vita) molti et innumerabili individui vivono nõ solamente in noi, ma in tutte le cose cõposte, et quando veggiamo alchuna cosa che se dice morire, nõ doviamo tâto credere quella morire, quãto che la si muta,

imperfections as well.<sup>43</sup> It must therefore be agreed that as the male is attracted to the female, and the female to the male, every plant and animal is attracted towards its vital principle, sometimes more and sometimes less. So it is with the sun and the stars. The magnet is attracted to iron, straw to amber and ultimately everything is moved to find what is similar to itself, and to avoid what is contrary.<sup>44</sup> All this happens because of an internal principle which is sufficient to provoke a natural form of activity, and not because of an external principle such as those which we see moving things against, or in contrast with, their own natures. The earth and the other stars, then, according to their specific local differences, are moved by an intrinsic principle which is the soul of each. "Do you think," asked Nundinius, "that this soul is sensitive?" "Not only sensitive," replied the Nolan, "but also intellectual like our own, and perhaps even more so."<sup>45</sup> This silenced Nundinius, and he laughed no more.

PRUDENTIUS. It seems to me that, if the earth were animated, it would not find it very pleasant to have grottoes and caverns gouged out of its crust any more than we find it pleasant to have a tooth taken out, or our flesh wounded.

THEOPHILUS. Nundinius was not so like Prudentius as to judge this an argument worthy of being produced, even if it had come to his mind. For no philosopher is so ignorant as not to know that if the earth does have senses of its own – they are not like ours. If it has limbs – they are not like ours. If it has flesh, blood, nerves, bones, and veins – they are not like ours. If it has a heart – it is not like ours. And the same can be said of all its other parts, which are proportioned to the parts of all those others which we call animals, and which are normally considered only as animals.<sup>46</sup> He is not such a good Prudentius or such a bad doctor as not to know that with respect to the enormous mass of the earth, these are irrelevant accidents, which are striking to us only because of our imbecility. And I think he understands that their parts are continually altering and moving in exactly the same way as in those animals which we normally consider as animals. They are involved in a certain process of flux and reflux, gathering continually within something from outside and sending out something from within. That is why nails become long; fur, wool, and hair all grow; skin heals over; hides become harder. In the same way, the earth receives the influx and outpour of its parts, which is what makes many animals (which clearly are such to us) demonstrate without doubt that they are alive. It is equally probable (given that everything participates in life) that many, and even innumerable, individual things live not only in us, but in all composite beings. And when we see something which we say is dying, we should not believe



et cessa quella accidẽtale cõpositione, et cõcordia, rimanẽdono, le cose che quella incorreno, sempre immortali: piu quelle che son dette spiritali, che quelle dette corporali, et materiali come altre volte mostreremo. Hor per venire al Nolano quando vedde Nundinio tacere; per risentirse á tempo di quella derisione Nundinica, che comparava le positioni del Nolano a' le vere narrationi di Luciano, espresse un poco di fiele et li disse: che disputando honestamente non dovea riderse, et burlarse di quello che non puó capire, che se io (disse il Nolano) non rido per le vostre phantasie: ne voi dovete per le mie sentẽze: se io cõ voi disputo con civiltá et rispetto; almẽo altre tãto dovete far voi á me, il quale vi conosco di tanto ingegno, che se io volesse defendere per veritá le dette narrationi di Luciano: non sareste sufficiente á distruggerle, et in questo modo con alquanto di colera rispose al riso: dopo haver risposto con piu ragioni alla dimanda.

#### **Quarta [Quinta] proposta di Nundinio.**

Importunato Nundinio sí dal Nolano, come da gl'altri che lasciando le questionì, del perche, et come, et quale; facesse qualche argomento.

PRUDENTIO. Per quomodo, et quare; quilibet asinus novit disputare.

THEOPHILO. Al fine fé questo del quale ne son pieni tutti cartocchini, che se fusse vero la terra muoversi verso il lato che chiamiamo oriente; necessario sarrebbe che le nuvole del aria sempre apparissero discorrere verso l'occidẽte, per raggione del velocissimo et rapidissimo moto di questo, globo che in spacio di vintiquattro hore deve haver compito si gran giro. A' questo rispose il Nolano che questo aere per il quale discorrono le nuvole et gli venti; é parte de la terra: per che sotto nome di terra vuol lui (et deve essere cossi al proposito) che se intenda tutta la machina, et tutto l'animale intiero che costa di sue parti dissimilari: onde gli fiumi gli sassi, gli mari, tutto l'aria vaporoso et turbulento il quale et rinchiuso ne gli altissimi monti, appartiene á la terra come membro di quella, o' pur come l'aria ch'e' nel pulmone, et altre cavitá de gl'animali per cui respirano, se dilatano le arterie, et altri effetti necessarij á la vita s'adempiscono. Le nuvole dunque da gl'accidenti che son nel corpo de la terra, si muoveno et son come nelle viscere de

that it is really dying but only that it is changing. That specific accidental composition and concord comes to an end, while those things that compose it remain, perpetually immortal. This is more true of the parts called spiritual than of those called corporeal and material, as we will show in another place.<sup>47</sup> And now – to come to the Nolan: when he saw Nundinius silent, so as not to delay his response to the Nundinian sneers in comparing the Nolan's position to that of Lucian in the *True Histories*, he expressed some bitterness. He told Nundinius that in a proper disputation it was not fair to laugh at, and deride, what one was unable to understand. "After all," said the Nolan, "I do not laugh at your fantasies, and neither should you laugh at what I say. As I dispute with you civilly and with respect, the least you can do is to do the same by me. For, knowing what your intelligence adds up to, if I really wanted to defend as truth the above-mentioned stories of Lucian, you would not be able to contradict them." And so, after having replied with reasoned arguments to the question, he replied with some anger to the laughter.

### Nundinius's Fifth Proposition

The Nolan, as well as the others, then implored Nundinius to leave aside questions as to the why, and the how, and the which, and to present some arguments ...

PRUDENTIUS. *Per quomodo et quare, quilibet asinus novit disputare.*<sup>48</sup>

THEOPHILUS. ... and at last he came up with this one, which can be found in innumerable texts: that if it is true that the earth moves towards that part which is called the east, then the clouds of the air would necessarily seem to move towards the west. The reason for this is the extremely quick and rapid movement of this globe, which, in the course of twenty-four hours, has to achieve such an ample rotation. The Nolan replied to this that this atmosphere, within which the clouds and the winds move about, is part of the earth. This is because, with the name of earth (and that must be the right meaning of the word) he wishes to signify the whole system and the whole animal formed by its dissimilar parts. In this way, the rivers, the stones, the seas, as well as all the vaporous and turbulent air which is imprisoned in the high mountains, become parts of the earth as if they were each one of its limbs. It is like the air in the lungs and other cavities of animals, which causes breathing and makes the arteries dilate, as well as leading to other effects which are necessary to life. The clouds, then, move as if they were accidentally linked to the earth's

quella, cossi come le acqui. Questo lo intese Aristotele nel primo de la Metheora, dove dice che questo aere che é circa la terra humido et caldo per le exalationi di quella; hà sopra di se un'altro aere, il quale é caldo et secco, et ivi non si trovan nuvole: et questo aere é fuori della circonferenza de la terra, et di quella superficie che la definisce á fin che vengha ad essere perfettamente rotonda: et che la generation de venti non si fá se non nelle viscere, et luochi de la terra: però sopra gl'alti monti ne nuvole, ne venti appaiono; et ivi l'aria si muove regolatamente in circolo, come l'universo corpo: Questo forse intese Platone all'hor che disse noi habitare nelle concavitá, et parte oscure de la terra: et che quella proportionne habbiamo á gl'animali che vivono sopra la terra, la quale hanno gli pesci á noi abitanti in un'humido piú grosso. Vuol dire che in certo modo questo aria vaporoso é acqua; et il puro aria che contiene piu felici animali e' sopra la terra, dove come questo Amphitrite e' acqua à noi, cossi questo nostro aere e' acqua á quelli. Ecco dunque onde si può rispondere á l'argomento referito dal Nundinio; per che cossi il mare non e' nella superficie, ma nelle viscere de la terra, come l'epate fonte de gl'humori é [in] noi, questo aria turbolêto nō é fuori ma é come nel polmone de gl'animali.

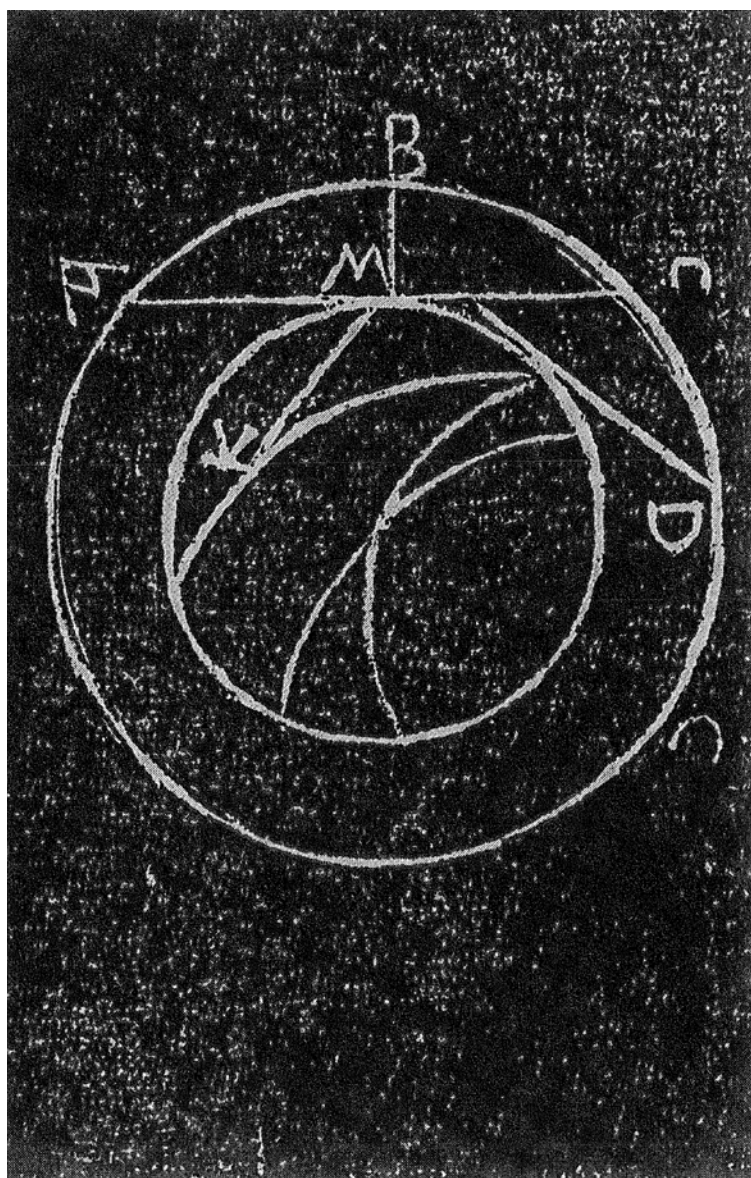
SMITHO. Hor onde avviene che noi veggiamo l'emisphero intiero: essendo che habitiamo ne le viscere de la terra?

THEOPHILO. Da la mole de la terra globosa non solo nella ultima superficie, ma ancho in quelle che sono interiori, accade che alla vista de l'orizzonte cossi una convessitudine doni loco á l'altra; che non può avvenire quello impedimento qual veggiamo quando trá gl'occhi nostri et una parte del cielo se interpone un monte, che per esserne vicino ne può togliere la perfetta vista del circolo de l'orizzonte. la distanza dunque di cotai monti i' quali siegueno la convessitudine de la terra; la quale non e' piana ma orbicolare, fá che non ne sii sensibile l'essere entro le viscere de la terra; come si può alquanto considerare nella presente figura dove la vera superficie de la terra e' A.B.C. entro la quale superficie vi sono molte particolari del mare, et altri continenti come per essemplio M. dal cui punto nō meno veggiamo l'intiero emisphero, che dal punto A. et altri del ultima superficie. Del che la ragione e' da dui capi, et dalla grandezza de la terra, et dalla convessitudine circonferentiale di quella per il che M punto non e' intanto impedito che non possa vedere l'emisphero; perche gl'altissimi monti non si vengono ad interporre al punto M come la linea MB. (il che credo accaderebbe quando la superficie della terra fusse piana.) [Figure 5] ma come la linea M.C. M.D. la quale non viene á caggionar

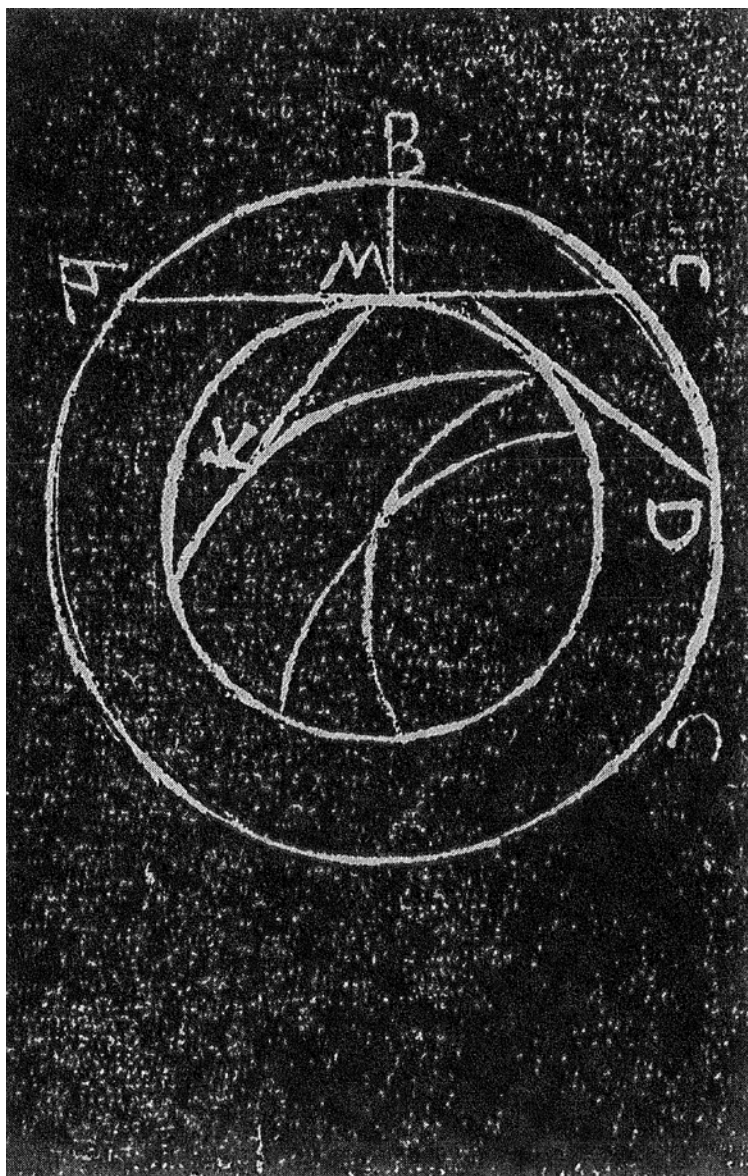
body – to its innermost parts, like the waters. Aristotle realized this when he said in the first book of the *Metereology* that “the part surrounding the earth is moist and warm, because it contains both vapour and a dry exhalation from the earth. But the next part, above that, is warm and dry, and contains no clouds. And this air is outside the circumference of the earth, and of the surface which defines it, so that it remains perfectly round. The winds, then, are generated only in the innermost parts of the earth; while above the mountains there appear to be no winds and no clouds. There the air moves regularly in a circle, like the body of the universe.”<sup>49</sup> Perhaps Plato meant the same thing when he said that we live in the concave and obscure parts of the earth, and that our relation to the animals who live above the earth is the same as that of the fish to us, inhabitants of a denser humid space.<sup>50</sup> What this means is that in some sense this vaporous air is water, and the pure air which contains happier animals is above the earth. And there, just as this Amphitrite<sup>51</sup> is water to us, so this air of ours is water to them. This then is the way to reply to the argument put forward by Nundinius. It means that the sea is not on the surface, but in the innermost recesses of the earth, just as the liver, or the source of the humours, is in us. This turbulent air is not outside our globe, but as if it were in the lungs of animals.

SMITHUS. So how is it that we see the entire hemisphere, if we live in the innermost recesses of the earth?

THEOPHILUS. From the massy globe of this earth, it can happen that not only from the upper crust but also from the interior parts one sees the horizon from inside a series of convexities. This cannot cause the kind of impediment that we have when a mountain intervenes between our eyes and a part of the sky, and which being close to us can interfere with the perfect vision of the circular horizon. It is the distance of those low mountains – tracing the convexity of an earth which is not flat but like an orb – which makes a person inside the innermost parts of the earth insensible to them. This is clear from the following illustration where the true surface of the earth is ABC. Within that surface there are many individual seas and continents, such as, for example, M. From point M we see the whole hemisphere no less than if we were in A or other points of the outer crust. There is a double reason why the point M is not prevented from seeing the hemisphere: the size of the earth, and the convexity of its circumference. For these reasons the very high mountains cannot be said to interfere with M following the line M-B (which I believe would happen if the surface of the earth were flat), [Figure 5] but rather following the lines M-C, M-D. Here we find no such impediment



[Fig. 5 © The British Library Board, C.37.c.14.(2.) p. 75.]



[Fig. 5 Diagram of the earth's globe designed to show how even the highest mountains fail to impede vision of the horizon as a hemisphere.

tale impedimento, come si vede in virtu de l'arco circonferentiale, et nota d'avantaggio che si come si referisce M. ad C. et M. ad D. cossi ancho K. si referisce ad M. onde non deve esser stimato favola quel che disse Platone delle grandissime concavitá et sení de la terra.

SMITHO. Vorrei sapere se quelli che sono vicini á gl'altissimi monti patiscono questo impedimento?

THEOPHILO. Non, ma quei che sono vicini a mōti minori: per che non sono altissimi gli monti, se non sono medesmamēte grandissimi in tãto, che la loro grandezza e' insensibile alla nostra vista: di modo che vengono con quello ad cōprendere piu, et molti orizzonti artificiali, ne i' quali gl'accidenti de gl'uni non possono donar alteratione à gl'altri; però per gl'altissimi non intendiamo come l'Alpe et gli Pyrenei et simili: ma come la francia tutta ch'e' tra dui mari settentrionale Oceano, et Australe Mediterraneo; da quai mari verso l'Alvernia sempre si vá montando, come ancho da le Alpe et gli Pireni, che son stati altre volte la testa d'un monte altissimo: la quale venendo tutta via fracasata dal tempo (che ne produce in altra parte per la vicissitudine de la rinovatione de le parti de la terra) forma tante mōtagne particolari le quale noi chiamiamo monti. Però quanto á certa instantia che produsse Nūdinio de gli monti di Scotia, dove forse lui è stato: mostra che lui non puó capire, quello che se intende per gl'altissimi monti. per che secondo la veritá, tutta questa isola Britannia, e' un monte che alza il capo sopra l'onde del mare Oceano, del quale monte la cima si deve comprendere nel loco piú eminente de l'Isola, la qual cima se giunge alla parte tranquilla de l'aria, viene á provare che questo sii uno di qué monti altissimi, dove é la reggione de forse piu felici animali. Alessandro Aphrodiseo ragiona del monte Olimpo, dove per esperienza delle ceneri de sacrificii, mostra la condition del monte altissimo, et de l'aria sopra i confini, et membri de la terra.

SMITHO. M'havete sufficientissamente soddisfatto, et altamente aperto molti secreti de la natura, che sotto questa chiave sono ascosi. Da quel che respondete á l'argomento tolto da venti, et nuvole: si prende anchora la risposta del altro, che nel secondo libro del cielo et mondo apportò Aristotele, dove dice che sarebbe impossibile che una pietra gittata á l'alto, potesse per medesima rettitudine perpendicolare tornare al basso: ma sarrebbe necessario, che il velocissimo moto della terra se la lasciasse molto á dietro verso l'occidente. Perche essendo questa proiectione dentro la terra e' necessario che col moto di quella si vengha á mutar ogni relatione di rettitudine et obliquitá: perche e' differēza tra il moto della nave, et moto de quelle cose che sono nella

because of the circumferential arc, as can be seen. And notice, above all, that as M is related to C and to D, similarly also K is related to M: and this means that what Plato said about the huge concavities and indents in the earth cannot be considered a fable.<sup>52</sup>

SMITHUS. I would like to know if those who are near very high mountains would suffer from this impediment.

THEOPHILUS. No, but those who are near lower mountains would. Because no mountains are very high if they are not also very large, so that their size cannot be determined by our sight. It is for this reason that they comprehend numerous artificial horizons, in which the accidental features of some cannot modify the others. So that when we say very high mountains, we do not mean those like the Alps or the Pyrenees; but we refer to the whole of France lying between two seas, the Ocean to the north and the Mediterranean to the south. Starting from those seas and going towards the Auvergne, one mounts ever higher, as is the case with the Alps or the Pyrenees, which were once the peak of an enormously high mountain. But then it was fragmented by time (which produces the same thing in other places as part of the process of renovation of the parts of the earth), forming so many individual elevations which we call mountains. As for the example produced by Nundinius referring to the mountains of Scotland, where perhaps he has been, it is clear that he has no understanding of what very high mountains are. Because, to be truthful, the whole of this island of Britannia is a mountain which rears its head above the waves of the Ocean. The crest of this mountain is to be considered the highest place in the island; and if this crest were to reach the zone of tranquil air, it would prove that this is one of those very high mountains, where the place of the happiest living things is perhaps to be found. Alexander of Aphrodisias writes about Mount Olympus, where the behaviour of the sacrificial ashes demonstrates it to be an example of a very high mountain, whose air lies above the limits and regions of the earth.<sup>53</sup>

SMITHUS. You have satisfied me with respect to this topic, and revealed to me many secrets of nature which are hidden under this key. From your reply to the argument based on the winds and the clouds, it is possible to deduce a reply to another argument proposed by Aristotle in the second book of *On the Heavens and the Earth*, where he says that it would be impossible that a stone thrown up into the air should fall perpendicularly down.<sup>54</sup> What would happen would be that the rapid motion of the earth would leave the stone behind and to the west. Furthermore, if we think of this projection as taking place within the earth, it would necessarily be the case that with the motion of the stone every relation of straight and oblique lines would alter, given that there is a difference between



nave: il che se non fusse vero seguitarrebbe che quando la nave corre per il mare giamai alchuno potrebbe trarre per dritto qualche cosa da un canto di quella à l'altro, et non sarebbe possibile che un potesse far un salto, et ritornare có pié onde le tolse.

[THEOPHILO] Con la terra dunque si muoveno tutte le cose che si trovano, in terra. se dūque dal loco extra la terra qualche cosa fusse gittata in terra; per il moto di quella perderebbe la rettitudine: Come appare nella nave A.B. la qual passando per il fiume, se alchuno che se ritrova ne la spōda di quello C. vègha à gittar per dritto un sasso verrà fallito il suo tratto per quanto cōporta la velocità del corso. Ma posto alchuno sopra l'arbore di detta nave, che corra quanto si vogla veloce; nō fallirà punto il suo tratto: di sorte che per dritto dal punto E. che é nella cima de l'arbore o' nella gabbia; al punto D, che é nella radice de l'arbore, o' altra parte del ventre, et corpo di detta nave, la pietra o' altra cosa grave gittata non vegna. Cossi se dal punto D al punto E alchuno che é dentro la nave gitta per dritto una pietra: quella per la medesima linea ritornerà á basso, muovasi quantosivogla la nave, pur che non faccia de gl'inchini.

SMITHO. Dalla consideratione di questa differenza s'apre la porta á molti et importantissimi secreti di natura, et profonda philosophia: Atteso che é cosa molto frequente, et poco considerata, quanto sii differenza da quel che uno medica se stesso, et quel che vien medicato da un altro: Assai ne e' manifesto che prendemo maggior piacere, et satisfactione se per propria mano venemo á cibarci, che se per l'altrui braccia. I fanciulli all'hor che possono adoprar gli proprii instrumēti per prendere il cibo, non volentieri si servono de gli altrui; quasi che la natura in certo modo gli faccia apprendere, che come non v'e' tanto piacere; non v'e' ancho tanto profitto. I fanciullini che poppano vedete come s'appigliano con la mano á la poppa? Et io giamai per latrocinio son stato si fattamente atterrito, quanto per quello d'un domestico serivitore, per che non só che cosa di ombra, et di porten[t]o apporta seco piu un familiare che un straniero, per che referisce come una forma di mal genio, et presagio formidabile.

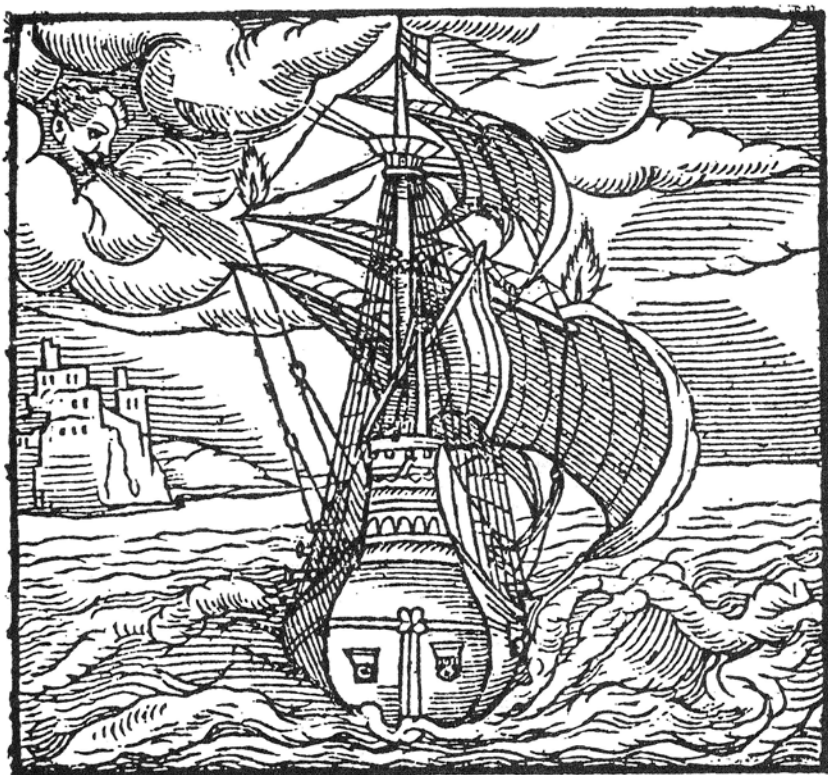
THEOPHILO. Hor per tornare al proposito. [Figure 6] Se dunque saranno dui, de quali l'uno si trova dentro la nave che corre, et l'altro fuori di quella: de quali tanto l'uno quanto l'altro habbia la mano circa il medesimo punto de l'aria; et da quel medesimo loco nel medesimo tempo anchora, l'uno lascié scorrere una pietra, et l'altro un'altra; senza che gli donino spinta alchuna: quella del primo senza perdere pūto, ne deviar da la sua linea, verrà al prefisso loco: et quella del secondo

the movement of a ship and the movement of those things which are in the ship. If this were the case, it would follow that when the ship moves rapidly through the sea nobody would ever be able to throw something from one side of it to another, nor would it be possible to make a jump and to return upright from where the jump had been taken.

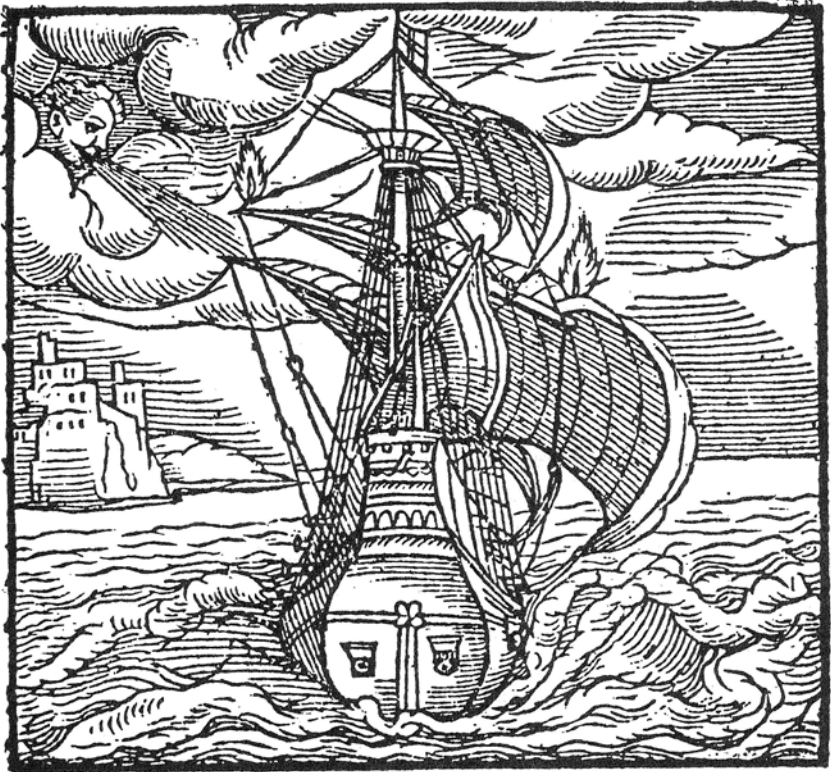
[THEOPHILUS.] Which means that all those things that are on the earth move together with the earth. If, however, from outside the earth something were to be thrown on to the earth, it would lose its rectitude because of the earth's movement. This is clear from the ship AB which is going up river. If somebody on the shore C happened to throw a stone in a straight line, it would fail to hit the ship because of the speed with which the ship was following its course. But if somebody were to be in the mast of the ship, he would hit the target however fast the ship was travelling. In that case nothing would prevent a stone or other heavy object from falling from the point E, which is at the top of the mast, or in the crow's-nest, to the point D, which is at the foot of the mast, or at a lower point in the hull or body of the said ship. So that if somebody in the ship were to throw a stone straight from point D to point E, it would fall on to its target however fast the ship was moving, provided it was not rolling.<sup>55</sup>

SMITHUS. Many important secrets of nature and of profound philosophy derive from the consideration of this difference. It is a fact that it is very frequent – and very little noticed – how great a difference there is between what one learns by oneself and what one learns from others. It is clear that we find greater pleasure and satisfaction if we feed ourselves with our own hands, rather than relying on the arms of others. Children, as soon as they are able to adopt their own spoons, feed themselves, and are impatient at using those of others. It seems almost as if nature teaches them that by doing that they would find neither as much pleasure nor as much profit in it. When babies suck at their bottle, do you not see how they tug at it with their hands? And when I myself was robbed, I have never been so upset as when it was done by one of my domestic servants. For I know not what obscure portent is foreshadowed when the person is familiar to us rather than a stranger, so that we get the impression of some evil genius or frightening threat.<sup>56</sup>

THEOPHILUS. So now, let us come back to our subject. [Figure 6] There are two men, one inside a ship that is rapidly moving, and the other outside it. Both have their hands raised to the same height in the air, at the same time and in the same place, and each of them lets a stone drop without giving it any projective force. The first one will hit its target



[Fig. 6 © The British Library Board, C.37.c.14.(2.) p. 79.]



[Fig. 6 Diagram of a moving ship in relation to a distant shore designed to illustrate Bruno's sense of the relativity of motion on a moving earth.

© The British Library Board, C.37.c.14.(2.) p. 79.]

si trovarrá tralasciata á dietro. Il che non procede da altro, eccetto che la pietra che esce dalla mano del uno che e' sustentato da la nave, et per consequenza si muove secondo il moto di quella, ha tal virtú impressa quale non há l'altra che procede da la mano di quello che n'e' di fuora, benche le pietre habbino medesima gravità, medesimo aria tramezzâte, si partano (possibil sia) dal medesimo punto, et patiscano la medesima spinta.

Della qual diversitá non possiamo apportar altra raggione, eccetto che le cose che hanno fissione o' simili appartenenze nella nave, si muovono con quella: et la una pietra porta seco la virtu del motore, il quale si muove con la nave. l'altra di quello che non há detta participatione. Da questo manifestamente si vede che non dal termine del moto onde si parte; ne dal termine dove vá, ne dal mezzo per cui si move, prende la virtu d'andar rettamente: ma da l'efficacia de la virtu primieramente impressa, dalla quale dipende la differenza tutta. Et questo mi par che basti haver considerato quanto alle proposte di Nundinio.

SMITHO. Hor domani ne revedremo per udir gli propositi che soggionse Torquato.

PRUDENTIO. Fiat.

Fine del Terzo Dialogo.

exactly, without deviating from the perpendicular, while the second will be left behind. This proceeds from nothing more than the fact that the stone which leaves the hand of the one who is supported by the ship has a virtue impressed within it, and consequently moves with the ship's movement. The stone issuing from the hand of the one who is outside the ship lacks this virtue. Obviously the stones must have the same weight, the same amount of air in between, and must leave (if that were possible) from the same point, with the same projective force.

In that case, the difference can be imputed to no other reason than that the things which are linked to the ship – or are in some relation with it – move together with the ship. Of the two, one brings with it the virtue of the mover who moves together with the ship; while the other does not benefit from such a relationship. From this it becomes clear that it is not due to the point of departure of the movement, just as it is not due to the point of arrival, that the object gains the virtue to fall perpendicularly. Nor is it due to the medium through which it moves. Rather, it is due to the strength of the virtue impressed on it before it starts. And now I think we have considered Nundinius's proposals for long enough.

SMITHUS. But let us see each other again tomorrow to consider what was added by Torquatus.

PRUDENTIUS. *Fiat.*<sup>57</sup>

End of the Third Dialogue.

## *Dialogo Quarto*

### **Smitho**

Volete ch'io vi dica la causa?

THEOPHILO. Ditela pure.

SMITHO. Perche la divina scrittura (il senso della quale ne deve essere molto raccomandato come cosa che procede da intelligenze superiori che non errano) in molti luoghi accenna, et suppone il contrario.

THEOPHILO. Hor quanto á questo credetemi che se gli Dei si fussero degnati d'insegnarci la theorica delle cose della natura: come ne han fatto favore, di proporci la pratica di cose morali: io piu tosto mi accostarei alla fede de le loro revelationi, che muovermi punto della certezza de mie raggioni, et proprii sentimenti. Ma (come chiarissimamente ogn'uno può vedere) nelli divini libri in servitio del nostro intelletto, non si trattano le demonstrationi, et speculationi, circa le cose naturali, come se fusse philosophia: ma in gratia de la nostra mente et affetto, per le leggi si ordina la pratica circa le attione morali. Havendo dunque il divino legislatore questo scopo avanti gl'occhi; nel resto non si cura di parlar secondo quella veritá per la quale non profittebbono i' volgari, per ritrarse dal male, et appigliarse al bene: ma di questo il pensiero lascia á gl'huomini contemplativi: et parla al volgo di maniera; che secondo il suo modo de intendere, et di parlare, venghi á capire quel ch'e' principale.

## *Dialogue IV*

### **Smithus**

Do you want me to tell you why?

THEOPHILUS. Yes, tell me.

SMITHUS. Because the Holy Scriptures – whose meaning is to be constantly recommended as proceeding from beings of a superior intelligence, unable to err – in many passages suggest and suppose the contrary.<sup>1</sup>

THEOPHILUS. Well, as far as that is concerned, believe me that if the gods had deigned to teach us a theory of natural things, as they have favoured us with pragmatic advice on moral issues, I would sooner align my faith with their revelations than allow myself to be persuaded by the certainty of my own reasons or sentiments. But it is plain for all to see that the divine books, which support our intellect, fail to offer philosophical demonstrations or speculation concerning natural things. Rather, they add grace to our minds and affections by ordering the practice of moral actions according to laws. Given that this is the purpose of the divine legislator, he has nothing to say concerning those truths which would be of no use in teaching the common herd to avoid what is evil and to hold on to what is good. Such things are left by him to thoughtful men, while he speaks to the common people in a way adapted to their comprehension and mode of expression. Thus they are persuaded of what is essential for their good.<sup>2</sup>



SMITHO. Certo é cosa conveniente quando uno cerca di far Istoria, et donar leggi: parlar secondo la comone intelligenza; et non esser sollecito in cose indifferenti. Pazzo sarrebe l'Istorico che trattando la sua materia, volesse ordinar vocaboli stimati novi, et riformar i' vecchi: et far di modo che il lettore sii piu trattenuto á osservarlo, et interpretarlo come gramatico, che intenderlo come Istorico.

Tanto piu uno che vuol dare à l'universo volgo la legge et forma di vivere, se usasse termini che le capisse lui solo et altri pochissimi, et venesse á far consideratione et caso, de materie indifferenti dal fine, à cui sono ordinate le leggi: certo parrebbe che lui non drizza la sua dottrina al generale et alla moltitudine per la quale sono ordinate quelle; ma á savii, et generosi spirti, et quei che sono veramente huomini, li quali senza legge fanno quel che conviene: per questo disse Alchazele philosopho, sômo pontefice et Theologo Mahumetano: che il fine delle leggi non é tanto di cercar la veritá delle cose, et speculationi; quanto la bontá de costumi, profitto della civilitá, convitto di popoli; et pratica per la commoditá della humana conversatione, mantenimento di pace, et aumento di Repupliche. Molte volte dunque, et á molti propositi, e' una cosa da stolta et ignorante, piu tosto riferir le cose seconda la veritá; che secondo l'occasione et comoditá.

Come quando il sapiente disse Nasce il sole et tramonta, gira per il mezo giorno, et s'inchina á l'Aquilone: havesse detto, la terra si raggira á l'oriente, et si tralascia il sole che tramonte, s'inchina á doi tropici del Cancro verso l'Austro; et Capricorno verso l'Aquilone: Sarrebbero fermati gl'auditori á considerare, come costui dice la terra muoversi? che novelle son queste? l'harebbono al fine stimato un pazzo, et sarebbe stato da dovero un pazzo.

Pure per satisfare á l'importunitá di qualche Rabbino impatiente, et rigoroso: vorrei sapere se col favore della medesima scrittura questo che diciamo si possa confirmare facilissimamente.

SMITHUS. When attempting to influence the course of history or to lay down laws, it is no doubt extremely useful to speak according to the intelligence of the common people, without raising points indifferent to them. In writing about his subject, the historian would be mad if he attempted to create new words or to reform old ones. If he did that, his reader would be more likely to observe and interpret him as a grammarian than to appreciate him as a historian.

Similarly, someone who wishes to impart to the common people the lawful way of living their lives should not use terms which only he – together with a few others – can understand. For if he were to start speculating about affairs which have nothing to do with the reasons which give rise to those laws, it would seem as if he was unconcerned with general doctrine or with the multitude for which such laws are passed. He would appear to be thinking more of those wise and generous spirits who truly deserve the name of men, and who do what is right without the need for laws. For this reason the philosopher Al-Gazali, a Mahometan high priest and theologian, said that the end of laws is not so much to search for the truth of things and ideas as to further the rightness of customs, the pleasures of civilization and peace between peoples; to practise civil conversation; to maintain order and increase republics.<sup>3</sup> So that very often, when dealing with many different subjects, it is unrefined and unintelligent to insist on some bare truth rather than adapting one's discourse to the occasion, and to the circumstances.

Take the example of the wise man who said: "The sun riseth and goeth down, turneth toward the south and boweth to the north wind."<sup>4</sup> Supposing he had said: "The earth turns to the east, leaving behind it the setting sun; it bows to the two tropics, that of Cancer towards the south and of Capricorn towards the north." Those listening to him would have stopped to ask: "What does this man mean by saying that the earth moves? What novelty is this?" They would have thought he was mad; and indeed, he would have been mad. To placate the anger of some impatient and painstaking Rabbi, I wonder whether it is possible to confirm what we are saying now by referring to the Scriptures themselves.

THEOPHILO. Vogliono forse questi reverendi, che quando Mose disse che Dio tra gl'altri luminari ne hà fatti dui grandi, che sono il sole et la luna: questo si debba intendere assolutamente per che tutti gl'altri siino minori della luna: o' veramente secondo il senso, volgare, et ordinario modo di comprendere et parlare? Non sono tanti astri piu grandi che la luna? non possono essere piu grandi che il sole? che manca a' la terra, che non sii un luminare piu bello, et piu grande che la luna, che medesimamente ricevendo nel corpo de l'Oceano et altri mediterranei mari il gran splendore del sole; può comparir lucidissimo corpo a' gl'altri mondi chiamati astri: non meno che quelli appaiono a' noi tante lampeggianti faci?

Certo che non chiami la terra un luminare grande o' piccolo, et che tali dichi essere il sole et la luna, é stato bene et veramente detto nel suo grado, perche dovea farsi intendere secondo le paroli et sentimenti comoni: et non far come uno che qual pazzo et stolto, usa della cognitione et sapienza. Parlare con i' termini de la veritá dove non bisogna: e' voler che il volgo et la sciocca moltitudine dalla quale si richiede la prattica; habbia il particular intendimento: sarrebe come volere che la mano habbia l'ochio la quale non é stata fatta dalla natura per vedere, ma per oprare, et consentire á la vista. Cossi benche intendesse la natura delle sustanze spirituali: a' che fine dovea trattarne, se non quanto che alchune di quelle hanno affabilitá, et ministerio con gl'huomini, quando si fanno ambasciatrici? Benche havesse saputo che alla luna et altri corpi mondani che si veggono, et che sono á noi invisibili, convenga tutto quel che conviene á questo nostro mondo, o' al meno il simile: vi par che sarrebbe stato ufficio di legislatore di prenderse, et donar questi impacci á popoli? Che hà da far la prattica delle nostre leggi, et l'essercitio delle nostre virtu con quell'altri? Dove dunque gl'huomini divini parlano presupponendo nelle cose naturali il senso comunmente ricevuto, non denno servire per authoritá: ma piu tosto dove parlano indifferentemente, et dove il volgo non há resolutione alcuna: in quello voglio che s'habbia riguardo alle parole de gl'huomini divini, ancho á gl'enthusiasmi di Poeti, che con lume superiore ne han parlato: et non prendere per methaphora quel che non e' stato detto per methaphora: et per il còtrario prendere per vero quel che é stato detto per similitudine. Ma questa distintione del methaphorico et vero, non tocca á tutti di volerla comprendere: come non é dato ad ogni uno di posser la capire.

THEOPHILUS. Do these reverend gentlemen want Moses – when he said that amongst all the luminous bodies God had created two great ones, the sun and the moon – to have meant in absolute terms that all the others were smaller than the moon? Or do they consider him to have spoken according to a general perception, in the usual way of understanding and speaking of such things?<sup>5</sup> Are there not many heavenly bodies greater than the moon? Or than the sun? What is lacking in the earth to make it a luminous body more beautiful and bigger than the moon, receiving in the expanses of its oceans and its other inland seas the magnificent splendour of the sun, so that it appears to other worlds called stars as a luminous body, just as they appear to us as so many flashing torches?

Undoubtedly, the fact that he fails to call the earth a luminous body, either great or small, while he refers in such terms to the sun and the moon, is well said in the circumstances; because he had to make himself understood according to common sentiments and words, and not make use of his knowledge and wisdom like a madman or a fool. To speak in terms of truth where it is not requisite to do so, and to wish that the foolish and ignorant multitude whose obedience he wishes to assure were able to understand such particulars, would be like wishing that the hand possessed an eye. But the hand has not been made by nature in order to see, but in order to do, in collaboration with sight. And so, although Moses understood the nature of spiritual substances, why should he have wished to talk about them, except in so far as some of them are close to the world of men and minister to them, becoming intermediaries? Even if he had known that the moon and other heavenly bodies, both visible and invisible, are essentially the same as this world of ours, or at least similar to it, do you really think that it was his duty as a legislator to present such conundrums to the people?<sup>6</sup> What do obedience to our laws or the exercise of our virtues have to do with such things? So, when divine men speak of natural things on the basis of general assumptions, or according to received wisdom, they must not be taken as authorities on the subject. Rather they should be listened to when they speak objectively, in a context which has nothing to do with the vulgar herd. Those are the moments when the words of divine men should be heeded, as should the outpourings of poets. For then they speak words of superior wisdom, not taking as metaphor that which was not said metaphorically, nor, on the contrary, taking as truth that which was said as a similitude. But it is not easy for everybody to understand this distinction between metaphor and truth, or to know what it means.

Hor se voglamo voltar l'occhio della consideratione á un libro contemplativo, naturale, morale, et divino: noi troveremo questa philosophia molto favrita, et favorevole. Dico ad un libro di Giob, quale é uno di singularissimi che si possan leggere, pieno d'ogni buona theologia, naturalit , et moralit , colmo di sapientissimi discorsi, che Mose come un sacramento h  congiunto   i' libri della sua legge. In quello un di personaggi volendo descrivere la provida potenza de Dio: disse quello formar la pace ne gl'emin ti suoi, cio  sublimi figli, che son gl'astri, gli Dei, de quali altri son fuochi, altri sono acqui (come noi diciamo altri soli, altri terre) et questi concordano: per che quantumque, siino contrarii, tutta via l'uno vive, si nutre et vegeta, per l'altro; mentre non si confondono insieme; ma con certe distanze gl'uni si moveno circa gl'altri. Cossi vien distinto l'universo in fuoco, et acqua che sono soggetti di doi primi principii formali et attivi, freddo, et caldo. Qu  corpi che spirano il caldo son gli soli che per se stessi son lucenti et caldi: que corpi che spirano il freddo, son le terre; le quali essendo parimente corpi etherogenei son chiamate piu tosto acqui, atteso che tai corpi per quelle si fanno visibili, onde meritamente le nominiamo da quella ragione che ne sono sensibili: sensibili dico non per se stessi: ma per la luce de soli sparsa ne la lor faccia. A' questa dottrina e' conforme Mose, che chiama firmamento l'aria, nel quale tutti questi corpi hanno la persistenza et situatione, et per gli spaci del quale vengono distinte et divise le acqui inferiori, che son queste che sono nel nostro globo; da l'acqui superiori che son quelle de gl'altri globi, dove pure se dice, esseno divise l'acqui da l'acqui . Et se ben considerate molti passi della scrittura divina, gli Dei et ministri de l'altissimo s  chiamati, acqui, abissi, terre, et fiamme ardenti. chi lo impediva che non chiamasse corpi neutri, inalterabili, immutabili, quinte essenze, parti piu dense delle sphere, berilli, carbuncoli, et altre phantasie de le quali come indifferenti niente manco il volgo s'harrebe possuto pascere?

SMITHO. Io per certo molto mi muovo da l'authorit  del libro di Giobbe et di Mose et facilmente posso fermarmi in questi sentimenti reali piu tosto che in methaphorici et astratti: se non che alchuni pappagalli d'Aristotele, Platone, et Averroe dalla philosophia de quali son promossi poi ad esser Theologi: dicono che questi sensi son metaphorici, et cossi in virtu de loro methaphore le fanno significare tutto quel che gli piace, per gelosia della philosophia nella quale s  allevati.

If we should now wish to turn our attention to a contemplative book which is natural, moral, and divine, we will find such philosophy much favoured and favourable. I mean the Book of Job, which is one of the most remarkable that it is possible to find, full of good theology, natural and moral philosophy: a mine of wise speeches, which Moses has added to the books of his laws as if it were a sacrament. In that book, one of the characters, wishing to describe the providential power of God, says that “he maketh peace in his high places” – that is, among his sublime sons – which are the stars or the gods, some of which are made of fire, others of water (in the same way as we say that some are suns, others earths), and that they are in harmony with one another.<sup>7</sup> For although they are of opposite natures, nevertheless every one of them lives, nourishes itself, and vegetates for or through another. Yet they never clash. Rather, they move around each other at fixed distances, so that the universe is separated into fire and water, which result from the two formal and active first principles, cold and heat.<sup>8</sup> Those bodies that emit heat are the suns, which in themselves are glowing and hot. Those bodies that emit cold are earths, which, being also heterogeneous, are often called waters in so far as such bodies are rendered visible by their waters, or by the light of suns shining on their surfaces. So they deserve to be named according to the cause which makes them visible. Moses adheres to this doctrine when he calls the air “firmament,” in which all these bodies find their duration and their situation, and within whose space are divided and distinguished the inferior waters, which are those of our own globe, from the superior ones, which are those of other globes.<sup>9</sup> In the same place, he says that the waters are divided from the waters. And if you consider carefully many passages of the divine Scriptures, you will find that the gods and ministers of the Almighty are called “waters,” “abysses,” “earths,” and “ardent flames.” What prevented Him from calling them “neutral, inalterable, immutable bodies,” “fifth essences,” “the densest parts of spheres,” “orbs,” “carbuncles,” and other such fantasies, which, being indifferent terms, the multitude would have fed on willingly?

SMITHUS. I too attribute great authority to the Book of Job and to Moses, and I have no difficulty in interpreting them in terms of their true opinions rather than in terms of metaphors or abstractions. The trouble is that a number of people parroting Aristotle, Plato, and Averroes, on the basis of whose philosophy they consider themselves theologians, claim that such meanings are really metaphorical. And so by the virtue of metaphors, they manage to make these passages assume whatever sense they like, being jealous partisans of the philosophy in which they were trained.<sup>10</sup>

THEOPHILO. Hor quanto siino costante queste methaphore, lo possete giudicar da questo che la medesima scrittura e' in mano di Giudei, Christiani, et Mahumetisti, sette tanto differenti, et contrarie, che ne parturiscono altre innumerabili contrarissime, et differentissime, le quali tutte vi fan trovare quel proposito che gli piace, et meglio li vien comodo: non solo il proposito diverso, et differente, ma anchor tutto il contrario, facendo de un Sí, un Non, et di un Non, un Sí. come verbigratia in certi passi dove dicono che dio parla per Ironia.

SMITHO. Lasciamo di giudicar questi, son certo che á loro non importa che questo sii, o' non sii methaphora: però facilmente ne potranno far star in pace con nostra philosophia.

THEOPHILO. Dalla censura di honorati spirti, veri religiosi, et ancho naturalmente huomini da bene, amici dalla civile conversatione, et buone dottrine: non si dé temere. perche quando bene harran considerato trovarranno, che questa philosophiá non solo contiene la veritá, ma anchora favorisce la religione piu che qualsivogla altra sorte de philosophia. Come quelle che poneno il mondo finito, L'effetto et l'efficacia della divina potenza finiti, le intelligenze et nature intellettuali solamente otto o' diece, La sustanza delle cose esser corrottile, L'anima mortale, come che consista piu tosto in una accidentale dispositione, et effetto di complessione, et dissolubile temperamento, et armonia, L'esecuzione della divina giustitia sopra l'attioni humane per conseguenza nulla, La notitia di cose particolari a' fatto rimossa dalle cause prime et universali. Et altri inconvenienti assai, li quali non solamente come falsi acciecano il lume de l'intelletto: ma anchora, come neghittosi, et empíi smorzano il fervore di buoni affetti.

SMITHO. Molto sono contento di haver questa informatione della philosophia del Nolano. Hor veniamo un poco a' gli discorsi fatti col dottor Torquato; il quale son certo che non può essere tanto piu ignorante che Nundinio; quanto e' piu presuntuoso, temerario, et sfacciato.

FRULLA. Ignoranza et arroganza son due sorelle individue in un corpo et in un'anima.

THEOPHILO. Costui con un'emphatico aspetto, col, quale il divum Pater vien descritto nella Metamorphose seder in mezzo del concilio de gli Dei, per fulminar quella severissima sentenza contra il profano Licaone; dopo haver contemplato la sua aurea collana.

PRUDENTIO. Torquem auream, aureum monile.

THEOPHILUS. And just how constant these metaphors are can be judged by the fact that the same scriptures are in the hands of Jews, Christians, and Muslims: sects which are so different and contrary to each other that they give birth to others which are innumerable, conflicting, and even more different. Nevertheless they manage to discover in these metaphors whatever intentions they find congenial and pleasing. Not only are the meanings varied and different, but at times they are quite contrary; so that a “yes” becomes a “no,” and a “no” a “yes”: as, for example, in certain passages where they say that God is speaking ironically.

SMITHUS. I think we have criticized these people enough now. Certainly they care little if something is or is not metaphorical; so that they should easily be able to reconcile anything with our philosophy.

THEOPHILUS. There is no need to fear the criticism of honourable minds, of the truly religious, or – naturally – of virtuous people, who are friends of civil conversation and good doctrine. For once they have considered the matter carefully, they will find this philosophy of ours not only true, but also more favourable to the true religion than any other philosophy. I mean those people who posit a finite universe, the finite effect and influence of the divine power, or who think that the intelligences and divine natures are only eight or ten. Then there are those who believe the substance of things to be corruptible, or the soul mortal, as if it consisted in an accidental disposition, or effect of composition, its temper and harmony being subject to dissolution. Consequently they believe the action of divine justice in human affairs to be nil, and the details of particular things to be far removed from the first and universal cause. There are others who hold equally unreasonable beliefs. With these false ideas they blind the light of the intellect: furthermore, such carping and impious men dampen the vehemence of proper sentiments.<sup>11</sup>

SMITHUS. I am well satisfied with this information regarding the Nolan’s philosophy. – But now, I would like to return to his conversation with Dr Torquatus. For I am certain that the latter’s ignorance cannot outdo that of Nundinius as much as his arrogant and shameless presumption does.

FRULLA. Ignorance and arrogance are two inseparable sisters combined in one body and one soul.

THEOPHILUS. He assumed a grave expression, like the one in the description of the *divum pater*<sup>12</sup> in the *Metamorphoses*, when Jupiter sits in the centre of the council of the gods, and thunders out that severe sentence on the profane Lycaon.<sup>13</sup> Then, after gazing at his golden chain ...

PRUDENTIUS. *Torquem auream, aureum monile.*<sup>14</sup>



THEOPHILO. Et appresso remirato al petto del Nolano, dove piu tosto harrebe possuto manchar qualche bottone. Dopo essersi rizzato, ritirate le braccia da la mensa, scrollatosi un poco il dorso, sbruffato có la bocca alquanto, acconciatasi la beretta di velluto in testa, intorcigliatosi il mustaccio, posto in arnese il profumato volto, inarcate le ciglia, spalancate le narici, messosi in punto con un riguardo di rovescio, poggiate al sinistro fianco la sinistra mano; per donar principio alla sua scrima, appuntó le tre prime dita della destra insieme, et cominciò a' tra di mandritti, in questo modo parlando. Tune ille philosophorum protoplastes? Subito il Nolano sospettando di venire ad altri termini che di disputatione gl'interroppe il parlare dicendogli. Quo vadis domine, quo vadis? quid si ego philosophorum protoplastes? quid si nec Aristoteli nec cuiquam, magis concædam, quam mihi ipsi concesserint? ideo ne terra est centrum mundi immobile? cò queste et altre simili persuasioni con quella maggior pazienza che posseva l'essortava á portar propositi, con i' quali potesse inferire dimostrativa ò probabilmente in favore de gl'altri protoplasti? contra di questo novo protoplaste. Et voltatosi il Nolano á gli circostanti ridendo con mezo riso. Costui (disse) non é venuto tanto armato di ragioni quanto di paroli, et scommi, che si muoiono di freddo et fame. Pregato da tutti che venesse á gl'argumenti. Mandó fuori questa voce, unde igitur stella Martis nunc maior, nunc veró minor apparet; si terra movetur?

SMITHO. O Archadia, é possibile che sii in rerum natura, sotto titolo di filosofo et medico.

FRULLA. Et dottore, et torquato.

SMITHO. Che habbia possuto tirar questa conseguenza? Il Nolano che rispose?

THEOPHILO. Lui non si spantò per questo: ma gli rispose che una delle cause principali per le quali la stella di Marte appare maggiore et minore, á volte á volte, é il moto della terra, et di Marte anchora, per gli proprii circoli, onde aviene che hora siino piu prossimi; hora piu lontani.

SMITHO. Torquato che soggionse?

THEOPHILO. Dimandó subito della proportion de moti degli pianeti et la terra.

SMITHO. Et il Nolano, hebbe tanta pazienza che vedendo un si presuntuoso et goffo, non voltò la spalli et andarsene a casa, et dire à colui che l'havea chiamato che. .

THEOPHILUS. ... and glancing at the Nolan's chest – where he was more likely to find a button missing than anything else – and after he had drawn himself up, taken his arms off the table, shrugged his shoulders a little, puffed and pouted with his mouth several times, arranged his velvet cap properly on his head, turned up his moustaches, carefully composed his perfumed face, raised his eyebrows, enlarged his nostrils, settled himself with a glance on either side, and rested his left hand on his left side, he began to give vent to his feelings. He did this by placing the first three fingers of his right hand together and wagging them back and forth, while saying: “*Tune ille philosophorum protoplastes ... ?*”<sup>15</sup> Fearing that the outcome might go beyond the terms of a debate, the Nolan interrupted what he was saying with these words: “*Quo vadis domine, quo vadis? Quid si ego philosophorum protoplastes? quid si nec Aristoteli nec cuiquam magis concedam, quam mihi ipsi concesserint? ideo ne terra est centrum mundi immobile?*”<sup>16</sup> With this and other similar words of persuasion, as patiently as he could, the Nolan tried to convince him to make some propositions which he could then argue demonstratively or probably, in favour of the other original philosophers and against this one. And turning round, half laughingly, towards the other guests, the Nolan said: “This man has not come here armed with reasons but with words and jokes, which are dying of hunger and cold.” All of them beseeched Torquatus to come to the point, so that he finally gave vent to these words: “*Unde igitur stella Martis nunc maior, nunc vero minor apparet, si terra movetur?*”<sup>17</sup>

SMITHUS. O what Arcadian ignorance! Is it possible that *in rerum natura*,<sup>18</sup> with the title of philosopher and doctor ...

FRULLA. And a doctor wearing a chain.

SMITHUS. ... that he should arrive at such a conclusion? What was the Nolan's reply?

THEOPHILUS. He was not at all disconcerted. He replied that one of the principal causes which makes Mars appear greater or less, from time to time, is the motion of the earth added to that of Mars itself, around their differing orbits. For this reason sometimes they are close together, and at others far apart.<sup>19</sup>

SMITHUS. What did Torquatus say to that?

THEOPHILUS. He suddenly asked about the relative motion of the planets with respect to the earth.

SMITHUS. And the Nolan was patient enough, in the face of someone so rude and presumptuous, not to turn away and leave the house, saying to the person who had invited him that ...

THEOPHILO. anzi rispose che lui non era andato per leggere ne per insegnare, ma per rispondere: et che la simmetria, ordine, et misura de moti celesti si presuppone tal qual'è, et è stata conosciuta da antichi et moderni: et che lui non disputa circa questo, et non è per litigare contra gli Mathematici per togliere le lor misure et Theorie, alle quali sottoscrive, et crede. Ma il suo scopo versa circa la natura et verificatione del soggetto di questi moti. Oltre disse il Nolano se io metterò tempo per rispondere a questa dimanda; noi staremo quã tutta la notte senza disputare, et senza ponere giamai gli fondamenti delle nostre pretensioni contra la comone philosophia. perche tanto gl'uni quanto gl'altri condoniamo tutte le suppositioni; pur che si conchiuda la vera ragione delle quãtità, et qualità di moti; et in questi siamo concordi, a' che dunque beccarse il cervello fuor di proposito? Vedete voi se dalle osservanze fatte et dalle verificationi concesse possiate inferire qual che cosa che conchiuda contra noi: et poi harrete libertà di profere le vostre condannationi.

SMITHO. Bastava dirgli che parlasse á proposito.

THEOPHILO. Hor quã nessuno di circostanti fú tanto ignorante, che col viso et gesti non mostrasse haver capito che costui era una gran peccoraccia aurati ordinis.

FRULLA. Idest il tostone:

THEOPHILO. Pure per imbroglar il negocio, pregorno il Nolano che esplicasse quello che lui volea defendere, per che il profato Dottor Torquato argumentarebbe. Rispose il Nolano che lui s'havea troppo esplicato; et che se gl'argumenti de gl'avversarii erano scarsi: questo non procedeva per difetto di materia, come puó essere á tutti ciechi manifesto. Pure di nuovo gli confermava che L'universo e' infinito. Et che quello costa d'una immensa etherea reggione. E' veramente un cielo il quale e' detto spacio et seno, in cui sono tanti astri che hanno fissione in quello, non altrimenti che la terra. Et cossi la luna il sole et altri corpi innumerabili sono, in questa etherea reggione, come veggiamo essere la terra. Et che non e' da credere altro firmamento, altra base, altro fundamento ove s'appoggino questi grandi animali che concorreno alla constitution del mondo. Vero soggetto, et infinita materia della infinita divina potenza attuale: come bene ne há fatto intendere tanto la regolata ragione et discorso: quanto le divine revelationi che dicono nõ essere numero de ministri del'Altissimo, al quale miglaia de miglaia assistono, et diece centinaia de miglaia gl'amministrano. Questi sono gli grandi animali de quali molti con lor

THEOPHILUS. On the contrary, he replied that he had not gone there either to lecture or to teach, but rather to defend himself. He had no intention of arguing about the symmetry, order, and measurements of the movements of the heavenly bodies, which he accepted as such, according to the observations of the ancients and the moderns. He had no intention of arguing with the mathematicians over their measurements or their calculations, with which he was quite prepared to agree. His purpose was rather to question the nature and verify the causes of these movements. And the Nolan added: "If I take time to answer this question, we will be here all night without discussing and without considering the bases on which our objections to the common philosophy are founded. For both sides can accept all the hypotheses, and agree on them, in order that the quantity and quality of the movements are ascertained. In that case, why worry over something which is not the question being discussed? Try and see whether, from the known observations and the agreed calculations, you can reach any conclusion which refutes us: in that case, you will be free to advance your objections."<sup>20</sup>

SMITHUS. It would have been sufficient to tell him to keep to the subject.

THEOPHILUS. But actually nobody in that company was so ignorant as not to express in their faces and gestures their awareness that this man was really an old ram *aurati ordinis*.<sup>21</sup>

FRULLA. *Idest*<sup>22</sup> with a golden fleece.

THEOPHILUS. At that point, in order to confuse the issue, they asked the Nolan to explain what it was that he wanted to defend, so that the aforesaid Dr Torquatus could argue against him. The Nolan replied that he had already explained himself more than enough, and that if the arguments of his adversaries were thin, it was not for lack of material, as even a blind man could see. And so once again he repeated that the universe is infinite; that it consists of an immense, ethereal region; that it is really one sky called space, or a container, in which many stars are situated just like the earth, the moon, the sun, and other innumerable bodies which inhabit that ethereal region in the same way as the earth does. So there is no need to believe in another firmament, another basis or foundation on which to place these huge animated creatures which contribute to the constitution of the world. For they are the true subject and infinite matter of the infinite divine active power; and both ordered reason and speech agree on this, as well as divine revelation, which says that the ministers of the Almighty are innumerable, consisting of thousands upon thousands – and He is waited on by tens of hundreds and thousands.<sup>23</sup> These are the great living creatures,

chiaro lume che da lor corpi diffondeno: ne sono di ogni contorno sensibili. De quali altri son effettivamente caldi come il sole et altri innumerabili fuochi. Altri sō freddi, come la terra, la luna, venere, et altre terre innumerabili. Questi per comunicar l'uno á l'altro; et participar l'un da l'altro il principio vitale, á certi spacci, con certe distanze, gl'uni compiscono gli lor giri circa gl'altri, come e' manifesto in questi sette, che versano circa il sole, de quali la terra e' uno che muovēdosi circa il spacio di 24. hore dal lato chiamato Occidente verso l'Oriente: caggiona l'apparenza di questo moto del'universo circa quella, che e' detto moto mundano, et diurno.

La quale imaginatione e' falsissima, contra natura, et impossibile: essendo che sii possibile, conveniente, vero, et necessario, che la terra si muova circa il proprio centro per participar la luce et tenebre, giorno et notte, caldo et freddo.

Circa il sole per la participatione de la Primavera, Estade, Autunno, Inverno. Verso i' chiamati poli, et oppositi punti hemisphericici: per la rinovatione di secoli, et cambiamento del suo volto; a' fin che dove era il mare, sii l'arida: ove era torrido, sii freddo; ove il tropico, sii l'equinottiale: et finalmente sii de tutte cose la vicissitudine, come in questo; cossí ne gl'altri astri, non senza raggione da gl'antichi veri philosophi chiamati mondi.

Hor mentre il Nolano dicea questo: il dottor Torquato cridava. Ad rem. Ad rem. Ad rem. Al fine il Nolano se mise á ridere, et gli disse, che lui non gli argomentava, ne gli rispondeva; ma che gli proponeva: et però ista sunt Res. Res. Res. et che toccava al Torquato appresso de apportar qualche cosa Ad rem.

SMITHO. Perche questo asino si pensava essere trà goffi et balordi, credeva che quelli passassero questo suo Ad rem, per uno argomento, et determinatione: et cossi un semplice crido còla sua cathena d'oro satisfar alla moltitudine.

THEOPHILO. Ascoltate d'avantaggio. Mentre tutti stavano ad aspettar quel tanto desiderato argomento; ecco che voltato il dottor Torquato á gli commensali, dal profondo della sufficienza sua sguaina et gli viene á donar sul mostaccio uno adagio Erasmiano ANTICIRAM NAVIGAT.

SMITHO. Non possea parlar meglio un'asino, et non possea udir altra voce chi vá á praticar con gl'asini.

many of them visible on all sides by means of the clear light which emanates from their bodies. Some of them are effectively hot, like the sun and other innumerable fiery bodies; while others are cold, like the earth or the moon, Venus, and other innumerable earths. In order to communicate with each other, and to share the vital principle, some of them orbit around the others within a certain space and at certain distances. This is clearly shown by these seven which move around the sun: one of them being the earth, which revolves from west to east in the space of 24 hours, giving rise to the apparent motion of the universe around it. This we call the mundane or daily motion.

Such apparent motion is quite false, unnatural, and impossible. On the contrary, it is possible, reasonable, true, and necessary that the earth revolves around its own centre in order to participate in light and shadow, day and night, heat and cold.

It moves around the sun in order to participate in spring, summer, autumn, and winter. For renewal over the centuries and changes over its surface, the earth moves around what are called its poles and its antipodes. This is necessary in order that there should be land where there was sea, cold where it was torrid, a tropical climate where there was an equinoctial one, and in all things incessant change. In the other stars, called by the ancient and true philosophers – not without reason – “worlds,” the same thing happens as on earth. Now, while the Nolan was saying this, Dr Torquatus was crying out: “*Ad rem, ad rem, ad rem.*”<sup>24</sup> In the end the Nolan began to laugh, and said to him that it was not his intention to argue, or to answer back, but rather to put forward propositions; and so “*Ista sunt res, res, res.*”<sup>25</sup> It was up to Torquatus now to say something *ad rem*.<sup>26</sup>

SMITHUS. The fact is that this ass thought that he was among oafs and dolts, who would accept this “*ad rem*”<sup>27</sup> of his for an argument or a proof. He thought that a simple cry, and his gold chain, were enough to satisfy the masses.

THEOPHILUS. Listen to more of this. While everybody was waiting to hear that argument produced which they all desired, behold Dr Torquatus turning towards the dinner guests and drawing forth from the depths of his arrogance an Erasmian adage that got caught up in his moustache: “*Anticiram navigat.*”<sup>28</sup>

SMITHUS. An ass could not have spoken better, and anyone who keeps company with asses is unlikely to hear more than that.

THEOPHILO. Credo che prophetasse (benche non intendesse lui medesimo la sua profetia) che il Nolano andava á far provisione d'Elleboro per risaldar il cervello á questi pazzi barbareschi.

SMITHO. Se quelli che v'eran presenti come erano civili, fussero stati civilissimi: gl'harrebbono attaccato in loco della collana un capestro al collo; et fattogli contar quaranta bastonate in commemoratione del primo giorno di quaresima.

THEOPHILO. Il Nolano gli disse che il dottor Torquato lui non era pazzo, per che porta la collana, la quale se non havesse á dosso, certamente il dottor Torquato non valerebe piú che per suoi vestimenti, i' quali però vaglono pochissimo se á forza di bastonate non gli sarran spolverati sopra. Et con questo dire si alzó di tavola, lamentandosi ch'il signor Folco non havea fatto provisione de meglor suppositi.

FRULLA. Questi son i' frutti d'Inghilterra: et cercatene pur quanti volete; che le troverete tutti dottori in gramatica, in questi nostri giorni: ne quali in la felice patria regna una costellatione di pedantesca ostinatissima ignoranza et presuntione: mista con una rustica inciviltá che farebbe prevaricar la pazienza di Giobbe, et se non il credete. Andate in Oxonia et fatevi raccontar le cose intravenute al Nolano. quando pubblicamente disputó con qué dottori in Theologia in presenza del Prencipe Alasco Polacco, et altri della nobiltá Inglesa. fatevi dire come si sapea rispondere á gli argomenti? come restó per quindecì syllogismi, quindecì volte qual pulcino entro la stoppa quel povero dottor: che come il Coripheo dell'Achademia ne puosero avanti in questa grave occasione? Fatevi dire con quanta inciviltá et discortesía procedea quel porco, et con quãta pazienza et humanitá quell'altro che in fatto mostrava essere Napolitano nato, et allevato sotto piu benigno cielo? Informatevi come gl'han fatte finire le sue publiche letture, et quelle de immortalitate animæ, et quelle de quintuplici sphaera?

SMITHO. Chi dona perle á porci non si dé lamentar se gli son calpestrate. Hor sequitate il proposito del Torquato.

THEOPHILO. Alzati tutti di tavola, vi furono di quelli che in loro linguaggio accusavano il Nolano per impatiente, invece che doveano haver piu tosto avanti gl'occhi la barbara et salvatica discortesía del Torquato et propria. Tutta volta il Nolano che fá professione di vincere in cortesía quelli, che facilmente posseano superarlo in altro: se rimesse; et come havesse tutto posto in oblio disse amichevolmente al Torquato.

THEOPHILUS. I think that he was prophesying, without understanding his own prophecy, that the Nolan was going to gather hellebore in order to heal the brains of these mad barbarians.

SMITHUS. If those present had been really polite rather than being just a little polite, they would have hung a rope around his neck in place of his chain. Then they would have inflicted forty blows on him with a cane to commemorate the first day of Lent.

THEOPHILUS. The Nolan said that Dr Torquatus was not mad, because he was wearing a chain: and that without a chain, Dr Torquatus would certainly not have been worth more than his clothes. Even these would be worth very little after a caning, if they were not well brushed.<sup>29</sup> With these words, he rose from the table grumbling that Sir Fulke could have supplied better company.

FRULLA. These are the fruits of England; and nowadays, however well you search, you will find them all to be doctors in grammar. For in this happy land there reigns a constellation of pedantic and obstinate ignorance and arrogance, mixed with rustic incivility, which would try the patience of Job. If you do not believe me, go to Oxford and get someone to tell you what happened to the Nolan there, when he disputed publicly with those doctors of theology in the presence of the Polish Count Laski, and other English noblemen. Have them tell you how he answered their arguments, and how that poor doctor, whom they put forward on that solemn occasion as the star of the Academy, was floored by him fifteen times with fifteen syllogisms, like a chick in the chaff. Have them tell you how uncivil and rude that swine was, and how much patience and humanity was shown by his opponent, who behaved like a true Neapolitan, born and raised under a more gentle sky. Find out from them how they interrupted his public lectures, both those *de immortalitate animae* and those *de quintuplici sphaera*.<sup>30</sup>

SMITHUS. Whoever casts pearls before swine should not complain when they are trodden under foot. Now continue with Torquatus's arguments.

THEOPHILUS. Once everybody had risen from table, some of them started to accuse the Nolan of impatience, while really they should have been concerned with their own rudeness and incivility, and that of Torquatus. In any case, the Nolan, who likes to think that he surpasses in courtesy those who are easily able to surpass him in other things, sat down again; and, as if he had forgotten all about it, said in a friendly tone to Torquatus:



Non pensar fratello ch'io per la vostra opinione vogla o' possa esservi nemico: anzi vi son cossi amico, come di me stesso. Per il che voglo che sappiate, ch'io prima ch'havesse questa positione per cosa certissima: alchuni anni á dietro la tenni semplicemente vera: Quando ero piu giovane, et men savio, la stimai verisimile. Quando ero piu principiante nelle cose speculative, la tenni si fattamēte falsa, che mi maraviglavo d'Aristotele che non solo non si sdegnó di farne consideratione: ma ancho spese piu de la mittà del secondo libro del cielo, et mondo, forzandosi dimostrar che la terra non si muova. Quando ero putto, et á fatto senza intelletto speculativo, stimai che creder questo era una pazzia, et pensavo che fusse stato posto avanti da qualchuno, per una materia sophistica, et captiosa, et exercitio di quelli ociosi ingegni, che voglono disputar per gioco, et che fan professione di provar et defendere che il bianco e' nero. Tanto dunque io posso odiar voi per questa caggione, quanto me medesimo quando ero piu giovane, piu putto, men saggio, et men discreto. Cossi in loco ch'io mi devrei adirar con voi, vi compatisco: et priego Idio che come hà donato á me questa cognitione, cossi (se non gli piace di farvi capaci del vedere,) al meno vi faccia posser credere che sete ciechi, et questo non sara poco per rendervi piu civili, et cortesi, meno ignoranti, et temerarii. Et voi anchora mi dovete amare se nō come quello che sono al presente piu prudente, et piu vecchio; al meno come quel che fui piu ignorate, et piu giovane, quando ero in parte ne gli miei piu teneri anni, come voi sete in vostra vecchiaia. Voglo dire che quantumque mai son stato conversando et disputando cossi salvatico, mal creato, et incivile, son stato però un tempo ignorante come voi.

Cossi havendo io riguardo al stato vostro presente, conforme al mio passato; et voi al stato mio passato, conforme al vostro presente: io vi amarò, et voi non m'odiarete.

SMITHO. Essi (poi che sono entrati in un'altra specie di disputatione) che dissero à questo?

THEOPHILO. In conclusione che loro erano compagni di Aristotele di Tolomeo, et molti altri dottissimi philosophi; et il Nolano soggiunse che sono innumerabili sciocchi, insensati, stupidi, et ignoratissimi, che in cio sono cōpagni nō solo di Aristotele et Tolomeo: ma di essi loro anchora: i' quali non possono capire quel che il Nolano intende, con cui non sono ne possono esser molti consentienti; ma solo huomini divini et sapientissimi come Pithagora, Platone, et altri. Quanto poi alla moltitudine che si gloria d'haver philosophi dal canto suo; vorrei che

“My friend, do not think that I want or ever could be your enemy on account of your opinions. On the contrary, I am as much a friend to you as I am to myself. And for this reason I want you to know that before becoming convinced of my present opinion, of which I am now certain, a few years ago it only seemed to me true. When I was younger and less wise than now, I thought it was probable. When I was a beginner in speculation of this kind, I considered it so false that I was surprised by Aristotle, who not only deigned to take it into consideration but who even dedicated more than half of the second book of *On the heavens and the earth* to an attempt to demonstrate that the earth does not move. When I was a youngster still lacking in speculative intellect, I thought that such an idea was madness; and I was convinced that somebody had proposed it merely as a sophistical and captious question fit to exercise idle minds, such as those who like to dispute in play, and who claim to be able to prove that white is black. So I can no more hate you for this opinion than I could hate myself when I was younger, more callow, less wise and experienced.<sup>31</sup> Instead of getting angry with you, I should really be sorry for you; and I pray to God that, as he gave me this understanding, even if it is not his pleasure to open your eyes, he will at least lead you to realize that you are blind. Perhaps this will serve to make you more civil and courteous, or at least less ignorant and rash. You should really love me, if not for what I am at present – that is, more prudent and mature than you – at least for what I was when I was younger and more ignorant. For, in my more tender years, I was something like you in your old age. What I mean is, that although I myself have never been uncouth, rude, and uncivil in conversation and debate, there was nevertheless a time when I was ignorant like you. And so, as I respect your present because it corresponds to my past, and as you respect my past because it corresponds to your present, I shall love you, and you should refrain from hating me.”

SMITHUS. But as they had started to talk about quite another subject, what did they say to this?

THEOPHILUS. To conclude: that they were disciples of Aristotle and Ptolemy, and many other learned philosophers. To which the Nolan replied that there are innumerable fools, with no sense and much ignorance, who are followers not only of Aristotle and of Ptolemy, but of many others who are not able to understand what the Nolan is saying. For there never can and never will be many who agree with him, except for men whose wisdom is almost divine, like Pythagoras, Plato, and others. He added: “As for the multitude, which delights in having philosophers on its side, you should take into consideration that in so far as those philosophers

consideri che per tanto che sono qué philosophi conformi al volgo; han prodotta una philosophia volgare. Et per quel ch'appartiene a' voi che vi fate sotto la bandiera d'Aristotele, vi dono aviso che non vi dovete gloriare, quasi intendessivo quel che intese Aristotele, et penetrassivo quel che penetró Aristotele: per che e' grandissima differenza tra il non sapere quel che lui non seppe; et saper quel che lui seppe: per che dove quel philosopho fú ignorante há per compagni non solamente voi, ma tutti vostri simili, insieme con i' scafari, et fachini Londrioti. dove quel galant'huomo fu dotto et giudicioso credo et son certissimo che tutti insieme ne sete troppo discosti. Di una cosa fortemẽte mi maraveglo, che essendo voi stati invitati et venuti per disputare; non havete giamai posto tali fondamenti, et proposte tale ragioni, per le quali in modo alchuno possiate conchiudere contra me, ne contra il Copernico, et pur vi sono tanti gaglardi argomentanti, et persuasioni. Il Torquato come volesse hora sfodrare una nobilissima demonstratione; con una Augusta maestá dimanda. UBI EST AUX SOLIS? Il Nolano rispose che lo immaginasse dove gli piace, et concludesse qualche cosa. Per che l'auge si muta et non stá sempre nel medesimo grado dell'eclittica et non può veder á che proposito dimanda questo. Torna il Torquato à dimandar il medesimo come il Nolano non sapesse rispondere á questo. Rispose il Nolano quot sunt sacramenta ecclesiæ? Est circa vigesimum Cancrì: et oppositum circa decimum vel centesimum Capricorni, ò sopra il campanile di san Paolo.

SMITHO. Possete conoscere á che proposito dimandasse questo?

THEOPHILO. Per mostrar á qué che non sapean nulla, che lui disputava, et che diceva qualche cosa, et oltre tentare tanti quomodo, quare, ubi, sin che ne trovasse uno al quale il Nolano dicesse che non sapea: fin a questo che volse intendere quante stelle sono della quarta grandezza. Ma il Nolano dicesse che non sapeva altro che quello che era al proposito. Questa interrogazione de l'auge del sole, conchiude in tutto et per tutto che costui era ignorantissimo di disputare. Ad uno che dice la terra muoversi circa il sole, il sole star fisso in mezzo di questi erranti lumi, dimandare dove e' l'auge del sole? é á punto come se uno dimandasse á quello del'ordinario parere, dove é l'auge de la terra? et pur la prima lettione che si dá ad uno che vuole imparar di argumentare e' di non cercare et dimandar secondo i' proprii principii: ma quelli che son concessi da l'avversario. Ma á questo goffo tutto era il medesimo; per che cossi harrebe saputo tirar argomenti da que suppositi che sono, á proposito come da qué che son fuor di proposito.

speak with the voice of the common people, they have produced a common philosophy. And as far as you who gather under the flag of Aristotle are concerned, I warn you that you should not boast as if you really understood Aristotle, and had fully penetrated Aristotle's thought; because there is a great difference between not knowing what he did not know, and knowing what he knew. For where that philosopher was ignorant, he has as his companions not only you but all those like you, as well as the boatmen and porters of London; and where that gentleman was wise and judicious, I believe, and am fully convinced, that all of you without exception are nowhere near his class. But there is one thing which really surprises me: and that is, that having been invited here to argue and dispute, you have not even proposed a thesis, or put forward reasons, which in any sense invalidate my position, or that of Copernicus; even though there are numerous valid arguments and reasons available." Whereupon Torquatus, as if he meant now to unsheathe an incontestable proof, asked with august majesty: "*Ubi est aux solis?*"<sup>32</sup> The Nolan replied that he could put the apogee of the sun wherever he wished, and reach his conclusions accordingly. Given that the apogee changes, and does not stay fixed in the same degree of the ecliptic, it was not clear why this question was being asked. Torquatus went on repeating it, as if the Nolan was short of a reply. So the Nolan replied: "*Quot sunt sacramenta ecclesiae? Est circa vigesimum Cancrī; et oppositum circa decimum vel centesimum Capricorni*, or above the bell-tower of St Paul's."<sup>33</sup>

SMITHUS. Do you know why Torquatus asked this question?

THEOPHILUS. To show those who knew nothing that he was debating – that he had something to say – and also to see if by trying out as many *quomodo, quare, ubi*<sup>34</sup> as possible he would eventually find one to which the Nolan would have no reply. Finally he got round to asking how many stars are of the fourth rank of magnitude; but the Nolan said that he only knew about the topic being discussed. The question about the apogee of the sun shows without any shadow of doubt that this person had no idea how to carry on a debate. When somebody claims that the earth moves around the sun, and that the sun is the star which lies in the middle of these wandering lights, it is absurd to ask that person where the apogee of the sun lies. It is like asking somebody who holds the traditional opinion where the apogee of the earth lies. And to think that the first lesson given to anyone wishing to learn how to dispute is to ask questions not according to his own principles, but according to those held by his adversary. But to this oaf it was all the same, because in that way he could argue his case both from the suppositions which were being debated and from those which were not.

Finito questo discorso cominciarono á raggionar in Inglese trá loro et dopo haver alquãto trascorso insieme; ecco comparir sú la tavola carta et calamaio. Il dottor Torquato distese quanto era largo et lungho un foglo, prese la piuma in mano, tira un linea retta per mezzo del foglo da un canto à l'altro, in mezzo forma un circolo á cui la linea predetta passando per il centro, facea diametro, et dentro un semicircolo di quello scrive terra, et dentro l'altro scrive sol. Dal canto de la terrá forma otto semicircoli, dove ordinatamente erano gli caratteri di sette pianeti, et circa l'ultimo scritto OCTAVA SPHAERA MOBILIS et ne la margine PTOLOMEUS. trá tanto il Nolano disse à costui che volea far di questo, che sanno sin á i' putti? Torquato ripose Vide, tace, et disse: ego docebo te Ptolomeum et Copernicum.

SMITHO. Sus quandoque Minervam.

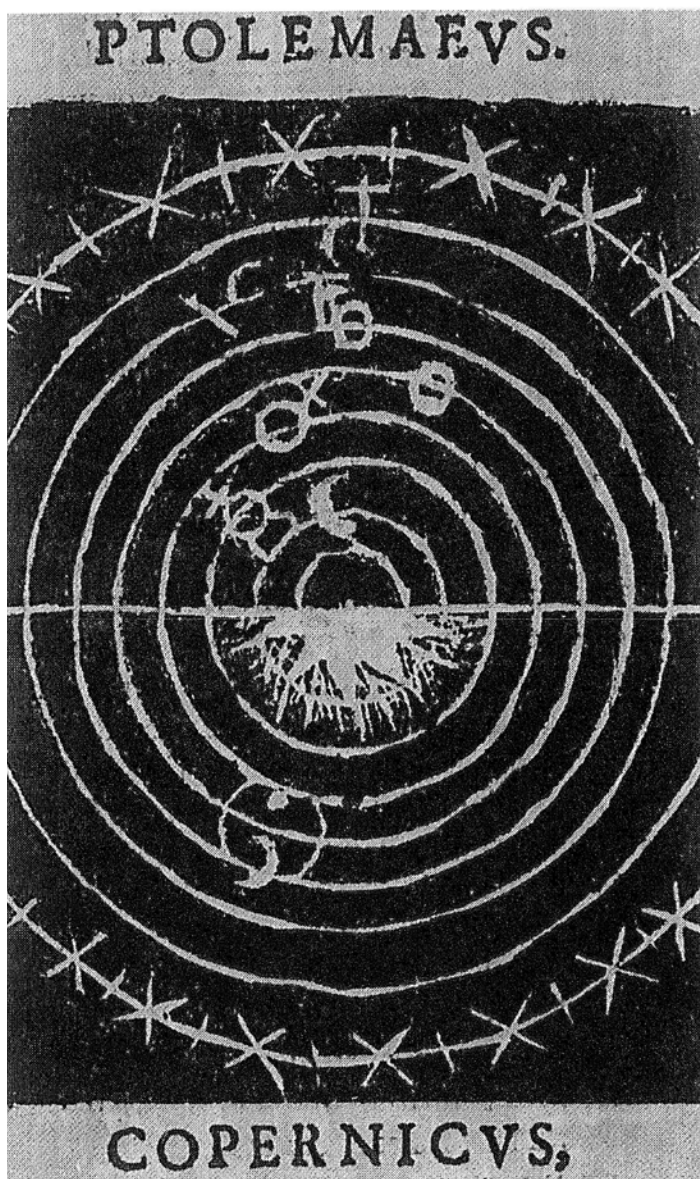
THEOPHILO. Il Nolano ripose che quando uno scrive l'alphabeto, mostra mal principio di voler insegnar gramatica ad un che ne intende piu che lui. seguita á far la sua descrizione il Torquato; et circa il sole che era nel mezzo, forma sette semicircoli con simili caratteri circa l'ultimo scrivendo SPHAERA INMOBILIS FIXARUM, et ne la margine, COPERNICUS. Poi se volta al terzo circolo, et in un punto della sua circonferenza forma il centro d'un epiciclo, al quale havendo delineata la circonferenza; in detto centro penge il globo de la terra et á fin che alchuno non s'ingannasse pensando che quello non fusse la terra; vi scrive á bel carattere, TERRA. et in un loco de la circonferenza de l'epiciclo distantissimo dal mezzo, figurò il carattere della luna. Quando vedde questo il Nolano, ecco (disse) che costui mi volea insegnare del Copernico, quello che il Copernico medesimo non intese, et piu tosto s'harrebbe fatto taglar il collo che dirlo o' scriverlo. Perche il piu grande asino del mōdo saprá che da quella parte sempre si vedrebbe il diametro del sole eguale; et altre molte cōclusioni seguitarebbono che nō si possono verificare. Tace, tace, disse il Torquato, tu vis me docere Copernicum? Io curo poco il Copernico, disse il Nolano, et poco mi curo che voi o' altri l'intendano: ma di questo solo voglio avvertirvi che prima che vengate ad insegnarmi un'altra volta: che studiate meglio. Ferno tanta diligenza i' gentil'uomini che v'eran presenti, che fú portato il libro del Copernico et guardando nella figura, veddero che la terra non era descritta nella circōferenza del'epiciclo come la luna, però volea Torquato che quel punto che era in mezzo de l'epiciclo nella circōferenza della terza sphaera, significasse la terra.

[Figure 7]

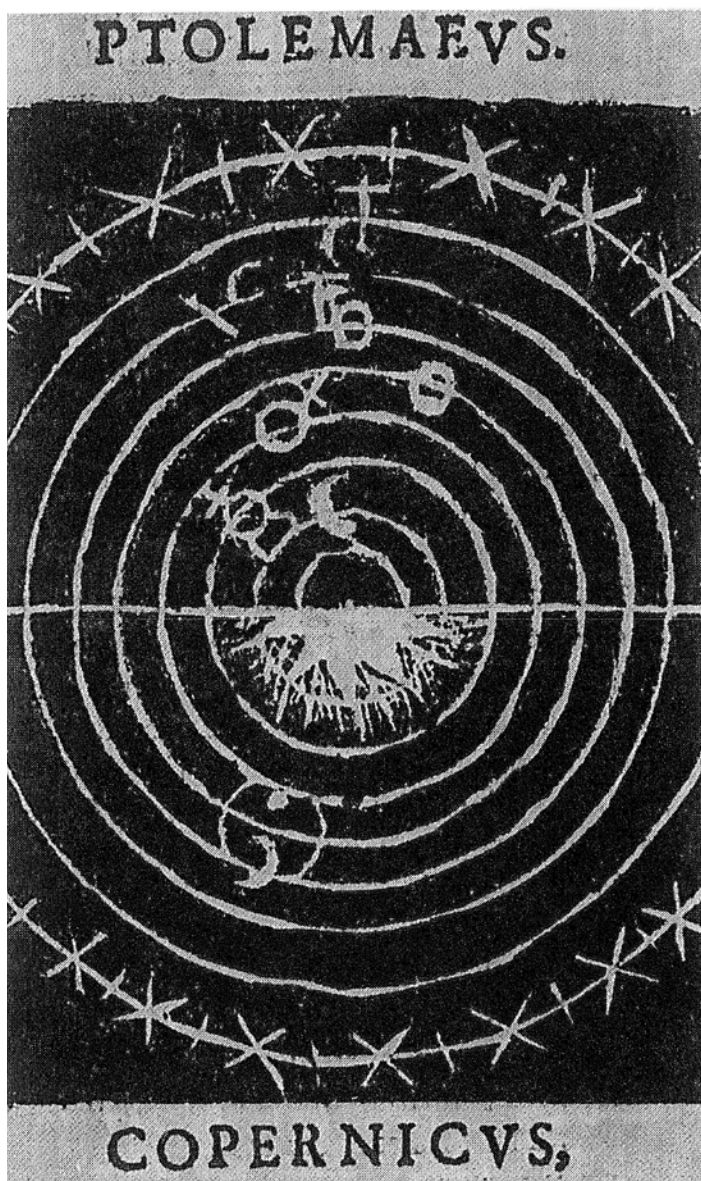
When this discussion had ended, they started talking in English among themselves, and, after some time, suddenly paper and an ink-stand appeared on the table. Dr Torquatus smoothed out a sheet of paper to its full length and breadth, took the pen in his hand, drew a line through the middle of the sheet from side to side, made a circle in the middle with the above-mentioned line passing through its centre as its diameter, and inside the semicircle so formed wrote *Earth*, while inside the other semicircle he wrote *Sun*. On the side of the earth he made eight semicircles, where normally the signs of the seven planets are found, and around the last of these he wrote OCTAVA SPHAERA MOBILIS,<sup>35</sup> and in the margin PTOLEMEUS. Meanwhile, the Nolan asked him what he was doing this for, as even schoolchildren knew that much? Torquatus replied: "*Vide, tace et disce: ego docebo te Ptolomeum et Copernicum.*"<sup>36</sup>

SMITHUS. *Sus quandoque Minervum.*<sup>37</sup>

THEOPHILUS. The Nolan observed that when someone writes out the alphabet, he shows bad judgment if he is trying to teach grammar to those who know more than him. Torquatus continued drawing. Around the sun in the middle, he formed seven semicircles with the same signs, writing around the last one SPHAERA INMOBILIS FIXARUM,<sup>38</sup> and in the margin: COPERNICUS. Then he fixed his attention on the third circle, and in a point on its circumference placed the centre of an epicycle, and, after he had drawn its circumference, in that centre he depicted the globe of the earth.<sup>39</sup> Then, so that nobody should make any mistake by thinking that it was not the earth, he wrote in fine handwriting: EARTH; and in a place on the circumference of the epicycle as far as possible from the centre, he drew the symbol of the moon. When the Nolan saw this, he said: "Now look here, this man is trying to teach me Copernicus by saying something which Copernicus himself never taught. He would rather have had his throat cut than say or write this. For even the greatest ass in the world understands that from that position one would always see the sun with the same diameter; and many other conclusions would follow which can never be the case." "*Tace, tace,*" said Torquatus, "*tu vis me docere Copernicum?*"<sup>40</sup> "I am not particularly interested in Copernicus," said the Nolan, "and it does not interest me much if you or others understand him. However, I would like to warn you that before you try to teach me another time, you must study your subject better." The gentlemen who were present were diligent enough at this point to have Copernicus's book brought in, and, looking at the illustration, they saw that the earth is not described on the circumference of the epicycle as the moon is. That was why Torquatus had claimed that the point in the middle of the epicycle on the circumference of the third sphere stood for the earth.<sup>41</sup> [Figure 7]



[Fig. 7 © The British Library Board, C.37.c.14.(2.) p. 98.]



[Fig. 7 Bruno's drawing of the Ptolemaic system facing the Copernican system on the same page includes his correction to Torquatus's representation of the Copernican system. © The British Library Board, C.37.c.14.(2.) p. 98.]



SMITHO. La causa de l'errore fú, che il Torquato havea contemplate le figure di quel libro, et non havea letto gli capitoli: et se pur le há letti, non l'há intesi.

THEOPHILO. Il Nolano se mise ad ridere; et dissegli che quel punto non significava altro che la pedata del compasso, quando si delineò l'epiciclo della terra, et della luna, il quale é tutto uno et il medesimo.

Hor se volete veramente sapere dove è la terra secondo il senso di Copernico: leggete le sue paroli. Lessero, et ritrovarno che dicea la terra et la luna essere contenute come da medesimo epiciclo; &c. et cossi rimasero mastigando in lor lingua, sin tanto che Nundinio et Torquato havendo salutato tutti gli altri, eccetto ch'il Nolano, sen' andorno. et lui inviò uno appresso che da sua parte salutasse loro. Qué cavallieri dopo haver pregato il Nolano che non si turbasse per la discortese inciviltà et temeraria ignoranza de lor dottori: ma che havesse compassione alla povertà di questa patria, la quale é rimasta vedova delle buone lettere, per quanto appartiene alla possessione di philosophia et reali mathematiche (nelle quali mentre sono tutti ciechi; vengono questi asini et ne si vendono per oculati, et ne porgeno vessiche per lanterne) con cortesissime salutationi lasciandolo, se ne andaro per un camino: noi et Nolano per un'altro ritornammo tardi á casa, senza ritrovar di qué rintuzzi ordinarii per che la notte era profonda, et gl'animali cornupeti et calcitranti non ne molestaro al ritorno, come alla venuta; per che prendendo l'alto riposo s'erano nelle lor mandre et stalle retirati.

PRUDENTIO.

Nox erat et placidum carpebant fessa soporem  
Corpora per terras, sylvæque et sæva quierant  
Æquora, cum medio voluntur sidera lapsu,  
Cum tacet omnis ager, pecudes. &c.

SMITHO. Horsú habbiamo assai detto oggi; di gratia Theophilo ritornate domani perche voglo intendere qualch'altro proposito circa la dottrina del Nolano. Perche quella del Copernico benche sii comoda alle supputationi: tutta volta non é sicura et ispedita quanto alle raggioni naturali, le quali son le principali.

THEOPHILO. Ritornarò volentieri un'altra volta.

FRULLA. Et io.

PRUDENTIO. Ego quoque. Valet.

SMITHUS. The reason for the mistake was that Torquatus had looked at the illustrations to that book without reading the chapters: or, at least, if he had read them, he had failed to understand them.

THEOPHILUS. The Nolan began to laugh. He said that that point was only the mark made by the foot of the compass during the drawing of the epicycle of the earth and the moon: the epicycle being the same for them both. "Now," he said, "if you really want to know where the earth lies according to Copernicus, read his words." They read, and found that he said "that the earth and the moon were contained as if by the same epicycle," etc. And they went on murmuring in their language, until Nundinius and Torquatus took leave of the others and went away, ignoring the Nolan completely, so that he sent somebody after them with his greetings. The knights, with the most courteous greetings, went their own ways, but not without first entreating the Nolan not to be upset by the uncivilized and arrogant ignorance of those doctors. They hoped he would have pity on the poverty of this deprived and unlettered country, bereft particularly in the field of philosophy and a true mathematics. Such studies are totally uncultivated, allowing asses like these to come along claiming to be experts, and selling false goods for true.<sup>42</sup> Together with the Nolan, we returned home very late, without experiencing the usual harassment, for the night was dark, and the horned and hoofed animals, who had retired to their rest in their pens and their stables, no longer molested us as they had on our coming.

PRUDENTIUS.

*Nox erat et placidum carpebant fessa soporem  
corpora per terras, sylvaque et saeva quierant  
aequora, cum medio volvuntur sidera lapsu,  
cum tacet omnis ager; pecudes, etc.*<sup>43</sup>

SMITHUS. Come now, enough has been said today. Theophilus, I hope you will be good enough to return tomorrow, because I want to look more closely at some aspects of the Nolan's doctrine. For Copernicus's reasons, although they are useful for calculations, are not so valid and secure in the field of natural philosophy, which is the most important of all.

THEOPHILUS. I shall be glad to come back another time.

FRULLA. Me too.

PRUDENTIUS. *Ego quoque. Valete.*<sup>44</sup>

## *Dialogo Quinto*

### **Theophilo**

Perche non son piú, ne altramente fisse le altre stelle al cielo, che questa stella che é la terra é fissa nel medesimo firmamento che é l'aria. Et non é piu degno d'esser chiamato ottava sphaera dove é la coda de l'orsa, che dove é la terra, nella quale siamo noi: per che in una medesima etherea reggione come in un medesimo grã spacio, et campo, son questi corpi distinti: et con certi convenienti intervalli allontanati gl'uni da gl'altri. Considerate la caggione per la quale son stati giudicati sette cieli de gli erranti, et uno solo di tutti gl'altri. Il vario moto che si vedeva in sette; et uno regolato in tutte l'altre stelle che serbano perpetuamente la medesima equidistanza et regola, fa parer á tutte quelle convenir un moto, una fissione, et un'orbe, et non esser piu che otto sphere sensibili per gli luminari che sono com'inchiodati in quelle.

Hor se noi venemo á tanto lume, et tal regolato senso, che conosciamo questa apparenza del moto mondano procedere dal giro de la terra, se dalla similitudine della consistentia di questo corpo in mezzo l'aria; giudichiamo la consistenza di tutti gl'altri corpi. potremo prima credere, et poi dimostrativamente con chiudere il contrario di quel sogno, et quella phantasiá che é stato quel primo inconveniente che ne há generati, et é per generarne tanti altri innumerabili. Quindi accade quello errore. Come á noi che dal centro dell'Orizzonte voltando gl'occhi da ogni parte, possiamo giudicarla maggior et minor distãza da, trá, et in quelle cose che son piu vicine: ma da un certo termine in oltre, tutte ne parranno

## *Dialogue V*

### **Theophilus**

The other stars are fixed in the sky in exactly the same way in which this star, the earth, is fixed in the same firmament. Furthermore, the place where the tail of the Bear is found no more deserves to be called the eighth sphere than the place where the earth is, on which we live. For these separate bodies lie within one and the same ethereal region, as if within the same space and field, and they are distanced from one another at appropriate intervals. Consider the reason why it has been decided that there are seven heavens in the sky for the seven wandering stars, and only one for all the others. The varied motion observed in those seven, and the apparently unvaried motion of all the other stars, which keep perpetually the same distance and relation with respect to each other, make it seem that all those others have one movement only, one fixed place and one sphere. It seems, then, that there are no more than eight solid spheres for these brilliant lights, which appear to be nailed on to them.

But now consider with the light of a well-regulated intellect the way in which we know that the appearance of all these movements derives from the earth's rotation. If we judge the disposition of all those other bodies to resemble the disposition of this earth of ours which hangs in the air, we can first of all believe, and then demonstrate conclusively, that things are exactly the contrary to such a dream and fantasy, which has been the origin of all the trouble, and has generated, and will go on generating, innumerable problems.<sup>1</sup> This is how the error arose. By casting our eyes on all sides from the centre of the horizon, we can judge greater and lesser distances from, among, and in those things which are nearest to us: whereas, from a certain distance and beyond, everything will appear

egualmente lontane: cossi alle stelle del firmamento guardando, apprendiamo la differenza de moti et distanze d'alchuni astri piu vicini: ma gli piu lontani et lontanissimi, ne appaiono immobili, et egualmente distanti, et lontani quanto alla longitudine. qualmente un'arbore talvolta parrá piu vicino á l'altro perche si accosta al medesimo semidiametro; et perche sarà in quello indifferēte, parrá tutt'uno: et pure cō tutto cio sarà piu lontanāza trá questi, che trá quelli che son giudicati, molto piu distosti, per la differenza di semidiametri.

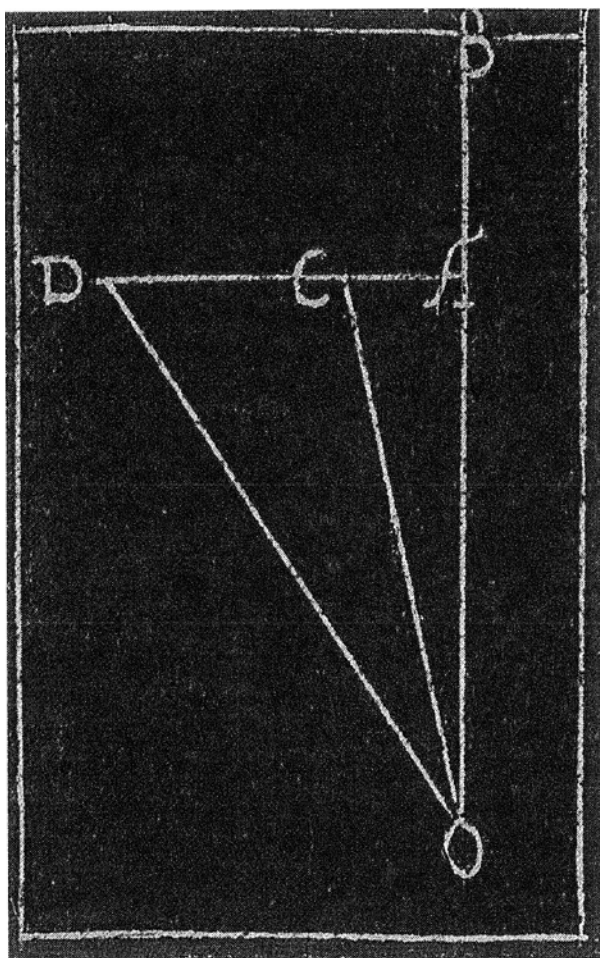
Cossi accade che tal stella é stimata molto maggiore, che é molto minore. tale molto piu lontana, che é molto piu vicina. Come nella seguente figura, dove ad O occhio la stella A, pare la medesima con la stella B, et se pur si mostra distinta, gli parrá vicinissima: et la stella C, per essere in un semidiametro molto differente, parrá molto piu lontana: et in fatto é molto piu vicina.

Dumq; che noi non veggiamo molti moti in quelle stelle, et non si mostrino allontanarsi, et accostarsi l'une da l'altre, et l'une à l'altre: non é perche non facciano cossi quelle, come queste gli lor giri, atteso che non é ragione alchuna, per la quale in quelle non siano gli medesmi accidenti che in queste, per i' quali medesimamente un corpo per prendere virtu da l'altro, debba muoversi circa l'altro. Et però non denno esser chiamate fisse per che veramente serbino la medesima equidistanza da noi, et trá loro: ma per che il lor moto non e' sensibile á noi. Questo si può veder in essemplio d'una nave molto lontana, la quale se farà un giro di trenta, ò di quaranta passi: non meno parrá che la stii ferma, che se non si movesse punto. Cossi proportionalmente e' da considerare in distanze maggiori, in corpi grandissimi, et luminosissimi, de quali e' possibile che molti altri et innumerabili siino cossi grandi, et cossi lucenti: come il sole, et di vantaggio: i' circoli et moti di quali molto piú grandi non si veggono, onde se in alchuni astri di quelli accade varietà di approssimanza non si può conoscere se non per lunghissime osservationi, le quali non son state cominciate, ne perseguite; perche tal moto nessuno l'há creduto, ne cercato, ne presupposto, et sappiamo che il principio de l'inquisitione, é il sapere, et conoscere che la cosa sii, o' sii possibile, et cōveniente, et da quella si cave profitto. [Figure 8]

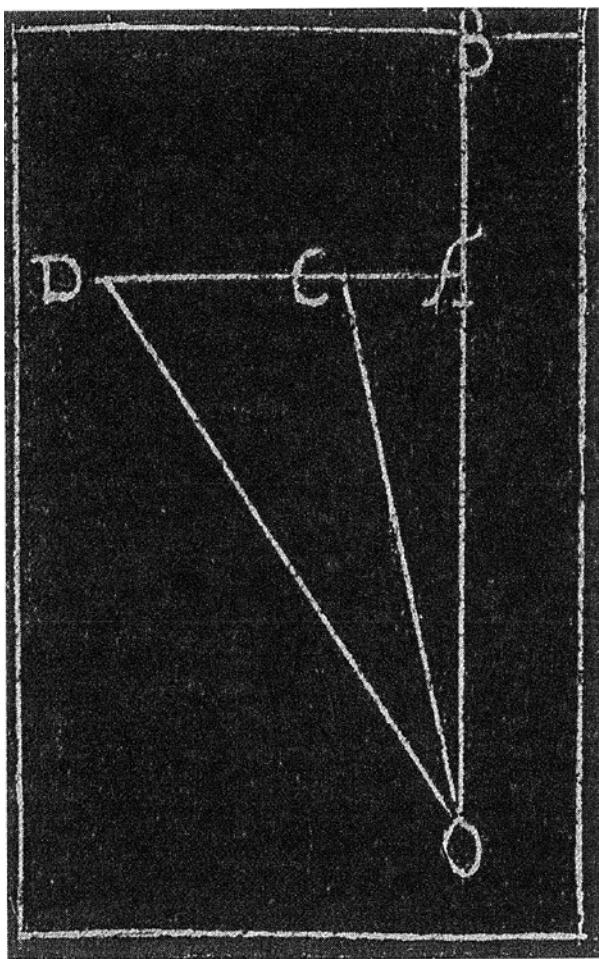
equally far away. So, when we gaze at the stars in the firmament, we become aware of the motions and distances of some of the stars which are nearest to us, while those which are distant or furthest away appear motionless, and equally distant and far away. In the same way a tree will sometimes appear closer to another because it lies within the same visual radius; or several trees will even seem to form a single tree, if the visual radii coincide. Nevertheless, there will actually be more distance between them than between those which appear to us further apart, owing to the different visual radius.

In the same way, it can happen that one star seems much larger than another when in reality it is smaller; or a star can seem much further away when in fact it is nearer.<sup>2</sup> Observe the following diagram, where from O, which is the eye, the star A seems to be at the same distance as the star B, and although it appears separate from the other, nevertheless it seems to be extremely near to it. The star C, which lies in another visual radius, seems much further away, although it is actually much nearer.

So the fact that we do not see much movement in those stars, and that they do not appear to move further away from or nearer to each other, does not mean that they do not move in the same way as these. For there is no reason whatever why they should not be subject to the same influences as these are, or why one of those bodies should not circle around another one. So it is not proper to call them fixed because they really keep the same distance between themselves and us, but only because their movement is imperceptible to us. This can be seen by the example of a very distant ship which, even if it moves thirty or forty yards, will nevertheless appear to be still, as if it were not moving at all. In the same way, it is necessary to consider the distance of great and very luminous bodies, many of which may be as large and as bright as the sun or even more so, but whose orbits and movements, despite their magnitude, cannot be perceived. So, if some of those stars move towards each other, we cannot verify it except by means of lengthy observations, which still have to be begun and pursued. For nobody has believed in such movements, searched for them, or presumed them to be possible. And we all know that the beginning of an inquiry depends on the knowledge that such a phenomenon exists, or is at least possible or probable, and the inquiry profitable. [Figure 8]



**O**, la uista, l' occhio.  
**O A B, O C, O D**, lunghezze, longi-  
 tudini et linee uisuali .  
**A C, A D, C D**, larghezze, latitudini.



O, the point of vision, the eye.

OAB, OC, OD, lengths, longitudes, and visual lines.

AC, AD, CD, widths, latitudes.

[Fig. 8 Diagram designed to show how the “fixed stars” are not really fixed either in relation to an observer on earth or in relation to each other, but only appear fixed due to the great distances involved.

© The British Library Board, C.37.c.14.(2.) p. 104.]



PRUDENTIO. Rem acu tangis.

THEOPHILO. Hor questa distinction di corpi ne la etherea reggione l'ha conosciuta Heraclito, Democrito, Epicuro, Pithagora, Parmenide, Melisso, come ne fan manifesto qué stracci che n'habbiamo, onde si vede, che conobbero un spacio infinito, regione infinita, selva infinita, capacità infinita di mondi innumerabili simili á questo. i' quali cossi compiscono i' lor circoli come la terra il suo, et però anticamente si chiamavano ethera, cio é corridori, corrieri, ambasciatori, nuncii della magnificenza del'unico altissimo, che con musicale armonia contemprano l'ordine del la costitution della natura, vivo specchio dell'infinita deitá. Il qual nome di ethera dalla cieca ignoranza e' stato tolto á questi, et attribuito á certe quinte essenze, nelle quali come tanti chiodi siino inchiodate queste lucciole, et lanterne.

Questi corridori hanno il principio di moti intrinseco la propria natura, la propria anima, la propria intelligenza: per che non é sufficiente il liquido et sottile aria, á muovere si dense et gran machine, per che à far questo gli bisognarebbe virtù trattiva, ó impulsiva, et altre simili, che nõ si fanno senza contatto di dui corpi almeno, de quali l'uno con l'estremitá sua risospinge, et l'altro é risospinto: et certo tutte cose che son mosse in questo modo, riconoscono il principio de lor moto, o' contra ó fuor de la propria natura, dico ó violento, ò almeno non naturale. E' dunque cosa conveniente alla cõmodita delle cose che sono, et á l'effetto della perfettissima causa: che questo moto sii naturale da principio interno, et proprio appulso, senza resistenza. Questo conviene á tutti corpi che senza contatto sensibile di altro impellente, ó attrahente si muoveno. Però la intendeno al rovescio quei che dicono che la calamita tira il ferro, l'ambra la pagla, il getto la piuma, il sole l'elitropia: ma nel ferro é come un senso (il quale é sveglato da una virtù spirituale che si diffonde dalla calamita) col quale si muove à quella, la pagla á l'ambra, et generalmente tutto quel che desidera, et há indigēza si muove alla cosa desiderata, et si converte in quella al suo possibile, cominciãdo dal voler essere, nel medesimo loco. Da questo considerar che nulla cosa si muove localmente da principio estrinseco senza contatto piu vigoroso della resistenza del mobile: dipende il considerare quanto sii solenne goffaria, et cosa impossibile à persaudere ad un regolato sentimento: che la luna muove l'acqui del mare, caggionando il flusso in quello, fá

PRUDENTIUS. *Rem acu tangis.*<sup>3</sup>

THEOPHILUS. Now this arrangement of the bodies in the ethereal region was understood by Heraclitus, Democritus, Epicurus, Pythagoras, Parmenides, and Melissus, as they make clear in those fragments which have survived. From these it is evident that they thought of an infinite space, an infinite region, an infinite extension capable of including infinite and innumerable worlds similar to this one, which move in their respective orbits just as the earth moves in hers.<sup>4</sup> In antiquity these worlds were called *ethera*, that is runners or couriers: ambassadors heralding the magnificence of the one Almighty with a musical harmony bearing witness to the ordered constitution of nature, the living mirror of the infinite godhead. This name of *ethera* has since been taken away from them by blind ignorance, and given to certain quintessences, within which these tiny lights or lanterns are thought of as fixed as if by nails.<sup>5</sup>

These couriers have an intrinsic principle of movement within their very nature, or their souls or minds. For the liquid and subtle air alone is not sufficient to move such huge and heavy machines, which would require a force of attraction or repulsion, or something similar. This is not possible unless there is some meeting place between at least two bodies, which push or pull each other through their point of contact. It is certain that all things which are moved in this way find the principle of their movement against or outside their own natures: that is, violently or unnaturally. But it is more appropriate to the harmony of existing things, and to the effect of the most perfect cause, that this movement should be natural, deriving from an internal principle or innate propulsion that finds no resistance. This applies to all bodies that move without any physical contact with other bodies pushing or pulling them. This principle is totally misunderstood by those who maintain that the magnet attracts iron, amber attracts straw, enamel attracts feathers, and the sun attracts sunflowers. On the contrary, in iron there is a kind of sense (awoken by a spiritual force which emanates from the magnet) by virtue of which it moves towards the magnet, or straw moves towards amber. Generally speaking, everything which desires or lacks something moves towards the thing desired, and – as far as possible – converts itself into it, starting from the wish to be in the same place.<sup>6</sup> If we consider that nothing changes its place according to an extrinsic principle, unless there is a more vigorous contact than the resistance of the object concerned, we may further conclude how completely absurd it is to believe that the moon moves the waters of the sea causing the tides, increasing

crescere gl'humori, feconda i' pesci, empie l'ostreche, et produce altri effetti; atteso che quella di tutte queste cose é propriamente segno, et non causa. segno et inditio dico, perche il vedere queste cose con certe dispositioni della luna; et altre cose contrarie, et diverse, cō contrarie et diverse dispositioni: procede dal'ordine et corrispondenza delle cose, et le leggi di una mutatione, che son conformi et corrispondenti alle leggi de l'altra.

SMITHO. Dall'ignoranza di questa distintione procede che di simili errori son pieni molti scartafazzi, che ne insegnano tante strane filosofie dove le cose che son segni, circostanze, et accidēti, son chiamate cause. trá quali inettie quella é una delle reggine, che dice li raggi perpēdicolari et retti esser causa di maggior caldo, et li acuti et obliqui di maggior freddo, il che però é accidēte del sole vera causa di ciò, quādo persevera piu, ó meno sopra la terra. Raggio riflesso, et diretto; angolo, acuto, et ottuso, linea perpendicolare, incidēte, et piana; arco maggiore et minore; aspetto tale, et quale; son circostanze mathematiche et non cause naturali. Altro é giocare con la geometria, altro é verificare con la natura. Non son le linee et gl'angoli che fanno scaldar piu ò meno il fuoco; ma le vicine et distanti situationi, lunghe et brieve dimore.

THEOPHILO. La intendete molto bene, ecco come una verità chiarisce l'altra. Hor per conchiudere il proposito: questi gran corpi se fusser mossi dall'estrinseco, altrimenti che come dal fine, et bene desiderato: sarrebbono mossi violente et accidentalmente; anchor che havessero quella potēza la quale é detta nō repugnante, per che il vero non repugnāte é il naturale, et il naturale (ò vogli ò non) é principio intrinseco, il quale da per se porta la cosa dove conviene: altrimēte l'estrinseco motore nō moverrá senza fatica, ó pur nō sará necessario, ma soverchio; et se vuoi che sia necessario, accusi la causa efficiēte per deficiēte nel suo effetto, et che occupa gli nobilissimi motori, á mobili assai piu indegni, come fanno quelli che dicono l'attioni delle formiche et aragne essernò da propria prudenza et artificio; ma da l'intelligenze divine non erranti, che gli donano (verbi gratia) le spinte, che si chiamano istinti naturali, et altre cose significate per voci senza sentimento, per che se domandate á questi savii che cosa é quello istinto? non sapranno dir altro che istinto, o' qualche altra voce cossi indeterminata et sciocca, come questo istinto, che significa principio istigativo, che e' un nome comunissimo; per non dir o' un sesto senso, o' ragione, ó pur intelletto.

its moisture, multiplying the number of fish, swelling the oysters, and so on. Such things cannot be accepted by a well-regulated mind. For it is clear that the moon is a sign of these things, but not their cause. I say a sign and an indication, because these things are seen with certain dispositions of the moon, while other and contrary things are seen with other and contrary dispositions. This depends on the order and relationships between things, and the laws of their mutations, which conform and correspond one to another.<sup>7</sup>

SMITHUS. The ignorance of this distinction gives rise to the fact that such errors are present in numerous scraps of paper which teach strange philosophies. In these, things which are signs, circumstances, and accidents are called causes. The most stupid example of all is when perpendicular rays travelling in a straight line are said to cause increase in heat, while acute and oblique rays cause increase in cold. This is only an accidental effect of the sun, which is the real cause of this, according to whether it is more or less directly above the earth. Direct or reflected rays, acute or obtuse angles, perpendicular or oblique lines, greater or lesser arcs, this or that appearance, are mathematical entities and not natural causes. It is one thing to play with geometry, but another to verify with nature. It is not the lines or the angles which cause the fire to heat more or less, but its greater or lesser distance, its longer or shorter duration.<sup>8</sup>

THEOPHILUS. You understand perfectly; you see how one truth illuminates another. So now, to conclude on this subject: if these huge bodies were to be moved from outside, in some way other than by the end and good desired by them, they would be moved violently and in an accidental manner, even if they were to possess that power which is called inertia. For true inertia is according to nature, and what is natural (whether one wants it or not) is an intrinsic principle which, on its own, carries the thing where it is appropriate for it to go. An extrinsic motor, on the other hand, will not cause movement without effort; or rather, it will not be necessary but superfluous. If you want it to be necessary, you will have to accuse the efficient cause of being deficient in its effect, and of being a noble motor applied to a much less worthy object. In a similar way, some say that the actions of ants or spiders do not derive from their own prudence or artifice, but from divine and unerring intelligences which (*verbi gratia*)<sup>9</sup> spur them on, assuming the name of natural instincts, and other names which make no sense. For if you ask one of these sages what that natural instinct is, all he will say to you is that it is an "instinct," or something else just as vague and silly. By this instinct he means a principle of instigation, which is a word in common use: not to mention a sixth sense, or reason, or even intellect.<sup>10</sup>

PRUDENTIO. Nimis arduæ questiones.

SMITHO. A' quelli che non le voglono intendere, ma che voglono ostinatamente credere il falso. Ma ritorniamo á noi. Io saprei bene che rispondere á costoro che hanno per cosa difficile che la terra si muove dicendo che é un corpo cossi grande, cossi spesso, et cossi grave. Pure vorrei udire il vostro modo di rispondere, per che vi veggio tanto risoluto nelle ragioni.

PRUDENTIO. Non talis mihi.

SMITHO. Per che voi siete una Talpa.

THEOPHILO. Il modo di rispondere consiste in questo, che il medesimo potreste dir della luna, il sole, et d'altri grandissimi corpi, et tanti innumerabili che gl'avversarii voglono che si velocemente circondino la terra con giri tanto smisurati. Et pur hanno per gran cosa che la terra in 24. hore si svolga circa il proprio centro, et in un'anno circa il sole. Sappi che ne la terra ne altro corpo e' assolutamente grave ò lieve: nessuno corpo nel suo loco é grave ne leggiero. Ma queste differenze et qualità accadeno non á corpi principali, et particolari individui perfetti dell'universo: ma convegnono alle parti che son divise dal tutto, et che se ritrovano fuor del proprio continente, et come peregrine: queste non meno naturalmente si forzano verso il loco della conservatione, che il ferro verso la calamita, il quale vá á ritrovarla non determinatamente al basso, o' sopra, o' a destra, ma ad ogni differenza locale ovumque sia. Le parti della terra da l'aria vengono verso noi: perche quà e' la lor sphaera. la qual però se fusse alla parte opposita, se parterebbono da noi, á quella drizzando il corso. Cossi l'acqui, cossi il fuoco. L'acqua nel suo loco non e' grave, et non aggrava quelli che son nel profondo del mare, le braccia il capo et altre membra non son grievi al proprio busto, et nessuna cosa naturalmente costituita caggiona atto di violenza nel suo loco naturale. Gravità et levità non si vede attualmente in cosa che possiede il suo loco et dispositione naturale; ma si trova nelle cose che hanno un certo empito col quale si forzano al loco conveniente á se, però é cosa assorda di chiamar corpo alchuno naturalmente grave o' lieve: essendo che queste qualità non convengono á cosa che e' nella sua constitutione naturale; ma fuor di quella, il che non aviene alla sphaera giamai; ma qualche volta alle

PRUDENTIUS. *Nimis arduae questiones.*<sup>11</sup>

SMITHUS. To those who wish not to understand them, and to continue obstinately to believe in what is false. – But let us come back to ourselves. I would know very well how to reply to those who are unwilling to believe that the earth moves, because – they say – its body is far too large, dense, and heavy. Even so, I would like to hear your reply to this, as you seem so decided in your opinions.

PRUDENTIUS. *Non talis mihi.*<sup>12</sup>

SMITHUS. Because you are a mole.

THEOPHILUS. The right way to reply is this: that you could say exactly the same thing of the moon, the sun, and all those other enormous and innumerable bodies which our adversaries see as circling so rapidly around the earth with such huge orbits. And yet they think it quite out of the question that the earth should revolve around its own centre in twenty-four hours, and around the sun in a year. You should realize that neither the earth nor any other body is heavy or light in an absolute sense. In its proper place, no body is either light or heavy.<sup>13</sup> Neither should these differences and qualities be understood as proper to exceptional bodies, which are of particular importance as individuals within the universal whole. Rather, they are proper to parts, divided from the whole, which, if they should happen to find themselves outside the place which is assigned to them as if they had wandered from it, will naturally force themselves towards their place of conservation.<sup>14</sup> In the same way, iron tends towards the magnet not as if attracted from below, or above, or from the right, but from any direction whatever. The parts of the earth that are in the air come towards us because this is their proper sphere; but if that sphere were in a place opposite to us, they would move towards it and away from us. This is what water does, as well as fire. Water, in its proper place, is not heavy, and does not weigh on those bodies which lie in the depths of the sea; our arms, head, and other parts do not weigh on our body, and nothing in nature constitutes an act of violence in its proper place. Weight and lightness are not seen in actuality in those things which are situated in their natural places according to their dispositions, but only in those things which possess a certain impetus by which they force themselves towards that place which is appropriate to them. So it is absurd to call a body naturally heavy or light; for those qualities are not appropriate to things which maintain the place assigned to them by their natural constitutions, but only to those which are outside them. And this never happens to a whole sphere, but sometimes to the parts of one.

parti di quella: le quali però non sono determinate á certa differenza locale secondo il nostro riguardo, ma sempre si determinano al loco dove e' la propria sphaera, et il centro della sua conservatione. Onde se infra la terra si ritrovasse un'altra spetie di corpo; le parti della terra da quel loco naturalmente montarebbono, et se alchuna scintilla di foco si trovasse (per parlar secondo il comone) sopra il concavo della luna; verrebbe á basso con quella velocita, con la quale dal convesso de la terra ascende in alto.

Cossi l'acqua non meno descende insino al centro de la terra; se si gli dá spacio, che dal centro de la terra ascende alla superficie di quella. Parimente l'aria ad ogni differenza locale con medesima facilitá si muove. Che vuol dir dumque grave et lieve? Nõ veggiamo noi la fiamma talvolta andar al basso et altri lati, ad accendere un corpo disposto al suo nutrimento et conservatione? Ogni cosa dumque che é naturale; é facilissima: ogni loco et moto naturale; é cõvenientissimo. Con quella facilitá, con la quale le cose che naturalmente non si muovono persistono fisse nel suo loco: le altre cose che naturalmente si muovono, marciano per gli lor spacci. Et come violentemente et contra sua natura quelle harrebbono moto; cossi violentemente et contra natura queste harrebbono fissione.

Certo é dumque che se alla terra naturalmente convenesse l'esser fissa: il suo moto sarrebbe violento, contra natura, et difficile: ma chi há trovato questo? chi l'hà provato? la comone ignoranza, il difetto di senso, et di ragione.

SMITHO. Questo hò molto ben capito, che la terra nel suo loco non é piu grave che il sole nel suo, et gli membri de corpi principali, (come le acqui) nelle sue sphere, da le quali divise da ogni loco, sito, et verso, si muoverrebbono ad quelle. onde noi al nostro riguardo le potreimo dire non meno gravi che lieve, gravi et lieve, che indifferenti: come veggiamo ne le comete et altre accensioni, le quali da i' corpi che bruggiano alle volte mandano la fiamma á luoghi oppositi; onde le chiamano comate: alle volte verso noi, onde le dicono barbate: alle volte da altri lati, onde le dicono caudate. L'aria il quale é generalissimo continente, et é il firmamento di corpi sphericici; da tutte parti esce, in tutte parti entra, per tutto penetra, á tutto si diffonde. et però é vano l'argomento che costoro apportano, della ragione della fissione de la terra; per esser corpo ponderoso, denso, et freddo.

These, however, are not determined in their local differences with respect to us, but with respect to those places which are their proper spheres and centres of conservation. So that if another kind of body were to be found inside the earth, the parts of the earth would rise up naturally from that place; and if some spark of fire (to use a common example) were to be found above the concave sphere of the moon, it would fly downwards with the same speed with which it flies up from the convex surface of the earth.

Similarly water flows downwards towards the centre of the earth, if allowed to do so, in the same way as it flows upwards from the centre to the surface. Or, to take another example, air moves in every direction. So what do light and heavy mean? Is it not true that sometimes we see a flame go downwards, or sideways, in order to burn a body disposed towards its nourishment and conservation? So we can say that everything which is natural is simple; every place and natural movement is also appropriate. The same facility which leads things which naturally do not move to stay still leads other things which naturally do move to wander in the space assigned to them. And just as it would be a violence in the former things, and against their nature, for them to move, so in the latter it would be a violence against nature for them to stay still.

Thus it is certain that if it were in the nature of the earth to stay still, its motion would be violent, against nature and forced: but who says that this is the case? Who has proved it? Only common ignorance, lack of sense and reason.

SMITHUS. I understand very well that the earth in its own place is no heavier than the sun in its place, or the members of a principal body, like the waters, in their spheres. If they should be divided from them, they would move towards them from whatever place in which they might be. So it is that we, from our point of view, can say that they are no more light than they are heavy, no more heavy than they are light: that is, that they are indifferently so. We see this in comets and other flaming bodies which sometimes send out flames from their burning parts to places behind them, so that these are called the comets' tails, and sometimes to places in front of them, so that these are called the comets' beards. Sometimes they send them out sideways, and these are called lame comets.<sup>15</sup> The air, which is the universal container, and the firmament in which the spherical bodies move, enters and exits through every part, penetrating everything, and spreading out in every direction. This makes it absurd to argue, as they do, that the earth stands still because it is a heavy body, dense and cold.



THEOPHILO. Lodo Idio che vi veggio tanto capace, et che mi toglete tal fatica, et havete bene compreso quel principio col quale possete rispondere á piu gaglarde persuasioni di volgari philosophi, et havete adito á molte profonde contemplationi della natura.

SMITHO. Prima che venghi ad altre questioni; al presente vorrei sapere: come voglamo noi dire che il sole e' l'elemento vero del fuoco, et primo caldo, et quello e' fisso in mezzo di questi corpi erranti, trá quali intendiamo la terra? Perche mi occorre che e' piu verisimile, che questo corpo si muova che li altri: che noi possiamo veder per esperienza del senso.

THEOPHILO. Dite la ragione.

SMITHO. Le parti della terra ovomque siino o' naturalmente o' per violenza ritenute; non si muoveno. Cossi le parti del'acqui fuor del mare, fiumi, et altri vivi continenti, stanno ferme. Ma le parti del fuoco quando non hanno facultá di montare in alto, come quando son ritenute dalle concavitá delle fornaci; si svolgono, et ruotano in tondo, et non e' modo che le ritegna. Se dunque voglamo prendere qualche argomento et fede dalle parti; il moto conviene piu al sole et elemento di foco che alla terra.

THEOPHILO. A' questo rispondo prima, che per cio si potrebe concedere, che il sole si muova circa il proprio centro. Ma non già circa altro mezzo atteso che basta che tutti i' circostanti corpi si muovano circa lui, per tanto che di esso quelli han bisogno: et ancho per quel che forse ancho lui potesse desiderar da essi.

Secondo e' da considerare che l'elemento del foco é soggetto del primo caldo, e' corpo cossi denso et dissimilare in parti, et membri, come e' la terra: però quello che noi veggiamo muoversi di tal sorte, e' aria acceso, che si chiama fiamma, come il medesimo aria alterato dal freddo della terra, si chiama vapore.

SMITHO. Et da questo mi par haver mezzo, di confirmar quel che dico; perche il vapore si muove tardo et pigro, la fiamma et esalatione velocissimamente, et pero quelló che é piu simile al foco si vede molto piu mobile, che quello aria che é simigliante piu alla terra.

THEOPHILUS. Thank God for your intelligence, which saves me much hard work. You have well understood a principle which will allow you to reply to the most vigorous arguments of ignorant philosophers, and you have taken the first steps towards a profound contemplation of nature.

SMITHUS. Before starting to discuss other matters, for the moment what I would like to know is this: in what sense can we say that the sun is the true element of fire, the primal source of heat, fixed at the centre of the wandering bodies, among which, according to our theory, is the earth? Because it has occurred to me that it is more likely that the sun should move than other bodies; and this is evident from experience and good sense.

THEOPHILUS. Let me hear your reasons.

SMITHUS. Wherever they are, whether they are held back by nature or violence, the parts of the earth do not move. In the same way, the parts of the waters outside the sea, the rivers and other beds which contain their flux, lie still. But the parts of fire, when they are unable to rise up (for example when they are contained within concave ovens), whirl around themselves in spirals which it is impossible to subdue. So that if we want to argue according to a question of parts, movement is more likely in the sun, or the element of fire, than in the earth.

THEOPHILUS. My first reply to this would be that your argument could possibly justify the movement of the sun around its own axis, but not around some other centre. For it is sufficient that all other bodies move around the sun, given that it supplies their needs, and perhaps they supply some of its needs as well.<sup>16</sup>

Second, it is necessary to consider that the element of fire is the basis of primary heat, and as a body is as dense and dissimilar in its parts and members as the earth. So that what we see moving in the way you describe is burning air, which they call “flames”; just as the same air changed by the cold of the earth is called “vapour.”

SMITHUS. And this seems precisely to confirm what I was saying. Because vapour moves slowly and sluggishly, whereas flames and exhalations move rapidly. So that the air which is more like fire can be seen to be more mobile than the air which is more like the earth.

THEOPHILO. La caggione é che il fuoco piú si forza di fuggire da questa reggione la quale é piu connaturale al corpo di contraria qualità. Come se l'acqua o' il vapore se ritrovasse nella reggione del fuoco, o' loco simile à quella: con piu velocità fuggirebbe, che l'exalatione la quale há con lui certa participatione et connaturalità maggiore, che contrarietà o' differenza: Bastivi di tener questo: per che della intentione del Nolano non trovo determinatione alchuna circa il moto ó quiete del sole. Quel moto dunque che veggiamo nella fiamma, ch'e' ritenuta et contenuta nella concavità de le fornaci, procede da quel che la virtu del foco, perseguita, accende, altera, et trasmuta l'aria vaporoso, del quale vuole aumētarsi, et nodrirsi, et quel altro si ritira, et fugge il nemico del suo essere, et la sua correctione.

SMITHO. Havete detto l'aria vaporoso: che direste dell'aria puro et semplice?

THEOPHILO. Quello non é piu soggetto di calore, che di freddo; non é piu capace et ricetto di humore quando viene inspessato dal freddo; che di vapore et exalatione quando viene attenuata l'acqua dal caldo.

SMITHO. Essendo che nelle natura non é cosa senza providenza et senza causa finale: vorrei di nuovo saper da voi (perche per quel ch'havete detto, ciò si può perfettamente comprendere) per qual causa e' il moto locale della terra?

THEOPHILO. La caggione di cotal moto é la rinovatione et rinascenza di questo corpo. il quale secondo la medesima dispositione non può essere perpetuo; come le cose che non possono essere perpetue secondo il numero (per parlar secondo il comune) si fanno perpetue secondo la spetie: le sustanze che non possono perpetuarsi sotto il medesimo volto; si vanno tutta via cangiando di faccia: per che essendo la materia et sustanza delle cose incorrottile, et dovendo quella secondo tutte le parti esser soggetto di tutte forme, á fin che secondo tutte le parti (per quanto é capace) si fia tutto, sia tutto, se nõ in un medesimo tempo, et instante d'eternità; al meno in diversi tempi, in varii instanti d'eternità, successiva et vicissitudinalmente; per che quantumque tutta la materia sia capace di tutte le forme insieme; non però de tutte quelle insieme può essere capace ogni parte della materia. Pero á questa massa intiera della qual consta questo globo, questo astro, non essendo conveniente la morte, et la dissolutione; et essendo á tutta natura impossibile l'annihilatione: á tempi á tempi, con certo ordine, viene a' rinnovarsi, alterando, cangiando, mutando le sue parti tutte: il che conviene che sia con certa successione ogn'una prendendo il loco de l'altre tutte: per che altrimenti questi corpi che

THEOPHILUS. The reason is that fire makes more of an effort to escape from this region, which is more congenial to contrary qualities. In the same way water or vapour, if they were to find themselves in the region of fire or somewhere similar, would escape more rapidly than the exhalation which is more similar to fire itself, and has with it more of a natural affinity than an opposition or difference. You will have to be content with the fact that the Nolan has nothing to say about the movement or rest of the sun – or so it seems. In any case, the movement which you mention of the flames contained within a concave oven proceeds from the fact that the force of the fire, in its need to nourish and increase itself, pursues, combusts, alters, and changes the vaporous air, which, for its part, withdraws and escapes from the enemy of its being, who wishes to devour it.

SMITHUS. You said the vaporous air: what about air, pure and simple?

THEOPHILUS. It is no more subject to heat than it is to cold. It is no more able to receive humidity when it is thickened by the cold than it can receive vapour and exhalation when its water is rendered more subtle by heat.

SMITHUS. Given that in nature there is nothing without providence or a final cause, what I would really like to know from you (since so far you have been perfectly intelligible) is: what causes the local motion of the earth?<sup>17</sup>

THEOPHILUS. The cause of such motion is the renewal and rebirth of this body which, according to its natural disposition, cannot be perpetual. In the same way, things which cannot be perpetual as individuals (to use the common way of speaking) succeed in perpetrating themselves as a species; or the substances which cannot be perpetual with the same features perpetrate themselves by changing them. For the matter and substance of things is incorruptible, and is necessarily in all its parts subject to all forms; so that in all its parts, in so far as possible, it can become anything, and is everything, if not at once and in a single instant of eternity, then successively, in a number of instants, and according to various mutations.<sup>18</sup> And although matter as a whole is able to assume all forms at once, not every part of matter is able to assume them all at once. Furthermore, given that annihilation of nature in its entirety is impossible, and that death and dissolution are not appropriate to the whole mass of this globe or star, from time to time, according to an established order, it is renewed, altered, changed, and transformed in all its parts. This must happen successively, all parts taking the place of each other; for otherwise these bodies, which can dissolve,

sono dissolubili, attualmente talvolta si dissolverebbero: come avviene á noi particolari et minori animali. Ma ad costoro (come crede Platone nel Timeo, et crediamo anchor noi) é stato detto dal primo principio. VOI SIETE DISSOLVIBILI: MA NON VI DISSOLVERETE. Accade dunque che non é parte nel centro, et mezzo della stella, che non si faccia nella circonferenza, et fuor di quella: non é portione in quella extima et externa, che non debba tal volta farsi, et essere intima et interna: et questo l'esperiença d'ogni giorno nel dimostra: che nel grembo et viscere della terra, altre cose s'accogliono, et altre cose da quelle ne si mädan fuori. Et noi medesmi, et le cose nostre andiamo et vegnamo: passiamo et ritorniamo: et non è cosa nostra che nõ si faccia aliena, et non e' cosa aliena che non si faccia nostra. Et non é cosa della quale noi siamo, che tal volta non debba esser nostra, come non e' cosa la quale e' nostra, della quale non doviamo talvolta essere: se una é la materia delle cose: in un geno: se due sono le materie: in due geni: per che anchora non determino se la sustanza, et materia che chiamiamo spirituale, si cangia in quella che diciamo corporale, et per il contrario: ó veramente non. Cossi tutte cose nel suo geno hanno tutte vicissitudine di dominio et servitú, felicità et infelicitá, de quel stato che si chiama vita, et quello che si chiama morte; di luce et tēbre; di bene et male. Et nõ e' cosa alla quale naturalmēte convegna esser eterna eccetto che alla sustāza che e la materia; á cui non meno conviene essere in continua mutatione. Della sustanza soprasustanziale nõ parlo al presente, ma ritorno á ragionar particolarmente di questo grande individuo ch'è la nostra perpetua nutrice et madre, di cui dimandaste; per qual caggione fusse il moto locale; et dico che la causa del moto locale, tanto del tutto intiero, quanto di ciascuna delle parti, é il fine della vicissitudine, non solo per che tutto si ritrove in tutti luoghi: ma anchora perche con tal mezzo tutto habbia tutte dispositioni, et forme: per cio che degnissimamente il moto locale é stato stimato principio d'ogni altra mutatione, et forma: et che tolto questo non può essere alcun altro.

Aristotele s'há possuto accorgere della mutatione secondo le dispositioni et qualità che sono nelle parti tutte de la terra; ma non intese quel moto locale che é principio di quelle. Pure nel fine del primo libro della sua Metheora há parlato come un che profetiza, et divina; che benché lui medesimo tal volta non s'intenda, pure in certo modo zoppigando, et meschiando sempre qualche cosa del proprio errore, al divino furore, dice per il piu, et per il principale, il vero. Hor apportiamo quel che lui dice, et vero, et degno d'essere considerato; et poi aggiungeremo le cause di ciò, quali lui non há possuto conoscere. Non sempre (dice

might actually do so now and again, as happens to us individually and to the lower animals. But, as Plato wrote in the *Timaeus*, and as we also believe, it has been said from the beginning: "YOU ARE SUBJECT TO DISSOLUTION, BUT YOU WILL NOT DISSOLVE."<sup>19</sup> It thus happens that there is no part in the centre or middle of a star which does not become the circumference or some other part, and there is no part on the outside or exterior which does not become the inside or interior. This is demonstrated by everyday experience, which shows that certain things gather within the womb and bowels of the earth, while others are ejected from them. And we ourselves and the things which pertain to us come and go, pass and return; and there is nothing of ours which does not become alien to us, and nothing alien to us which does not become ours. There is nothing which we belong to which does not sometimes become ours, just as there is nothing which is ours to which we do not sometimes belong: if the matter of things is one only, then in one genus; if they are two, then in two. For I have not yet determined whether the substance and matter which we call spiritual changes into that which we call corporeal, and vice versa. In any case, all things in their genus partake of all kinds of vicissitude, of dominion and servitude, of happiness and unhappiness, of that state which we call life and that state which we call death, of light and shadow, of good and ill. There is nothing which can be said to be naturally eternal except the substance which is matter, which itself is in a continual state of mutation. I shall not speak at present of the supersubstantial substance, but shall keep to the subject of this huge body, our perpetual and maternal nourisher, of whose motion you wished to know the cause.<sup>20</sup> I am telling you that the cause of its local motion, both of the whole body and of its component parts, is the need for vicissitude: not only so that everything can be in every place, but also so that by this means everything has all dispositions and forms. For this reason, local motion has very justly been considered the principle of all other motion and form; for without this, there can be no other. Aristotle was able to notice this motion according to the dispositions and qualities of the parts of the earth; but he did not understand that kind of local motion which is the principal one.<sup>21</sup> Nevertheless, at the end of the first book of his *Meteorology* he spoke like a divine prophet; because, even if he himself did not understand his own words and remained therefore handicapped to some extent, continuing to mix some of his own errors with the divine frenzy, he still says things which on the whole are true. So I shall quote what he himself says, which is true and worthy of consideration; then I shall add some comments on the causes, which he himself was unable to understand.<sup>22</sup> "Not always," he says, "are the same

egli) gli medesmi luoghi della terra sō humidi ò secchi: ma secôdo la generatione et difetto di fiumi, si cangiano: però quel che fù et é mare, nō sempre é stato et sarà mare, quello ch'sarà et é stato terra, non é, ne fù sēpre terra; ma con certa vicissitudine, determinato circolo, et ordine, si dé credere che dove é l'uno sarà l'altro; et dov'é l'altro sarà l'uno. Et se dimādate ad Aristotele il principio et causa di ciò: rispōde che gl'interiori de la terra come gl' corpi delle piante et animali, hāno la perfettione, et poi invecchiano.

Ma é differenza trá la terra et gl'altri detti corpi; per che essi intieri in un medesimo tempo secondo tutte le parti hanno il progresso, la perfettione, et il mancamento, (come lui dice) il stato, et la vecchiaia: ma nella terra questo accade successivamente á parte á parte; con la successione del freddo et caldo, che caggiona l'aumento et la diminutione, la qual seguita il sole et il giro, per cui le parti della terra acquistano complessioni et virtu diverse. Da quà i' luoghi acquosi in certo tempo rimagnono: poi di nuovo si disseccano et invecchiano, altri si ravvivano et secondo certe parti s'inacquano. Quindi veggiamo svanir i' fonti, i' fiumi hor da piccioli divenir grandi, hor da grandi farsi piccioli et secchi al fine. Et da questo che gli fiumi si cassano, proviene che per necessaria conseguenza si tolgano i' stagni et mutinsi gli mari. il che però, accadendo successivamente circa la terra á tempi lunghissimi et tardi; á gran pena la nostra, et di nostri padri la vita puó giudicare; atteso che piu tosto cade la etá, et la memoria de tutte genti, et avvengono grandissimi corrottioni et mutationi, per desolationi, et desertitudini, per guerre, per pestilenze, et per diluvii; alterationi di lingue, et di scritture, trasmissioni, et sterilitá de luoghi: che possiamo ricordarci di queste cose da principio fin' al fine per si lunghi, varii, et turbolentissimi secoli. Queste gran mutationi assai ne si mostrano nelle antiquitá del Egitto, Nelle porte del Nilo le quali tutte (tolto il Canobico esito son fatte á opra di mano) Nell'habitationi della città di Memphi, dove i' luoghi inferiori son habitati dopo i' superiori. Et in Argo et Micena de quali al tempo di Troiani la prima reggione era paludosa, et pochissimi vivevano in quella, Micena per esser piu fertile, era molto piu honorata: del che á tempi nostri é tutto il contrario: per che Micena e' al tutto secca, et Argo è

places on the earth dry or damp; but they vary according to the increase or decrease in the rivers. So that what was once and still is sea, has not always been, and will not always be sea. That which will be and has been dry ground, is not and has not always been dry ground. But according to a certain order of vicissitude, in a fixed cycle, it is probable that where there was the latter there will be the former, and where there was the former there will be the latter." And if you were to ask Aristotle the principle and cause of this, he would reply that "the insides of the earth, like the bodies of plants and animals, attain perfection and then grow old."

But there is a difference between the earth and all the other bodies; because the latter change in every part, and reach perfection, and decline (as he calls it) from their state, and age, throughout the whole; whereas in the earth this happens successively to its different parts. These pass through a succession of heat and cold, which causes things, according to the circling movement of the sun, to grow and wither away, so that the parts of the earth acquire different appearances and characteristics. For this reason, watery places at times remain watery, but at others dry up and become parched, while other places become fertile, and in some parts watery. Then we see the sources disappear, and the rivers which were small become large, or those which were large become small and dry up altogether. And a necessary consequence of this parching of rivers is the disappearance of lakes and a change in the seas. However, as these things take place on the earth gradually, over very long and delayed periods of time, they can be judged with difficulty during our lifetime or even those of our fathers as well. For it is most likely that the ages and memories of all peoples fade, and also that many grave forms of deterioration and change are caused by the desolation and havoc wreaked by wars, pestilence, and floods. Alterations in languages and forms of writing, migrations, and the drying up of fertile places also interfere with our ability to remember these things from beginning to end, for so many long, varied, and turbulent centuries. Such great changes are nevertheless evident from the history of ancient Egypt, from the channels of entry to the Nile, which (except for that of Canopus) are all man-made, or the houses of the city of Memphis, whose lower floors were inhabited after the upper ones. As for Argos and Mycenae, the former region in the time of the Trojans was marshy and very scarcely populated, while the latter was fertile and valued far more highly; while in our own times it is exactly the contrary, as Mycenae is quite barren while



dovenuta temperata et assai fertile. Hor come accade in questi luoghi piccioli: il medesimo doviamo pensar circa grandi, et reggioni intiere: però come veggiamo che molti loghi che prima erano acquosi hora son continenti cossi á molti altri e' sopravvenuto il mare. Le quali mutationi veggiamo farsi á poco á poco come le gia dette, et come ne fan vedere le corrosioni de monti altissimi, et lontanissimi dal mare, che quasi fusser freschi, mostrano gli vestigii dell'onde impetuose. Et ne costa dall'istorie di Felice Martire Nolano, quale dechiarano al tempo suo (che é stato poco piu ó meno di mill'anni passati) era il mare vicino alle mura della città, dove e' un tempio chi ritiene il nome di Porto: onde al presente e' discosto dodeci milia passi. Non si vede il medesimo in tutta la Provenza? Tutte le pietre con son sparse per gli campi, non mostrano un tempo esser state agitate da l'onde? La temperie della Francia parvi che dal tempo di Cesare al nostro sia cangiata poco? All'hora in loco alchuno non era atta alle viti; et hora manda vini cossi delitiosi come altre parti del mōdo; et da settentrionalissimi terreni di quella, si raccogliono gli frutti de le vigne. Et questo anno anchora hò mangiate de l'uve de gli orti di Londra, non già cossi perfette come de peggiori di Francia: ma pur tale quali affermano mai esserno prodotte simili in terra Inglesa.

Da questo dunque che il mare Mediterraneo lasciando piu secca et calda la francia et le parti del'Italia, quali io con gli miei occhi hó viste, vā inchinando verso la Libra: seguita che venēdosi piu et piu ad scaldarsi l'Italia et la Francia, et temprarsi la Britannia; doviamo giudicare che generalmente si mutano gl'habiti de le reggioni, con questo che la disposition fredda si vā diminuendo verso l'Artico polo. Dimādate ad Aristotele: onde questo avviene? Risponde dal sole, et dal moto circolare. Non tanto confusa, et oscuramente, quāto anchora da lui divina, et alta, et verissimamente detto. Ma come? forse come da un filosofo? non. ma piu presto come da un divinatore. ò pur da uno che intendeva et non ardiva de dire, forse come colui che vede, et non crede á quel che vede, et se pur il crede dubita d'affirmarlo, temendo che alchuno nō venghi á constringerlo di apportar quella raggione la qual non há. Referisce, ma in modo col quale chiuda la bocca a chi volesse oltre sapere. ó forse é modo di parlar tolto dagl'antichi philosophi. Dice dūque che il caldo il

Argos has become temperate and quite fertile.<sup>23</sup> And what happens in such small regions is probably the same as what happens in much larger and more spacious ones; so that as we see that many places which previously were watery are now continents, in the same way many others have now been submerged by the sea. These mutations can be seen to happen gradually just like those others already mentioned, and they explain the apparently fresh corrosions in the highest mountains, situated far from the sea, but showing the traces of impetuous waves. The same thing is narrated in the stories of Felix, the martyr from Nola, which declare that in his time (which was more or less a thousand years ago) the sea reached up to the walls of the city, where a temple called the Port still stands, although now the sea is 12,000 yards away.<sup>24</sup> Can we not say the same thing of Provence? Do not all the stones scattered around the fields show that they were once buffeted by the waves? Has the French climate not known great changes from Caesar's time to ours? At that time, there was no place where vines would grow, while now it produces more delicious wines than any other part of the world. Even in its most northern lands the fruit is gathered from the vines; and this year I have eaten grapes from the gardens of London, which, although not so good as even the worst of the French, are considered to be the best ever produced in English soil.

So it is that the Mediterranean Sea, leaving France and parts of Italy dryer and warmer, as I have witnessed with my own eyes, curves down towards Libya. And consequently, as Italy and France get warmer and warmer and Britain more temperate, we can conclude that, generally speaking, the characteristics of regions are subject to change, and that the cold climate is diminishing in the region of the Arctic pole. Ask Aristotle: "Why is this so?" He will reply: "Because of the sun and its circular motion."<sup>25</sup> This is not said by him confusedly and obscurely, but rather divinely and most truly. In what way? That is, speaking philosophically? No, rather by intuition, or like someone who really knows but is afraid to speak out. Perhaps it would be better to say like somebody who sees but who does not believe what he sees, or if he does believe is doubtful about affirming it, because he is frightened that he may be asked to back himself up with arguments which he does not have. He says what he knows, but in a way that reduces to silence anyone who would like to know more; which is perhaps a way of talking taken from the ancient philosophers. So he says that the heat and the cold, the dry and the damp,

freddo, l'arido l'humido, crescono et mächano sopra tutte le parti della terra; ne la quale ogni cosa há la rinovatione, cōsistēza, vecchiaia, et diminutione: et volendo apportar la causa di questo dice. PROPTER SOLEM ET CIRCUMLATIONEM Hor per che non dice propter solis circulationem? perche era determinato appresso lui, et conceduto appo' tutti philosophi di suoi tempi, et di suo humore: che il sole con il suo moto non possea caggionar questa diversità, per che in quanto che l'ecliptica declina dall'Equinottiale; il sole eternamente versava trá i' doi punti Tropici, et però esser impossibile d'esser scaldata altra parte di terra: ma eternamēte le zone et i' climi essere in medesima dispositione. Per che nō disse per circolazione d'altri pianeti? perche era determinato già che tutti quelli (se pur alchuni per qualche poco nō trapassano) si muovono sol per quāto é la latitudine del zodiaco detto trito camino de gl'errāti. Per che nō disse per circolazione del primo mobile? per che nō conosceva altro moto che il diurno, et era á suoi tempi un poco de suspitione d'un moto di retardatione, simile á quello di pianeti. Per che non disse per la circolazione del cielo? per che non possea dire, come et quale ella potesse essere. Per che non disse per la circolazione de la terra? per che havea quasi come un principio supposto, che la terra e' immobile. Per che dumque lo disse? forzato da la verità. La quale per gli effetti naturali si fà udire. Resta dūque che sia dal sole, et dal moto. Dal sole dico per che lui é quel unico che diffonde et comunica la virtu vitale.

Dal moto anchora, per che se non si movesse o' lui á gl'altri corpi; o' gl'altri corpi á lui: come potrebbe ricevere quel che nō há, ó donar quelc'há? E' dumque necessario che sia il moto: et questo di tal sorte che non sia parziale: ma con quella raggione con cui causa la rinovatione di certe parti, vēgha ad apportarla á quell'altre; che come sono di medesima conditione, et natura: hanno la medesima potēza passiva, alla quale (se la natura non é ingiuriosa) deve corrispondere la potenza attiva.

Ma con ciò troviamo molto minor raggione per la quale il sole, et tutta l'università de le stelle s'habbino á muovere circa questo globo; che esso per il contrario debba voltarsi á l'aspetto dell'universo, facendo il circolo annuale circa il sole: et diversamente con certe regulate successioni per tutti i' lati svolgersi, et inchinarsi á quello, come á vivo elemento del fuoco.

increase and decrease above all the parts of the earth. By this process, everything is renewed and reconstituted, grows old and passes away; and wishing to point out the cause of this, he says: PROPTER SOLEM ET CIRCUMLATIONEM.<sup>26</sup> Now, why does he not say *propter solis circulationem*?<sup>27</sup> The reason is that he had already decided what was agreed on by all philosophers of his times and his type, that is that the sun and its movement cannot be the cause of these changes. For, in so far as the ecliptic is inclined away from the equinoctial plane, the sun moved always between the two tropics, and it was impossible that it should shed its warmth directly on any other part of the earth; so that the zones and the climates remained always the same.<sup>28</sup> Why did he not say because of the circular movements of other planets? Because it had already been determined that all of them move only within that width of the zodiac which is called the path traced by the wandering stars (even if some of them pass a little beyond its limits).<sup>29</sup> Why did he not say "because of the circling of the *primum mobile*"?<sup>30</sup> Because he knew of no other movement except the diurnal one, even if in his time a slight movement of retardation was suspected, similar to that of the planets.<sup>31</sup> Why did he not say "because of the circular movement of the sky"? Because he was unable to tell how and of what sort it might be. Why did he not say "because of the circular movement of the earth"? Because he had already presupposed as a principle that the earth is immobile. So why did he say it at all? Because he was forced to do so by the truth of the matter, which announces itself by natural means. So he established that it is by the sun and by movement.<sup>32</sup> I say by the sun, because the sun alone diffuses and communicates the power of life.

I repeat by movement, because unless the other bodies move towards the sun, or the sun towards them, how could it receive what it lacks, or give what it has? It is therefore necessary that there be movement, and that it should not be of a partial kind, but such that, in the same way that it causes the renovation of certain parts, it can cause it of all the others. For just as the parts are of the same nature and condition, so they have the same passive potential, to which (if nature is not to be unfair) must correspond an active potential.

But for precisely this reason it seems far less likely that the sun and the whole universe of stars should move around this globe, than the contrary: that is, that this globe should revolve with respect to the universe, making an annual circle around the sun and alternating this movement, in a regulated succession, by inclining itself and turning towards the sun, or the element of live fire.

Non e' ragione alcuna che senza un certo fine et occasione urgente gl'astri innumerabili che son tanti mondi, ancho maggiori che questo, habbino sì violenta relatione á questo unico. Non e' ragione che ne faccia dir piu tosto trepidar il polo, mutar l'asse del mondo, cespitar gli cardini del'universo, et sì innumerabili, piu grandi, et piu magnifici globi ch'esser possono, scuotersi, svoltarsi, ritorcersi, rappezzarsi, et al dispetto de la natura squartarsi in tanto, che la terra cossi malamente (come possono dimostrare i' sottili Optici et Geometri) venghi ad ottener il mezzo, come quel corpo che solo e' grave et freddo: il qual però non si può provar dissimile á qualsivogla altro che riluce nel firmamento: tanto nella sustanza, et materia; quanto nel modo della situatione: per che se questo corpo può esser vagheggiato da questo aria nel quale e' fisso, et quelli possono parimente esser vagheggiati da quello che le circonda. Se quelli da per se stessi come da propria anima et natura possono dividendo l'aria circuire qualche mezzo: et questo nientemeno.

SMITHO. Vi priego questo punto al presente si presuppona. Sí per che quanto á me tengo per cosa certissima che piu tosto la terra necessariamēte si muova; che sii possibile quella intavolatura, et inchiodatura di lampe: si ancho per che quanto á quelli che non l'hanno capito, e' piu espediente de chiararlo come materia principale, che in altro proposito toccarlo per modo di digressione. Però se volete compiacermi venite presto ad specifcarme i' moti che convegnono á questo globo.

THEOPHILO. Molto volentieri per che questa digressione ne harebbe fatto troppo differire di conchiudere quel che io volevo della necessità, et il fatto de tutte le parti de la terra, che successivamente devono participar tutti gli aspetti et relationi del sole, facendosi soggetto di tutte complessioni et habiti. Hor dunque per questo fine e' cosa conveniente, et necessaria, che il moto de la terra sia tale, per quale con certa vicissitudine dove e' il mare sia il continente, et per il contrario; dove é il caldo sii il freddo, et per il contrario; dove e' l'habitabile et piu temprato, sia il meno habitabile et temprato, et per il contrario; in conclusione, ciascuna parte venghi ad haver ogni risguardo, ch'hanno tutte l'altre parti al sole: a' fin che ogni parte venghi á participar ogni vita, ogni generatione, ogni felicità.

There is no reason whatever why, without a precise end in sight or pressing justification, the innumerable stars, which are so many worlds even larger than this one, should have such an obsessive relationship with this one world. There is no reason which should make us prefer to talk about the trepidation of the pole, the vacillations of the axis of the world, the trembling of the joints of the universe, and about all the innumerable, greatest, and most magnificent globes that there might be tossing, turning and returning, pulling themselves together; and in despite of nature tearing themselves apart so that the earth (as the precise opticians and geometricians like to show) may achieve the central place, as the coldest and heaviest of bodies.<sup>33</sup> This earth, however, cannot be proved to be dissimilar to any of the other bodies that shine in the firmament, either in its substance, its matter, or its mode of situation; for if this body can be intimately linked to the air within which it is fixed, then those others can be as closely linked to their surroundings. And if those others, of their own accord, as if spurred by their own nature and soul, can divide the air to circle around some central point, so can our earth do the same.

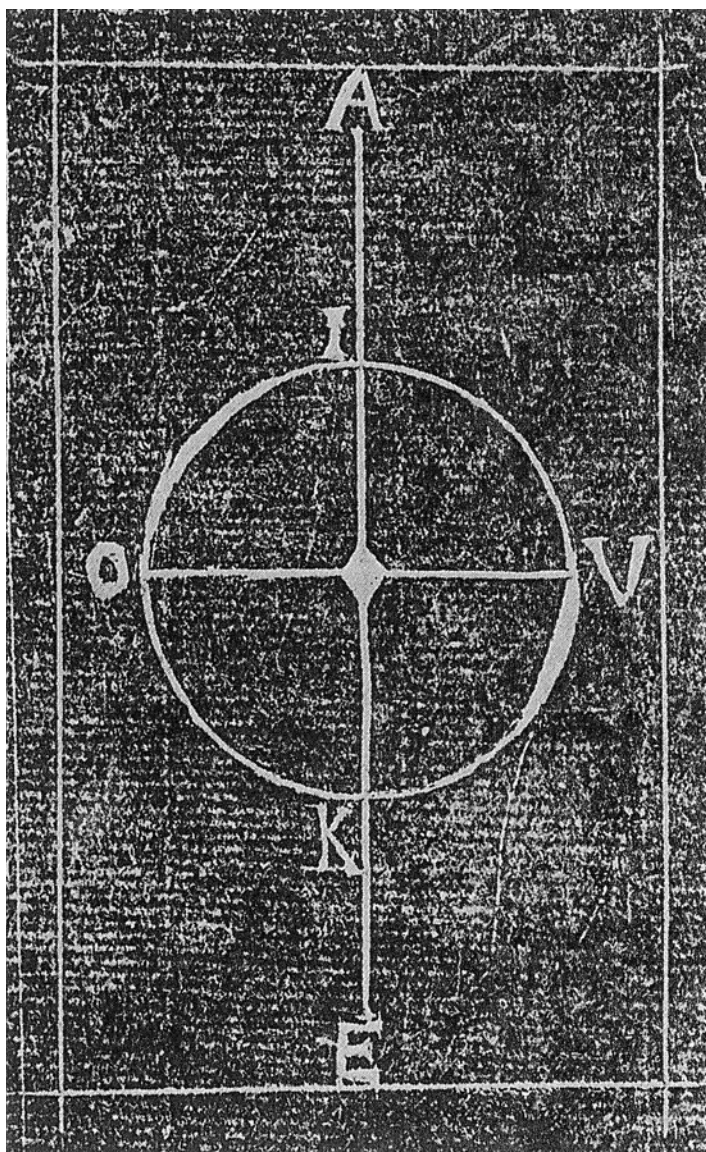
SMITHUS. I must ask you to consider this point as accepted. For in my opinion it is certainly true that the earth necessarily moves rather than the entire backdrop with its lamps nailed on to it. Indeed, to benefit those who have not yet understood this, it would be better to treat it as the principal subject of investigation rather than as a digression. So that if you wish to do me a favour, you should now give me a precise account of the movements which are appropriate to this globe.

THEOPHILUS. Most gladly. For such a digression would have put off for too long the conclusion I meant to reach, namely that all the parts of the earth must successively participate in all aspects and relations of the sun, subjecting themselves to all kinds of complexions and appearances. Now, in order for this to be attained, it is both appropriate and necessary for the motion of the earth to be such that, according to a regular vicissitude, where there was sea there is land, and vice versa; where it was cold it is hot, and vice versa; where it was temperate and possible to live it becomes less temperate and possible to live, and vice versa. In conclusion, every part should be subject to the sun in the same degree as all the others, so that each part can participate in every form of life, as well as in every form of generation and happiness.<sup>34</sup>

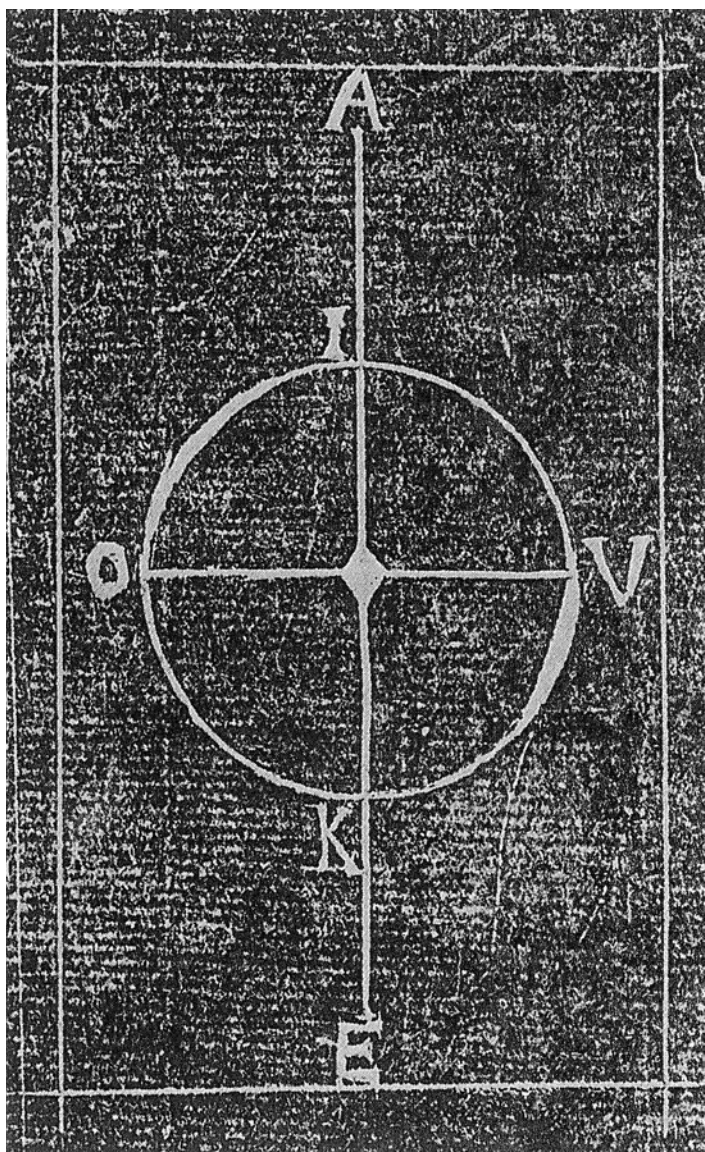
Prima dunque per la sua vita et delle cose che in quella si contengono, et dar come una respiratione et inspiratione col diurno caldo, et freddo, luce et tenebre: in spacio di vintiquattro hore equali la terra si muove circa il proprio centro, esponendo al suo possibile il dorso tutto al sole. Secondo per la regeneratione delle cose, che nel suo dorso vivono, et si dissolvono: con il centro suo circuisce il lucido corpo del sole, in trecento sessantacinque giorni, et un quadrante in circa; ove da quattro punti della eclyptica fá la crida della generatione, dell'adolescencia, della consistentia, et della declinatione di sue cose. Terzo per la rinovatione di secoli partecipa un altro moto per il quale quella relatione ch'há questo emisphero superiore della terra á l'universo, venga ad ottener l'emisphero inferiore, et quello succeda á quella del superiore. Quarto per la mutatione di volti et complessioni della terra, necessariamente gli conviene un'altro moto, per il quale l'habitudine ch'hà questo vertice de la tera verso il punto circa l'Artico, si cangia con l'habitudine ch'há quell'altro verso l'opposito punto de l'Antartico polo. Il primo moto si misura da un punto dell'equinottiale della terra si che torna ô al medesimo, ô circa il medesimo. Il secondo moto si misura da un punto imaginario de l'eclyptica (ch'e' la via della terra circa il sole) fin che ritorna al medesimo, ô circa quello. Il terzo moto si misura da la habitudine ch'há una linea hemispherica della terra, che vale per l'orizzonte; con le sue differenze al universo, fin che torni la medesima linea, ô proportionale á quella, alla medesima habitudine. Il quarto moto si misura per il progresso d'un punto polare de la terra, che per il dritto di qualche meridiame passando per l'altro polo, si converta al medesimo, ô circa il medesimo aspetto dove era prima. Et circa questo é da considerare che quâtumq; diciamo esser quattro moti; nulla dimeno tutti concorreno in un moto composto. Considerate, che di questi quattro moti. Il primo si prende da quel che in un giorno naturale, par che circa la terra ogni cosa si muova sopra i' poli del mondo, come dicono. Il secondo si prende da quel che appare ch'il sole in un'anno circuisce il zodiaco tutto, facendo ogni giorno secondo Tolomeo nella terza ditione del Almagesto, cinquanta nove minuti, otto secondi. 17. terzi. 13. quarti 12. quinti. 31. sestì. Secondo Alfonso. Cinquanta nove minuti, 8 secondi. 11 terzi. 37 quarti. 19 quinti. 13 sestì. 56 settimì. Secondo Copernico cinquanta nove minuti, 8 secondi, 11 terzi. Il terzo moto si prende da quel che par che l'ottava sphaera secondo l'ordine di segni, all'incontro del moto diurno, sopra i' poli del zodiaco, si muove si tardi,

First, then, in the space of twenty-four equal hours the earth moves around its own centre for its life and for that of the things contained in it, exposing its surface as much as possible to assure a kind of respiration and breathing by the cool and heat, the light and shade of day. Secondly, for the regeneration of the things which live and decay on its surface, it circles with its centre around the bright body of the sun, taking three hundred and sixty-five days and a quarter approximately, and announcing from the four points of the ecliptic the generation, growth, maturity, and decline of the things which are on it.<sup>35</sup> Thirdly, for the renovation of the earth over the centuries, it partakes of another motion by which the relationship that this upper hemisphere of the earth has to the universe is reflected in the lower hemisphere, which follows that of the upper.<sup>36</sup> Fourthly, for the mutation of the surfaces and complexions of the earth, it must necessarily partake of another motion according to which the position of this vertex of the earth that establishes its point in the Arctic circle changes in the same way as the opposite point on the Antarctic pole.<sup>37</sup> The first movement is measured by the return, or almost, to its place of departure, of an equinoctial point of the earth. The second movement is measured from an imaginary point on the ecliptic (which is the path of the earth around the sun) until it returns, or almost, to its point of departure. The third motion is measured by the relation that a hemispherical line of the earth, which is the same as its horizon, has to the rest of the universe, until it returns to the same line or one proportional to it, establishing the same relationship. The fourth motion is measured by the progress made by a polar point of the earth that, passing through the straight line of some meridian to the other pole, directs itself towards the same position, or nearly the same position, as it was in at the beginning. And with respect to this subject, it should be understood that although we say there are four movements, nevertheless they all combine to make one composite movement. Consider how the first of these four movements relates to the way in which, in a natural day, it appears that everything revolves around the earth over the poles of the world, as they call them. The second movement relates to the way in which it appears that the sun moves through the whole zodiac at a rate calculated by Ptolemy, which he gives in the *Almagest* as 59 minutes, 8 seconds, 17 thirds of a second, 13 fourths, 12 fifths, 31 sixths; while Alfonso calculated 59 minutes, 8 seconds, 11 thirds, 37 fourths, 19 fifths, 13 sixths, 56 sevenths; and Copernicus calculated 59 minutes, 8 seconds, 11 thirds. The third movement relates to the way in which it appears that the eighth sphere, according to the order of the signs, combining with the daily motion above the poles of the zodiac, moves





[Fig. 9 © The British Library Board, C.37.c.14.(2.) p. 104.]



[Fig. 9 Diagram of the co-ordinates of the movements  
of a spinning ball thrown vertically into the air.

© The British Library Board, C.37.c.14.(2.) p. 104.]

che in ducento anni non si muove piu ch'un grado, et 28 minuti: di modo che in quaranta nove milia anni vien á compir il circolo, il principio del qual moto attribuiscono ad una nona sphaera. Il quarto moto si prende dalla trepidatione, accesso et recesso, che dicono far l'ottava sphaera sopra dui circoli equali, che fingono nella concavitá della nona sphaera, sopra i' principii dell'Ariete, et Libra del suo zodiaco. Sí prende da quel che veggono, esser necessario che l'ecliptica dell'ottava sphaera non sempre s'intenda intersecare l'equinottiale ne medesmi pñti; ma tal volta essere nel capo d'Ariete, tal volta oltre quello da l'una et l'altra parte dell'ecliptica. Da quel che veggono le grandissime declinationi del zodiaco non esser sempre medesme: onde necessariamente seguita che gl'equinottii et solstitii cõtinuamẽte si variino. come effettivamente è stato da molto tẽpo visto. Considerate, che quantũque diciamo quattro essere questi moti; nulladimeno e' da notar che tutti concorreno in un composto. Secondo che benchè le chiamiamo circolari, nullo però di quelli e' veramente circolare. Terzo che benchè molti si siino affaticati di trovar la vera regola de tai moti; l'han fatto, et quei che s'affaticarõno lo faranno in vano: per che nessuno di qué moti é á fatto regolare et capace di lima geometrica. Sõ dũq; quattro; et nõ denno esser piu, ne meno moti (voglo dir differẽze di mutatiõ locale nella terra) de quali l'uno irregolare necessariamente rẽde gl'altri irregolari, i quali voglo che si descrivano nel moto di una palla che é gittatá nell'aria. Quella prima col cẽtro si muove da A, in B. Secõdo intratanto che con il centro si muove da alto á basso; ó da basso in alto: si svolge circa il proprio centro, movendo il punto I. al loco del punto K. et il punto K, al loco del punto I. Terzo tornando á poco á poco, et avanzando di camino et velocità di giro, over perdendo et scemando (come accade alla palla che montando in alto; da quel che prima si moveva piu velocemente, poi si muove piu tardi, et il contrario fá ritornando al basso, et in mediocre proportion nelle mezze distanze, per le quali ascende et descende) á quella habitudine che tiene questa metà della circonferenza, che e' notata per il 1.2.3.4. promuoverá quell'altra metà la quale é 5.6.7.8. Quarto per che questa conversione non é retta, atteso che non é come d'una ruota che corre con l'impeto d'un circolo, in cui consista il momento della gravità; ma si vá obliquando, perche e' di un globo il quale facilmente può inchinarsi á tutte parti: però il punto I. et K. non sempre si converteno per la medesma retitudine, onde e' necessario che o' a' lungo ó á breve; ó ad interrotto, o' á continuo andare, si dovenghi á tanto, che si adempisca quel moto per il quale il punto O, si faccia dove e' il punto V, et per il contrario. Di questi moti, uno che non sii regolato, e' sufficiente á far

so slowly that in 200 years it does not succeed in moving more than 1 degree and 28 minutes; so that it achieves its complete revolution in 49,000 years. It is the principle of this motion which they attribute to a ninth sphere.<sup>38</sup> The fourth movement is calculated according to the trepidation, or the moving backwards and forwards which they say is done by the eighth sphere above two equal circles; and these they claim to place within the concavity of the ninth sphere, above the places of the Ram and the Balance within the zodiac. It is clear from this explanation that they consider it necessary that the ecliptic of the eighth sphere does not always intersect the equinoctial circle in the same points, but is sometimes to be found at the head of the Ram, sometimes beyond it on one or other side of the ecliptic. It is this that causes them to see the huge revolutions of the zodiac as not always exactly the same; from which it follows that the equinoxes and the solstices continually vary, as in fact has been observed over a long period.<sup>39</sup> Consider that although we say that these movements are four in kind, in fact they combine to make one composite movement. Secondly, although we call them circular, none of them is truly circular. Thirdly, although many have attempted to verify the rules of such movements, they have tried, and in the future will continue to try, in vain. For none of those movements are truly regular, in a geometrical sense. There are four of them, neither more nor less (I am referring to the different local motions of the earth); and when one of them is irregular, it necessarily renders the others irregular. I would like to illustrate this by the movement of a ball when it is thrown up into the air. In the first place its centre moves from A to B.<sup>40</sup> Secondly, while its centre moves upwards or downwards, the ball also rotates around its centre, moving from point I to point K, and point K to point I.<sup>41</sup> Thirdly, turning very slightly, and advancing in the path and speed of its rotation, or conversely losing and diminishing (as happens to the ball which ascends, and loses its initial rapid movement, getting gradually slower, the contrary happening when it descends, while in the middle reaches of its path between its ascent and descent it has a proportionally medium velocity), the part of that half of the circumference which is denoted by 1,2,3,4, will take the place of the other half denoted by 5,6,7,8.<sup>42</sup> Fourthly, this conversion is not linear, because it is not like a wheel turning in a full circle with an impetus which may be considered its moment of gravity. Rather, the ball turns like a globe obliquely, twisting in every direction. Hence the points I and K will not be converted exactly into one another, with the result that sooner or later, whether by a continuous or interrupted process, that movement will be achieved which causes the point O to take the place of the point V,

che nessuno de gl'altri sia regolato. Uno ignoto fá tutti gli altri ignoti. Tutta volta hanno un certo ordine con il quale piu, et meno s'accostano, et allōtanano dalla regolaritá. Onde in queste differenze di moti, il piu regolato che é piu vicino al regolatissimo é quello del centro. Appresso á questo é quello circa il centro per diametro, piu veloce. Terzo é quello che con la irregolaritá del secondo (quale consiste nell'avanzar di velocitá et tarditá) a' mano á mano muta l'intero aspetto dell'emisphero. L'ultimo irregolatissimo et incertissimo, e' quello che [Figure 9] cangia i' lati; per che talvolta in loco d'andar avanti, torna á dietro, et con grandissima inconstantia viene al fine á cangiar la sedia d'un punto opposito con la sedia d'un altro. Similmente la terra, Primo há il moto del suo cētro, che é annuale, piu regolato che tutti, et piu che gl'altri simile á se stesso. Secondo men regolato é il diurno; Terzo l'irregolato chiamião l'emisphericò; Quarto irregolatissimo é il polare óver colurale.

SMITHO. Questi moti vorrei sapere cō qual ordine et regola il Nolano ne fará comprendere?

PRUDENTIO. Ecquis erit modus, novis usque, et usque semper indigebimus theoriis?

THEOPHILO. Nō dubitate Prudentio, per che del bon vecchio non vi si guasterà nulla. A' voi Smitho mandarò quel dialogo del Nolano, che si chiama Purgatorio dell'inferno; et ivi vedrai il frutto della redentione. Voi Frulla tenete secreti i' nostri discorsi; et fate che non venghino á l'orechie di quelli ch'habbiamo rimorduti; á fin che non s'adirino contra di noi: et venghino á donarne nove occasioni, per farsi trattar peggio, et ricever meglo castigho. Voi Maestro Prudentio fate la conclusione, et una epilogatione morale solamente del nostro tetralogo: per che l'occasione specolativa, tolta dalla Cena de le ceneri, é già conclusa.

### **Prudentio.**

Io ti scongiuro Nolano Per la speranza c'hai nell'altissima, et infinita unitá che t'avviva, et adori. Per gl'eminenti numi, che ti proteggono, et che honori, Per il divino tuo Genio che ti defende, et in cui ti fidi: che vogli guardarti di vile, ignobili, barbare, et indegne conversationi; á fin che non contrahi per sorte tal rabbia, et tanta ritrosia, che dovenghi

and vice versa.<sup>43</sup> It is sufficient that one of these movements is irregular for none of the others to be regular; and if one of them is unknown, all of them are unknown. Nevertheless, they do have a certain kind of order that makes them more or less regular. Of these different movements, the most regular of all, being almost completely regular, is that of the centre. The next most regular is that of the diameter around the centre, which is faster. The third is that which with the irregularity of the second (consisting in an increase and decrease in velocity) gradually gives rise to a change in the whole position of the hemispheres. The last, which is extremely irregular and uncertain, is the one that changes the sides; [Figure 9] for sometimes rather than going forward it goes backwards, and only in a very inconstant way does it cause the position of one side to change together with the position of its opposite side. Similarly the earth has a first movement of its centre, which is annual and is the most regular of all, and the one which varies least; secondly, there is the daily motion, which is less regular; thirdly, the motion which they call hemispheric, which is less regular still; fourthly, and most irregular of all, there is the movement of the poles or the colures.

SMITHUS. I would like to know with what order and regularity the Nolan calculates and measures these motions.<sup>44</sup>

PRUDENTIUS. *Ecquis erit modus? novis usque et usque semper indigebimus theoriis?*<sup>45</sup>

THEOPHILUS. Don't worry, Prudentius, because nobody is going to spoil the good old theory. Smithus, I shall send to you the Nolan's dialogue entitled *The Purgatory of Hell* and there you will find the fruit of redemption.<sup>46</sup> You, Frulla, should treat what we have said as a secret, and see that it does not reach the ears of the people we have attacked; otherwise they will be furious with us, and will provide new occasions for us to treat them even worse and to castigate them even further. You, Master Prudentius, are to make the concluding remarks, and provide a purely moral epilogue to our tetralogue; for the speculative part of it, arising from the Ash Wednesday supper, has already been concluded.

### Prudentius

I exhort you, Nolan, by the hope that you place in the highest and infinite unity that gives you life; by the eminent spirits that protect you, and which you honour; by your own divine genius which defends you, and in which you place your trust: that you stay on your guard against vile, ignoble, barbarous, and unworthy conversations, so that you shall never

forse come un satyryco Momo trá gli dei, et come un Misanthropo Timon trá gl'huomini: Rimanti trà tanto appó l'illustrissimo et generosissimo animo del sig. di Mauvissiero (sotto l'auspicii del quale cominci á publicar tanto solenne philosophia) che forse verrá qualche sufficiētissimo mezzo per cui gl'astri, et potentissimi superi ti guidaranno á termine tale; onde da lungi possi riguardar simil brutagla. Et voi altri assai nobili personaggi siete scongiurati, Per il scettro del fulgoäte Giove, Per la civilitá famosa di Priamidi. Per la magnanimità del Senato et Popolo Quirino, et Per il nettareo convito che sopra la Ethiopia buglente fan gli Dei: che se per sorte un'altra volta avviene, che il Nolano per farvi servizio, ó piacere, ò favore, venghi á pernottar in vostre case: facciate di modo, che da voi sii difeso da simili rancontri. Et dovèdo per l'oscuro cielo ritornar á la sua stàza, se non lo volete far accompagnar con cinquāta, ó cento torchi (i quali, anchor che debba marciar di mezo giorno, non gli mancharanno, se gl'avverrá di morir in terra catholica Romana) fatelo almeno accompagnar con un di quelli. o' pur se questo vi parrá troppo: improntategli una lanterna, con un cādelotto di sevo dentro; á fin ch'habbiamo faconda materia di parlar della sua buona venuta da vostre case, della qual non si é parlato hora.

Adiuro vos O' Dottori Nundinio, et Torquato. Per il pasto de gl'Antropophagi. Per la pila del Cinico Anaxarcho. Per gli smisurati serpenti di Laocoöte. et Per la tremebōda piaga di san Rocco: che richiamate (se fusse nel profondo abisso, et dovesse essere nel giorno del giuditio) quel rustico et incivile vostro pedagogo che vi dié creanza, et quell altro Archiasino et ignorante, che v'insegnò di disputare; à fin che vi risaldano le male spese, et l'interesse del tempo, et cervello che v'han fatto perdere. A diuro vos barcaroli Londrioti che con gli vostri remi battete l'onde del Tamesi superbo; per l'honor d'Eveno et Tyberino, per quali son nomati dui famosi fiumi; et per la celebrata, et spaciosa sepoltura di Palinuro: che per nostri danari ne guidate al porto. Et voi altri, Trasoni salvatici et fieri Mavortii del popolo villano. siete scongiurati Per le carezze che ferno le Strimonie ad Orpheo Per l'ultimo servizio che ferno i' cavalli a Diomede, et al fratel di Semele, et per la virtu del sassifico brocchier dí Cepheo: che quando vedete, et incontrate i' forastieri, et viandanti; se non volete astenervi da qué visi torvi, et Erinnici: al meno l'astinenza da quegl'urti vi sii raccomandata. Torno a scongiurarvi tutti insieme, Altri per il scudo et asta di Minerva. Altri per la generosa prole

meet again with that kind of anger or resentment which is likely to turn you into a satiric Momus among the gods, or a misanthropic Timon among men.<sup>47</sup> May you remain familiar with the illustrious and most generous spirit of the Lord of Mauvissière (under whose auspices you have begun to publish a philosophy which treats of such weighty matters): for it is possible that some means will present itself which will allow the stars and powerful bodies above to guide you to a place from which you can watch such brutes from a distance. And you others – noblemen as you are – you are exhorted by the shining sceptre of thundering Jupiter, by the legendary courtesy of the descendants of Priam, by the magnanimity of the Quirinal senate and people, and by the nectarian feast consumed by the gods above the shimmering heat of Ethiopia: that should it happen a second time that the Nolan, in order to serve or to please you or to do you a favour, chooses to pass the evening in your houses, you see to it that you defend him against similar encounters.<sup>48</sup> Furthermore, when he returns home to his rooms at night, if you do not wish to dispose things so that he is accompanied by fifty or a hundred torch-bearers (which he will not lack, even at noon, if he happens to die in Roman Catholic lands), see to it that he has at least one such to accompany him. If even this should appear excessive to you, at least lend him a lantern with a tallow candle inside, so that we have occasion to speak about his happy return from your houses; which we have not been able to do in this case.<sup>49</sup>

*Adiuro vos*, doctors Nundinius and Torquatus, by the repast of the Anthropophagi, by the mortar of the cynical Anaxarchus, by the entangled serpents of Laocoon, and by the trembling wound of Saint Roche: that you castigate (even if he were in the profound abyss, and should happen to have reached his day of judgment) that uncouth and uncivil teacher who educated you, as well as that other extremely asinine and ignorant person who taught you to dispute.<sup>50</sup> Thus may you be repaid, Theophilus, for your unprofitable expenses, and given back the interest in terms of time and mental labour which they have made you lose. *Adiuro vos*, boatmen of London who ply with your oars the proud waves of the Thames, by the honour of Evenus and Tiberinus, who gave their names to two famous rivers, and by the celebrated and spacious burial place of Palinurus: that in exchange for our money you guide us to our destination.<sup>51</sup> And you others, villainous masses of savage Thrasones and proud mercenaries, you are exhorted by the caresses given to Orpheus by the Strymoniae, by the last favour accorded by the horses to Diomedes and to Semele's brother, and by the powers of the stone jar of Cepheus: that when you see and encounter foreigners and travellers, if you are



del Troiano cavallo. Altri per la veneranda barba di Esculapio. Altri per il tridente di Nettuno. Altri per i' baci che dierno le cavalle á Glauco: ch'un'altra volta con meglor dialogi ne facciate far notomia di fatti vostri: o' al men tacere.

Il fine de la cena de le ceneri.

unable to refrain from making furious grimaces, at least you manage to abstain from pushing them over.<sup>52</sup> And now I exhort you all together – some of you by Minerva’s shield and spear; others by the generous offspring of the Trojan horse; some by the venerable beard of Aesculapius; some by Neptune’s trident; others by the kisses which the mares gave to Glaucus<sup>53</sup> – that another time you immortalize your deeds in better dialogues, or else be silent.

End of the Ash Wednesday Supper.

## *Appendix*

[The text presented here is based on the printed version of folio D in the copy held by the Trivulziana Library in Milan (call number Triv. L594), commonly known as Dt to distinguish it from the so-called “vulgata,” commonly known as Dv, which is presented in this volume as the definitive text. An anastatic reprint of Dt is in Giordano Bruno, *Opere italiane: ristampa anastatica delle cinquecentine, II*, ed. Eugenio Canone (Florence: Olschki, 1999), 327–466. The same editorial criteria have been used here as in the main text based on the British Library copy of Bruno’s work. The few opening pages of Dialogue III which close folio D are not included, as the differences between the two versions are minimal.]

[non per suo difetto, ma per torto di fortuna] e’ gionto a’ termine tale. Non solo e’ degno di honore quell’uno che há meritato il palio: ma anchor quello, et quel altro, ch’há si ben corso, ch’e’ giudicato ancho degno, et sufficiente del’haver meritato, ben che non l’abbia vinto. et son vituperosi quelli ch’al mezzo de la carriera desperati si fermano, et non vanno (anchor che ultimi) a’ toccar il termine con quella lena, et vigor, che gl’e’ possibile.

Vidi ego lecta diu, et multo spectata labore  
Degenerare tamen, ni vis. sic omnia fatis  
In peius ruere, ac retrò sublata referri,  
Non aliter quã qui aduerso vix flumine lembũ  
Remigiis subigit: si brachia fortẽ remisit;  
Atque illũ in preceps pronò rapit alueus amne.

## Appendix

[The translation presented here is based on the printed version of folio D in the copy held by the Trivulziana Library in Milan (call number Triv. L594), commonly known as Dt to distinguish it from the so-called “vulgata,” commonly known as Dv, which is presented in this volume as the definitive text. An anastatic reprint of Dt is in Giordano Bruno, *Opere italiane: ristampa anastatica delle cinquecentine, II*, ed. Eugenio Canone (Florence: Olschki, 1999), 327–466. The same editorial criteria have been used here as in the main text based on the British Library copy of Bruno’s work. The few opening pages of Dialogue III which close folio D are not included, as the differences between the two versions are minimal.]

[But evil fortune and not their own fault] has brought them to such an end. He who has won the prize is not alone in gaining such an honour. All those who run well deserve to win, even if they fail to do so in fact, and those who give up in despair in the middle of the race, instead of reaching the end with vigour and force (even if they are the last), should be ashamed:

I’ve noticed seed long chosen and tested with utmost care  
Fall off, if each year the largest  
Be not hand-picked by human toil. For a law of nature  
Makes all things go to the bad, lose ground, and fall away;  
Just as an oarsman, when he is sculling his skiff against  
The current, needs but relax the drive of his arms a little  
And the current will carry him headlong away downstream.<sup>1</sup>

Venca dunque la perserveranza; per che se la fatica e' tanta; il premio non sarà mediocre. Tutte cose pretiose son poste nel difficile: Stretta et spinosa e' la via de la beatitudine; Gran cosa forse ne promette il cielo per il che dice il poeta.

Pater ipse colendi  
 Haud facilem esse viam voluit, primusque per artē  
 Movit agros: curis acuens mortalia corda,  
 Nec torpore gravi passus sua regna veterno.

PRUDENTIO. Questo e' un molto emphatico progresso, che converrebbe a' una materia di piu grande importanza.

FRULLA. E' lecito, et e' in potestà di principi, de essaltar le cose basse: le quali se essi sarran degne, saran giudicate degne, et veramente saran degne, et in questo gl'atti loro son piu illustri et notabili : che si aggrandissero i' grandi; i' quali non e' cosa che non credeno meritar per la sua grandezza, ò vero che si mātenessero i' superiori ne la sua superiorità, i' quali diranno quello, cōvenirgli nō per gratia, cortesia, et magnanimità di principe: ma per giusticia et raggione: Hor applica á proposito del discorso del nostro Theophilo. Pure (Maestro Prudentio) se vi par anchor aspro; distaccalo da questa materia, et attacalo ad un altra.

PRUDENTIO. Io non dissi altro, eccetto che il progresso pareva molto emphatico per questa materia, che s'offre al presente.

FRULLA. Volevo io anchor dire che Theophilo par ch'habbia un poco del Prudentio: ma perdonategli, per che (come mi pare) questa vostra infirmità é contagiosa. Et non dubitate, p che Theophilo sá far de necessitá vertu, et de infirmitá cautela, preservatione, et sanitá. Seguite Theophilo il vostro discorso.

PRUDENTIO. Ultra Domine.

SMITHO. Via sú affrettiamoci á fin ch'il tempo non ci vegna meno.

THEOPHILO. Hor alza i' vanni Theophilo, et ponti in ordine, et sappi ch'al presente non s'offre occasione di apportar de le piu alte cose del mondi. Nō hai quá materia di parlar di quel nume de la terra, di quella singolare, et rarissima dama, che da questo freddo cielo, vicino á l'Arctico parallelo, á tutto il terrestre globo rende sí chiaro lume. Elizabetta dico, che per titolo, et dignitá Regia, non é inferiore á qualsivogla Re, che sii nel mōdo. Per il giodicio, saggezza, consiglio, et governo; non é seconda á nessun che porti scettro in terra. Ne

Then let perseverance win. If the effort has been significant, the reward will not be small. It is difficult to obtain anything valuable, and the way to beatitude is straight and narrow. The heavens seem to promise much, which is what made the poet say:

For the Father of Agriculture  
Gave us a hard calling: he first decreed it an art  
To work the fields, sent worries to sharpen our mortal wits  
And would not allow his realm to grow listless from lethargy.<sup>2</sup>

PRUDENTIUS. This is a very emphatic hyperbole, which would be more suited to a subject of greater importance.

FRULLA. It is in the power of princes, and is allowed them, to exalt lowly things, which, once they are judged worthy of note, will become so in fact. In this way, their acts may be judged more illustrious and renowned than if they were praising the great. For the great think that, in virtue of their greatness, they deserve everything imaginable. Being already superior, they expect to be confirmed in their superiority, which they think is not so much due to them by the grace, courtesy, or magnanimity of the prince as by the just and true order of things. Now apply this to the speech of our friend Theophilus: or otherwise, Master Prudentius, if you find it a little too harsh, detach it from this subject matter and attach it to another.

PRUDENTIUS. I simply observed that such a hyperbole appeared to me too emphatic for the subject at present under consideration.

FRULLA. I could add that Theophilus in this seems to share some of the characteristics of Prudentius. He should be forgiven, however, for it is my opinion that this weakness of yours is contagious. And there is no need to worry, for Theophilus knows how to make a virtue of necessity, and how to derive caution, survival, and sanity from infirmity. Go on, Theophilus, with what you were saying.

PRUDENTIUS. *Ultra, domine.*<sup>3</sup>

SMITHUS. Come on, do hurry up, before the time runs out.

THEOPHILUS. Now spread your sails, Theophilus, and clear your decks, and persuade yourself that the time has not yet come to set your course towards the highest places in the world. You are not yet worthy to speak of that light of the earth, that most singular and rare lady who sheds her beams throughout the globe from this cold sky, close to the Arctic parallel – Elizabeth, I mean, whose regal titles and dignity are inferior to no king's in the world. For no one who holds a sceptre on the earth is second to her in wisdom, counsel, and the art of government.

la cognitione de le arti, notitia de le scienze, intelligenza et pratica de tutte lingue, che da persone popolari, et dotte possono in Europa udirse; senza contradittione alchuna e' a' tutti gl'altri precinpi superiore, et trionfatrice di tal sorte; che se l'imperio de la fortuna corrispondesse, et fusse agguagliato à l'imperio del generosissimo spirito et ingegno: sarebbe l'unica imperatrice di questa terrestre sphaera; et con piu piena significatione quella sua divina mano sustentarebbe il globo di questa universale monarchia.

Non hai quã materia di parlar di quell'animo tanto heroico, che già vinticinque anni, et piu, col cenno de gl'occhi sui, nel centro dele borasche d'un mare d'adversità; há fatto trionfar la pace, et la quiete; mantenutasi salda in mezzo di tanto gaglardi flutti, et tumide onde di sì varie tempeste; co le quali, á tutta possa gl'há fatto empito questo orgoglioso, et pazzo Oceano, che da tutti contorni la circonda.

Non hai quã materia di far discorso di colei, la quale se volessi assomigliar á Regina di memoria di passati tempi: profanaresti la dignità del suo essere singolare et sola; perche di gran lunga avanza tutte: Altre in grandezza de l'authorità, Altre ne la perseverãza del lungho, intiero, et non anchora abbreviato governo, Tutte poi ne la sobrietà, pudicitia, ingegno, et cognitione. Tutte ne l'hospitalità et cortesia, co la quale accoglie ogni sorte di forastiero, che non si rende al tutto incapace di gratia et favore.

Nõ te si offre occasione, di parlar de la gẽerosissima humanità de l'illustrissimo Monsig. Conte Roberto Dudleo, Conte di Licestra &c. tanto conosciuta dal mondo, nominata insieme con la fama del Regno, et la Regina d'Inghilterra, ne circostati regni; tanto predicata da í cuori di generosi spirti Italiani quali specialmente da lui con particolar favore (accompagnando quello de la sua signora) son stati, et son sempre accarezzati. Questo insieme co l'eccellentissimo sig. Francesco Walsingame, gran Secretario del Regio consiglio (come quelli che siedono vicini al sole del Regio splendore) con la luce de la lor gran nobiltade son sufficienti a' spengere, et annullar l'oscurità: et con il caldo de l'amorevol cortisiã disrozzar et purgare qualsivogla rudezza, et rusticità, che ritrovar si possa non solo trà Brittanni: ma ancho trà Scythi, Arabi, Tartari, Canibali, et Antropòphagi. Non ti viene a' proposito di referire l'honesta conversatione, civiltà, et buona creanza di molti cavallieri, et molto nobili personaggi Inghilesi, trà quali e' tanto conosciuto, et a' noi particolarissimamente, per fama prima, quando eravamo in Milano, et in Francia; et poi per esperienza, hor che siamo ne la sua patria, manifesto, il móto illustre, et eccellente cavalliero, Sig. Phillippo Sidneo, di cui il tersissimo ingegno (oltre í lodatissimi costumi) e' sì raro, et singolare: che difficilmente trà singolarissimi et rarissimi, tanto fuori quanto dentro Italia ne troverete un simile.

Her knowledge of the arts, her notions of science, the intelligence and ability with which she practises all languages the educated or simple people in Europe can understand, are without any doubt superior to those of all other princes. Her triumph is such that if the empire of fortune corresponded to that of her generous spirit and wit, she would be the only empress on this terrestrial sphere, and her divine hand would support the globe of universal monarchy with greater effect.

It is not your task, Theophilus, to speak of that heroic soul who, twenty-five years ago or more, with one glance, imposed peace and quiet at the very eye of the storms raging in a sea of adversity.<sup>4</sup> She has remained firm in the midst of the towering waves and rolling breakers of many a tempest raised around her by this proud and furious Ocean that surrounds her on every side.

It is not for you to speak of her who, if represented as a fabled queen of long ago, would be defiled in the dignity of her single and solitary state. For she surpasses them all: some for the strength of her authority, others for her perseverance during her long, continuing, and uninterrupted reign, and all of them for her sobriety, reserve, wit, and knowledge. She outdoes them all for the hospitality and courtesy with which she receives all those foreigners who show themselves worthy of her grace and favour.

This is not the right moment in which to speak of the generosity and kindness of that illustrious nobleman Robert Dudley, Earl of Leicester, etc., so well known in neighbouring countries for a name fit to be pronounced together with that of the kingdom and the queen of England themselves. Many are the generous Italian hearts who have been favoured by special attentions from him (and from his lady).<sup>5</sup> Together with him, we see the excellent Sir Francis Walsingham, Secretary to the Queen's Privy Council, who, like those who sit beside the sun of royal splendour, is able to dissolve and disperse the shadows with the beams of his nobility.<sup>6</sup> With the warmth of loving courtesy he purges and renders more civilized whatever uncouthness and vulgarity may be found, not among Britons only, but also among Scythians, Arabs, Tartars, cannibals, and anthropophagi. It would be inappropriate to refer here to the honest conversation, the civility and courtesy of many knights and noble Englishmen, among which, in particular, that most illustrious and excellent knight Sir Philip Sidney, known to us by name when we were in Milan and in France, and then in person now that we are in his country.<sup>7</sup> His penetrating intelligence as well as the excellence of his manners are so rare and so unusual that it would be difficult to find the like among the most intelligent and the best mannered of men in Italy, or abroad.



Tolto ne e' a' fatto materia di lode: ma importunissimamente, a' dispetto del mondo ne viene a' proposito una plebe, la quale in esser plebe, non e' inferiore a' plebe alchuna, che pasca nel suo seno la pur troppo prodiga terra: perche questa veramente dá saggio di plebe de tutte le plebe che io possa haver fin hora conosciute irreverente, irrispettevole, di nulla civiltà, male allevate. Quando vede un forastiero, sembra (per dio) tanti lupi tanti orsi: et con il suo torvo aspetto gli fanno quel viso; che saprebbe far un porco ad un che venesse a' togli il tino d'avanti. Questa ignobilissima plebe, per quanto appartiene al proposito, e' divisa in due parti.

PRUDENTIO. Omnis divisio debet esse bimembris, vel reducibilis ad bimembrem.

THEOPHILO. De quali l'una e' de arteggiani, et bottegari, i' quali conoscendoti in qualche foggia forastiero: ti torcono il musso, ti ridono, ti ghignano, ti petteggiano co la bocca, ti chiamano in suo linguaggio cane, traditore, strangiero, et questo appresso loro e' un titolo ingiuriosissimo, et che rende il supposito capace ad ricevere tutti í torti del mondo, sii pur quanto sivogla huomo giovane, o' vecchio, togato, o' armato, nobile, o' gentil huomo, al che son mossi dal desio di havaver occasione di far a' questione con un forastiero, et in questo le assicura che non come in Italia s'avviene ch'un rompa il capo ad un de simil canagla, si staranno tutti ad vedere se per sorte viene qualche zaffo ufficiale ch'il prenda: et se pur e' alchuno che si muova; lo fa per dividere et appacare, aggiutare, l'impotente, et prendere specialmente la causa d'un forastiero, et niscuno che non e' official di corte, o' ministro de la giustitia idest birro, have ardire ne authorità di por mano sopra il delinquente: et se pur quello non sarà potente a' prenderlo: si vergognerà ogn'uno di aggiutarlo in simile ufficio, et cossi il birro, et tal volta i' birri perdono la caccia. Ma quã se per mala sorte ti viẽ fatto, che prendi occasione di toccarne uno, o' porre mano a' l'armi: ecco in un punto ti vedrai, quanto e' lunga la strada, in mezzo d'uno esercito di coteconi i' quali piú di repente che (come fingono i' poeti) da denti del drago seminati da Iasone risorsero tanti huomini armati: par che sbuchino da la terra: ma certissimamente sorteno da le botteghe, et facendo una honoratissima et gentilissima prospettiva de una selva de bastoni, di pertiche lunghe, alebarde, partesane, et forche rugginenti, le quali per queste et simile occasioni han sēpere apparecchiate et pronte, bēche à meglor uso gli siino state concesse dal p̃cēpe. Cossí con una rustica furia te le vedrai avventar sopra, senza guardare a' chi, perche, dove, et come, senza ch'un se ne referisca a' l'altro, ogn'uno sfogando quel sdegno naturale ch'ha contra il forastiero: ti verrà di

In this way all reasons for praise have been dealt with. But at this point, in defiance of the world, the common people make their entrance; and in so far as they are common people, they are inferior to none who graze on the surface of this too, too generous earth. For they really have no equal as an example of the most common of common people I have ever known: irreverent, without respect, uncivilized, and uncouth.<sup>8</sup> When they meet a foreigner they behave like as many wolves or bears, and with their dour looks they make faces at them as a pig might do to someone come to take away its fodder. These contemptible plebs can be divided, for the convenience of this narrative, into two sorts ...

PRUDENTIUS. *Omnis divisio debet esse bimembris, vel reducibilis ad bimembrem.*<sup>9</sup>

THEOPHILUS. ... of which one is composed of the artisans and shopkeepers who make faces at you, once they recognize you by your dress as a foreigner, laugh at you, grin at you, blurt at you, and call you in their language “dog,” “traitor,” or “foreigner.” This last is considered by them a particularly insulting word, which renders its holder liable to receive any insult in the world, regardless of whether he is old or young, robed or armed, a nobleman or a gentleman. It is this that makes them eager to create a difference of opinion with a foreigner; and when this happens, I can assure you that it is not as it is in Italy. There, if you happen to give one of these wretches a blow on the head, everyone will look around to see if a police officer is coming to make an arrest. If, by chance, somebody should make a move, it would be to divide and pacify them: to help the weakest, and to take the side of the foreigner. For nobody who is not a Court official, or someone who administers justice – that is, a police officer – would have the courage or the authority to lay hands on the criminal. Even if such a person were to prove incapable of making the arrest, anybody else would feel shame at helping him to do it. This is why the police, and sometimes more than one of them, lose their prey. But here, if by some misfortune it happens to you to touch one of these people, or to put your hand to your weapon, at once you will find yourself, for the whole length of the street, surrounded by an army of yokels who rise up from the ground more suddenly than (according to the poet’s fiction) those dragon’s teeth sown by Jason which turned into armed men.<sup>10</sup> In reality, they appear from their shops and create an illusion of a forest composed of clubs, long sticks, spears, rods, and rusted forks, which they keep ready at all times to face circumstances such as these, even if they were supplied with them by their prince for a better use than this. With a truly rustic fury, they fall upon you, without caring about who, why, where, or how, and without consulting together

sua propriá mano (se non sará impedito da la calca de gl'altri che poneno in effetto simil pensiero) et con la sua propria vergha á prendere la misura del sayo, et se non sarai cauto á saldarti anchora il cappello in testa.

Et se per caso vi fusse presente qualch'huomo da bene, o' gentil'huomo al quale simil villania dispiaccia: quello anchor che fusse il Conte o' il Duca, dubitando con suo danno senza tuo profitto d'esserti compagno (per che questi non hanno rispetto á persona, quando si veggono in questa foggia armati) sará forzato à rodersi dentro, et aspettar, stando discosto al fine. Hor al tandem quando pensi che ti sii lecito d'andar á trovar il barbiero, et riposar il stanchò, et mal trattato busto: ecco che troverai quelli medesmi esser tanti birri et zaffi, i' quali se potran fengere che tu habbi tocco alchuno (potreste haver la schena et gambe quantosivogla rotte) come havessi gli talari di Mercurio, o' fussi montato sopra il cavallo Pegaseo, o' premessi la schena al destrier di Perseo, o' cavalcassi l'Ipogriffo d'Astolfo, o' ti menasse il dromedario de Madian, o' ti trottasse sotto una de le ciraffe de gli tre Magi: á forza di bussate ti faran correre, aggiutandoti ad andar avanti con que fieri pugni: che meglo sarrebe per te fussero tanti calci di bue, d'asino, o' di mulo: non ti lasciaranno mai, sin tanto che non t'habbiano ficcato dentro una prigione, et quá me tibi comendo.

PRUDENTIO. A fulgure et tempestate, ab ira, et indignatione, malitia, tentatione, et furia rusticorũ.

FRULLA. Libera nos domine.

THEOPHILO. Oltre á questi s'aggionge l'ordine di servitori: non parlo de quelli de la prima cotta i' quali son gentil'huomini de baroni, et per ordinario non portano impresa o' marca se non o' per troppo ambitione de gl'uni, o' per soverchia adulation de gl'altri, trá questi se ritrova civiltá.

PRUDENTIO. Omnis regula exceptionem patitur.

THEOPHILO. Ma parlo de le altre specie di servitori, de quali Altri sono de la seconda cotta: et questi tutti portano la marca affibbiata á dosso. Altri sono de la terza cotta, li padroni de quali non son tanto grandi che li convengna dar marca à servitori: o' pur essi son stimati indegni, et incapaci di portarla. Altri sono de la quarta cotta, et questi siegueno gli marcati, et non marcati; et son servi de servi.

beforehand. Each one of them is intent on pouring out the instinctive spite he feels for the foreigner. They want to do it with their own hands (if they can do so without interfering with all those others who have the same thing in mind). So here they come, each with his own rod to measure your garment, and, if you are not careful, to bash down your hat on your head as well.

If by chance some decent person or gentleman should be present and not like what he sees, even if he were a duke or an earl he would expect only to be injured, without being able to help you, if he were to join in the fray. For these people have no respect for anybody when they are armed in this way. For this reason, such a person would be obliged to contain his anger, and to wait at some distance for the incident to end. So, to come to the *tandem*,<sup>11</sup> when you think that you can now go to call on the barber, to rest your tired and ill-treated frame, what you find there is that all of them are policemen or informers. If they can, they pretend that you have touched somebody (even if your back is broken, or your legs) as if you had the winged sandals of Mercury, or were mounted on the horse Pegasus, or riding the charger of Perseus, or Astolfo's hippogriff, or leading the dromedary of Midian, or had trotting beneath you one of the giraffes of the three Magi.<sup>12</sup> With savage blows, they force you to run, helping you along with those fierce fists of theirs; so it would be better for you if you were given so many kicks from cows, asses, or mules. They will never give up until they have got you in prison; and here *me tibi commendo*.<sup>13</sup>

PRUDENTIUS. *A fulgore et tempestate, ab ira et indignatione, malitia, tentatione et furia rusticorum ...*

FRULLA. ... *libera nos domine*.<sup>14</sup>

THEOPHILUS. As well as this sort, you have the various types of servants. I am not speaking of the highest ranks of these who, being the gentlemen of the nobles, usually wear no heraldic emblem or badge, unless their masters are particularly ambitious or they themselves wish to adulate them. Among this class, you will find civil manners.

PRUDENTIUS. *Omnis regula exceptionem patitur*.<sup>15</sup>

THEOPHILUS. Rather, I am speaking of the other servants. Those of the second rank have some sort of badge attached to them. As for the third rank, their masters are not grand enough for it to be fitting for them to have a badge; or perhaps they themselves are not considered worthy of wearing one. Then there are those of the fourth rank, who serve either their marked or unmarked fellows. They are the servants of servants.

PRUDENTIO. Servus servorum, non est malus titulus usquequaque.

THEOPHILO. Quelli de la prima cotta son i' poveri et bisognosi gentil'huomini: li quali per disegno di robba, o' di favore, se riducono sotto l'ali di maggiori; et questi per il piu non son tolti da sua casa et senza indignità seguitano i' sui Milordi, son stimati et favriti da quelli. Quelli de la seconda cotta sono de mercantuzzi falliti, o' arteggiani, o' quelli che senza profitto han studiato a' leggere o' qualch'arte et questi son tolti, o' fuggitie da qualche schuola, fundaco o' bottega. Quelli de la terza cotta son que poltroni che per fuggir maggior fatica, han lasciato più libero mestiero; et questi o' son poltroni acquatici, tolti da battelli; o' son poltroni terrestri, tolti da gl'aratri. Gl'ultimi de la quarta cotta sono una mescolta e di desperati, di disgratiati da lor padroni, de fuor usciti da tempeste, de pelegriani, de disutili et inerti, di que che non han più comodità di rubbare, di que che frescamente son scampati di priggione, di quelli che han disegno d'ingannar qualchuno che le viene a' torre da lá. Et questi son tolti da le colonne de la borsa, et da la porta di san Paolo. De simili se ne vuoi a' Parigi ne trovarai quanti ne vuoi a la porta del palazzo. In Napoli a' le grade di san Paolo, in Venetia, a' Rialto.

De le tre ultime specie, sono quei che per mostrar quanto siino potenti in casa sua, et che sono persone di buon stomacho, son buoni soldati, et hãno a' dispreggio il mondo tutto: ad uno che non fá mina di volergli dar la piazza largha: gli donaranno co la spalla, come con un sprone di galera una spinta, che lo faran voltar tutto ritondo, facendogli veder quanto sijno forti robusti et possenti, et ad un bisogno buoni per rompere un'armata. Et se costui che se fará incontro, sarà un forastiero; donigli pur quanto si vogla di piazza, che vuole per ogni modo che sappia, quanto san far il Cæsare, l'Anniballe, l'Hettorre, et un bue che urta anchora. Non fanno solamente come l'asino il quale (massimamente quando e' carco) si contenta del suo diritto camino per il filo, d'onde se tu non ti muovi non si muoverá ancho lui, et converrà che o' tu a' esso, o' esso a' te doni la scossa: ma fanno cossì questi che portan l'acqua, che se tu non stai in cervello, ti farran sentir la punta di quel naso di ferro che stá a la boccá de la giarra. Cossi fanno anchora color che portan birra et hala, i' quali facendo il corso suo, se per tua inavertêza te si avventaranno sopra, te faran sentir l'empito de la carca che portan sopra; et che non solamente son possenti a' portar su le spalli; ma anchora a' buttar una cosa innante, et tirar se fusse un carro anchora. Questi particolari per l'authorità che teggono in quel caso che portano la soma, son degni d'escusatione, per che hanno piu del cavallo, mulo, et asino, che de l'huomo: ma accuso tutti gl'altri li quali hanno un pochettino

PRUDENTIUS. *Servus servorum non est malus titulus usquequaque.*<sup>16</sup>

THEOPHILUS. The first rank of servants are the poor and needy gentlemen who, in order to procure possessions or favours, shelter under the wings of their betters. Normally they live in their own houses, and follow their lords with dignity, being esteemed and favoured by them. The second order come from the ranks of the bankrupt merchants, or artisans, or those who have studied law or the arts without profit. Often they have escaped, or been taken away from schools, warehouses, or shops. Those of the third rank are lazy fellows who, to escape more rigorous duties, have abandoned less servile professions. They are sluggards, either sea-goers who have left their boats, or landlubbers who have left their ploughs. The lowest of the low, or the fourth rank, are a mixture of desperadoes, men in the disgrace of their masters, sailors washed ashore in tempests, wanderers, useless people full of sloth. They may be unemployed thieves, escaped prisoners, or people with criminal designs, likely to be found under the arcade of the Exchange<sup>17</sup> or the doors of St Paul's. You can find as many as you want of the same sort in Paris at the gates of the Palace,<sup>18</sup> in Naples on the steps of St Paul's,<sup>19</sup> in Venice at the Rialto.<sup>20</sup>

The last three are the kinds of people who, if you fail to make way for them, like to show how powerful and tough they are in their own house, and what good soldiers they are, and how they despise the rest of the world. They do this by giving you a blow with their shoulder, as if it were a battering-ram, making you whirl around so that you can see how strong and powerful they are, and how they would be capable, if necessary, of putting an army to rout. And if you happen to be a foreigner, no matter how much room you make for them, they will start to show you what Caesar, Hannibal, or Hector could do, or a bull about to gore. They are not content to behave like an ass, which, particularly when it is laden, simply continues on its way; so that if you do not move, it will not move either, and you will have to give it a blow, or it to you. But they are like water carriers who jab you with the iron spout of their jar, if you are not careful. The same thing can be said of those who carry beer or ale. If they should fall over you on their way, they will make you aware of the weight of what they are carrying; for not only do they have the strength to carry things on their shoulders, but to push them ahead of them too, or to pull them behind as if they were carts. In situations such as these, they can be excused, for they are more like asses, mules, or horses than men. But there is no excuse for the others, who act on

del rationale, et sono piu che questi altri ad imagine et similitudine de l'huomo; et in luoco di donarte il buon giorno, o' buona sera (dopo haverti fatto un gratioso volto, come ti conoscessero, et ti volessero salutare) ti verranno a' donar una scossa bestiale. Accuso (dico) quell'altri i' quali tal volta fingendo di fuggire, o' voler perseguitare alchuno, o' correre a' qualche negocio necessario; se spiccano da dentro una bottega, et con quella furia ti verranno da dietro o' da costa, à donar quella spinta che può donar un toro quando e' stizzato, come (pochi mesi fa) accade ad un povero gentil'huomo Italiano, al quale in cotal modo, con riso et piacer di tutta la piazza, fù rotta, et fracassata una gamba, al che volendo poi provvedere il magistrato: non si trovò manco che tal cosa havesse possuto accadere in quella piazza. Si che quando ti piace uscir di casa: guarda prima di farlo senza urgente occasione, che non pensassi come di voler andar per la citta á spasso, poi segnati col segno de la santa croce, armati di una corrazza di pazienza che possa star á prova di archibugio, et disponeti sempre á comportar il manco male liberamente; se non vuoi comportar il peggio per forza.

Portati prudentemente, et pensa che nõ hai à far mai con un solo, ne con doi o' cinquanta; ma cõ tutta la republica, et la patria plebesca, per la quale ó á dritto ò à torto ogn'uno e' ubligato di ponere fin á la vita. Però fratello quando ti sentirai toccare in questo modo; poni mano al tuo cappello, saluta il tuo antagonista, et fà conto che quello habbia fatto come si suol fare trá compagni, et amici. ó pure se la ti parrà troppo dura: dimãdagli perdono a fin che non ritorni à farti peggio: con provocarti, figendo che tu l'hai spẽto, o' l'hai voluto spẽgere.

Hor ecco quel tempo, quell occasione, ne la quale meglio che mai le potrai conoscere. Dice il Nolano che in diece mesi ch'há soggiornato in Inghilterra: non há profitato quanto questa una sera in far penitẽze et guadagnar perdoni. Questa sera gli fù bene accomodata ad esser principio, mezzo, et fine de la quarantana. Questa sera (disse) voglio che vagla per la penitẽza ch'harrei fatta digiunando quaranta giorni, benedetti et quaranta notte anchora. Questa sera son stato nel deserto; dove non per una, o' tre, ma per quarãta tentationi hó guadagnato quarantamilia anni d'indulgentia plenaria.

PRUDENTIO. Per modum suffraggii.

THEOPHILO. Tanto che per buona fede, credo haverne non solo per i' peccati ch'hò fatti: ma ancho per molti altri che oltre potrei fare.

a more rational level, and have human likeness and semblance. Yet it is they who, instead of saying good-day to you, or good-evening, will first of all look at you kindly as if they knew you and wanted to say something to you, and then will give you a nasty shove. And it is about these others that I want to make a complaint; for often they pretend to dash away from you to go to serve someone else, or to run some errand, while they slip into a shop. From there they emerge behind or beside you to give you a push like an angry bull. This is exactly what happened a few months ago to an Italian gentleman whose leg was broken and fractured, to the great pleasure and amusement of all those present.<sup>21</sup> When an attempt was made to complain to the magistrate, it was judged that such a thing could not possibly have happened in that place. So when you want to go out of the house, try not to do it just to take a walk around the town, but only if there is an urgent need. Then make the sign of the cross, and arm yourself with an impenetrable shield of patience. Prepare yourself freely to put up with lesser evils rather than being forced to accept the worse.

Behave with caution, and remember that your opponent will never be one of the plebs, or two of them, or fifty only, but the whole republic and kingdom of the common people who, rightly or wrongly, hold our lives in their hands. For this reason, brother; when you feel someone pushing you in the way I have described, put your hand to your hat and salute your opponent, reasoning that he has done by you as he would by his friends or companions. And if that seems to be taking things rather far, at least ask his pardon so that he will not do you worse harm. For he could provoke you, pretending that it was you who pushed him, or at least wished to push him.

It is in circumstances such as these that you will best come to know them. The Nolan says that in the ten months he has been in England, that evening afforded him the best opportunities for doing penitence and gaining pardons. That evening was particularly suitable for being the beginning, middle, and end of Lent. "I want this evening," he said, "to be worth all the penitence I would have done in forty days and forty nights of fasting. This evening I have been in the desert where I have gained forty thousand years of full remission of my sins, not for one or three but for forty temptations ..."

PRUDENTIUS. *Per modum suffragii*.<sup>22</sup>

THEOPHILUS. ... so much so that I can surely say that I have gained pardons not only for the sins I have already committed, but also for many others that I might commit in the future.



PRUDENTIO. Supererogatorie.

FRULLA. Vorrei sapere se egli numeró questi rintuzzi, et urti salvaticini che dici esserno stati quaranta? Mi fate venir á memoria mastro Mamphurio, al quale certi marranchini ne ferno contare non so quante.

THEOPHILO. Se costui havesse saputo, che ne dovea portar tanti; forse sarebbe stato curioso in contarle: ma lui sempre stimava che ogn'uno dovesse essere l'ultimo; ma era ben ultimo á rispetto de quelli ch'erano passati. In questo che lui dice esserno stati gl'urti, quaranta, forse fá com'un devoto peccatore; il quale dovendo rispondere al padre confessore del quoties, cioè quante volte: et non se ricordando a' punto il numerò: se teneva á l'alto piu tosto che al basso; dubitando che per dir meno piu presto che d'avantaggio; qualche peccato ne rimanesse di fuori, in loco che piu tosto alchuno vi harrebbe rimaner dentro la mano del prete che l'assolve. Et lascio che nel ricevere di queste spinte, urti, et ferute, non si prende quel piacere, che l'huomo puó avere in racôtarle; perche in corpo nõ si senteno senza dolore ò cordoglio: et da la bocca escono cõ quella medesima facilità le due, che le dodici, che le quarãta, che le cêto, che le mille. Ma siino quãte si voglano; io non hó possute cõtar le sue ma ben le mie. Egli si teneva á dietro come soglõ far quei ch'al mal passo honorano il cãpagno, ma lui s'ingannava: per che le battarie nõ meno occorreivano dal le spalli per quei che ne seguivano, che da la fronte per quei che ne venivano á l'incontro, non dimeno lui per manco male faceva com'un priore che seguita il suo cõvento, ó pur come si fa in forma quãdo si vá á cõbattere (ove al presẽte si imaginava d'essere col sentirse adosso tanti rincontri di lance spezzate) facẽdosi riparo di noi altri se teneva á dietro come buon capitano, che per salute del suo esercito, la quale con la sua morte perirebbe, se tiene á dietro in conserva al sicuro et al largo, onde poi ad un bisogno possa correre á comandar ad altre genti che vengano al soccorso, o'ver essere lui medesimo l'ambasciator de la desgratia. Lui dunque caminando in questo ordine, non possea esser veduto da noi, i' quali medesimamente essendo occupati in casi nostri non haveamo aggio di rivoltarci a' dietro, et far qué gesti per manco dissimular, piú criminali.

PRUDENTIO. Optimé consultum.

THEOPHILO. Pure particolarmente quando fummo à la pyramide vicina al palazzo, in mezzo di tre strade.

PRUDENTIUS. *Supererogatorie.*<sup>23</sup>

FRULLA. What I would like to know is whether he actually counted the number of pushes and brutal blows he received, given his claim that there were forty of them. It reminds me of Master Manfurio, who was obliged by a band of rogues to count I don't know how many of them.<sup>24</sup>

THEOPHILUS. If he had known that he would have had to support so many, perhaps he would have been curious enough to count them. But he always expected each one of them to be the last, although it turned out only to be the last but one. So when he claims that he received forty blows, he is probably doing as devout sinners do when they have to reply to the father confessor's question of *quoties*: that is, how many times. For when they forget the number, they tend to pitch their guess high rather than low, fearing that if they say less than the truth, rather than benefitting from it, some sins might get left out; whereas in the other event, some extra ones get caught in the hand of the priest who absolves them. And it must be remembered that receiving such pushes, blows, and wounds is less pleasant than talking about them. For to the body each one is painful, whereas in telling the story it is the same thing to talk about two, twelve, forty, a hundred, or a thousand. In any case, however many there were, rather than counting his, I had the task of counting my own. He lagged behind, like those who give way to their companion when the path becomes difficult to negotiate. But that was a mistake; for the blows were no less heavy on the shoulders of those at the back than they were on the chests of those at the front. Still, by protecting himself behind the rest of us, he felt like nothing less than a prior following the monks of his order, or like a good captain who, for the safety of his army, follows the men going into battle (and he really thought there was one on, when he felt the points of all those lances). For an army perishes at the death of its captain, whereas if he stays behind and guards his own safety, he can if necessary run to command other troops arriving in support, or at the very least carry the news of the defeat. And so he walked at the back, where we were unable to see him. Given that we had to fend for ourselves, we were also unable to turn around or to respond with gestures even more criminal for want of dissimulation.

PRUDENTIUS. *Optime consultum.*<sup>25</sup>

THEOPHILUS. Then just as we reached the pyramid near the Palace, where three roads join ...<sup>26</sup>

PRUDENTIO. In trivio.

THEOPHILO. Quivi ne se ferno in contro sei galant'huomini che haveano avanti un putto con una lanterna, et de questi uno dá una scossa á me che mi fé voltar á veder un'altro che ne dié un'altra doppia al Nolano, la quale fú sí gentile, et gorda; che sola possea passar per diece, et gli ne fé donar un'altra al muro, che possea quella ancho passar per altre diece.

PRUDENTIO. In silentio et spe, erit fortitudo vestra. Sí quis dederit tibi alapam; tribue illi et alteram.

THEOPHILO. Questa fú l'ultima borascha. per che poco oltre per la gratia di san Fortunio, dopo haver discorsi mal triti sentieri, passati dubbiosi divertigli, varcati rapidi fiumi, tralasciati arenosi lidi, superati limosi fanghi, spaccati turbidi pantani, vestigate pietrose lave, lustrati salvatichi incontri, trascorse lubriche strade, intoppato in ruvidi sassi, urtato in perigliosi scogli: gionsemo per gratia del cielo vivi al porto, idest á la porta; la quale subito toccata ne fú aperta, entrâmo, trovammo á basso de molti et diversi personaggi; diversi, et molti servitori, i' quali senza cessar senza chinare la testa, et senza segno alchun di riverenza, mostrandone spreggiar co la sua gesta: ne ferno questo favor, de mostrarne la porta, andiamo dentro, montamo su, troviamo che dopo haverci molto aspettato, desperatamente s'erano posti á tavola à sedere. Dopo fatti i' saluti, et i' resaluti.

PRUDENTIO. Salutationi.

THEOPHILUS. Et alchuni altri piccoli ceremoni (tra quali ve fú questo da ridere, che ad un de nostri essendo presentato l'ultimo loco, idest la coda de la tavola, et lui pensado che la fusse il capo, per humiltà voleva andar á seder dove sedeva il primo, et quà sí fú un piccol pezzo di tempo in contrasto trá quelli che per cortesia lo voleano far seder ultimo, et colui che per umiltà volea seder il primo) In conclusione. M. Florio sedde a' viso d'un cavalliero, che sedeva al capo de la tavola; il Sig. Folco, á destra de M. Florio; io et il Nolano a' sinistra de M. Florio; Il dottor Torquato á sinistra del Nolano; Il dottor Nundinio a' viso a' viso del Nolano.

SMITHO. Hor su lasciamo cenar costoro, lasciamole a' tavola ripossar fin a' domani.

FRULLA. Son certo che non prenderanno tanti bocconi, quãto han fatto de passi.

PRUDENTIUS. *In trivio.*<sup>27</sup>

THEOPHILUS. ... just there six fellows came towards us led by a boy with a lantern. One of them gave me a shove which made me whirl round just in time to see another who was giving a double dose to the Nolan with a blow so sweet and hefty that it seemed like ten, and made him hit the wall as if that too was giving him ten blows again.

PRUDENTIUS. *In silentio et spe erit fortitudo vestra. Si quis dederit tibi alapam, tribue illi et alteram.*<sup>28</sup>

THEOPHILUS. That was the last storm we encountered. After having wandered so long over barely trodden paths and through unfrequented by-ways, crossed swift-flowing rivers, left sandy beaches behind us, skated over slimy mud, waded through miry sloughs, picked our way over stony gutters, survived dangerous encounters, passed along treacherous highways, stumbled over rough stones, and collided with rugged rocks, by the grace of God and St Fortune we arrived at the port, *idest* at the portico. As soon as we knocked, it was opened. We entered and found below the many and various servants of many and various people. Without stopping what they were doing or bowing their heads, and without any sign of respect but rather with a show of contempt, they at least did us the favour of showing us which door to go through. We entered and went upstairs. There we found that, after having waited for us for a long time, the company had resigned themselves to sitting down at table. After we had made and repeated our greetings ...

PRUDENTIUS. Salutations.

THEOPHILUS. ... and indulged in some little ceremonies (one of which made us laugh, because someone in our party was offered the lowest place, that is the place at the end of the table, and, thinking that it was the head, he desired, out of modesty, to be put in the place of honour, creating a little fuss between those who wanted him to sit at the lowest place and him who wanted to sit at the highest), we reached a conclusion with Mr Florio seated facing a knight who was head of table; Sir Fulke to the right of Mr Florio; the Nolan and I on the left of Mr Florio; Dr Torquatus on the left of the Nolan, and Dr Nundinius facing the Nolan.<sup>29</sup>

SMITHUS. So now we can leave them to their supper. Let us leave them at table to rest until tomorrow.

FRULLA. I doubt if they will take as many mouthfuls as they took steps to get there.

SMITHO. Suppliranno le paroli A' rivederci.

THEOPHILO. A' dio.

PRUDENTIO. Valet.

Fine del Secondo Dialogo.

SMITHUS. Words will do them instead. And so, goodbye.

THEOPHILUS. Goodbye.

PRUDENTIUS. *Valete.*<sup>30</sup>

End of the Second Dialogue.

*This page intentionally left blank*

# NOTES

## Introduction

- 1 For previous translations of the *Supper* itself, see the next paragraph. The following translations of the other five Italian dialogues are recommended for academic use: Giordano Bruno, *Cause, Principle and Unity*, and *Essays on Magic*, trans. and ed. Richard J. Blackwell and Robert de Lucca, with an introduction by Alfonso Ingegno (Cambridge: Cambridge University Press, 1998); *On the Infinite Universe and Worlds*, trans. and ed. Dorothea Waley Singer in *Giordano Bruno: His Life and Thought* (New York: Schumann, 1950); *The Expulsion of the Triumphant Beast*, trans. and ed. Arthur D. Imerti, 2nd revised ed. with a foreword by Karen De Leon Jones (Lincoln: Bison Books/University of Nebraska Press, 2004); *The Cabala of Pegasus*, trans. and ed. Sidney L. Sondergard and Madison U. Sowell (New Haven: Yale University Press, 2002); *On the Heroic Frenzies*, trans. and ed. Ingrid D. Rowland, *Lorenzo da Ponte Library* (Toronto: University of Toronto Press, 2013).
- 2 For full bibliographical details, see the sections “The Early Cosmological Discussion” and “The Later Cosmological Discussion” in the Giordano Bruno bibliography available at [www.oxfordbibliographies.com](http://www.oxfordbibliographies.com), section “Renaissance and Reformation”.
- 3 Yates (1964/2002).
- 4 Bruno (1975) and Bruno (1977/1995).
- 5 See, for example, Ophir (1994) and Saiber (2005).
- 6 See Granada (1992), Tessicini (2007), and Granada (2010).
- 7 On these subjects, see Gatti (2013).
- 8 See, for example, the ample section on Bruno in Westman (2011) and the close attention paid to Bruno’s astronomical theses in Omodeo (2014).
- 9 For Italian-language biographies, see Ricci (2000) and Ciliberto (2007). For an English-language biography, see Rowland (2008).
- 10 The Italian text edited by Aquilecchia is now in Bruno (2002a), vol. I, 425–589. The passage referred to here is at 559. Aquilecchia notes that Bruno’s



chronology suggests he is referring to the St Felice who was Bishop of Nola and died in 484.

- 11 The opening of an inquiry into Bruno's religious ideas was officially noted in the *Liber processorum* of the Neapolitan Dominican province in 1575, but it is followed by no mention of a trial or a final sentence. See Ricci (2000), 102.
- 12 For Daniel's biography and his links with Bruno, see Rees (1964). Giovio's original text together with Daniel's translation are in facsimile in Giovio (1976). For a discussion of Daniel's translation, and his reference to Bruno, see Gatti (2008).
- 13 The Italian text edited by Giorgio Barberi Squarotti is in Bruno (2002a), vol. I, 259–424. For an English translation, see Bruno (2000b).
- 14 The trial documents are in Firpo (1993).
- 15 See *ibid.*, 162.
- 16 For Charlewood's part in the printing of Bruno's Italian dialogues, see Provvidera (2002).
- 17 For an English translation of *On the Heroic Frenzies*, see Bruno (2013). On Bruno's theological immanence, see Granada (1990).
- 18 These important letters can be found in English translation in Bruno (2004b) and Bruno (2013).
- 19 Frances Yates in an early essay of 1939–40 on "The Religious Policy of Giordano Bruno" (see Yates 1982) claimed that Bruno was working for the French King – who is praised fulsomely in the Introductory Letter to *The Ash Wednesday Supper* dedicated to the French Ambassador, Castelnau – attempting to establish a policy of religious tolerance and reunion, perhaps even some form of alliance between the more moderate Catholic elements of Henri III's court and the more open-minded Protestants of Elizabeth's. More recently, John Bossy has made the less likely suggestion that Bruno may have been the spy living in the French Embassy as a priest, and writing to Walsingham under the pseudonym of Henry Faggott: see Bossy (1991) and for a more recent and modified elaboration of this thesis, Bossy (2001).
- 20 For Bruno's relationship with Florio, see Wyatt (2005). For Alexander Dicson and the polemic with Perkins, see Yates (1966), 260–78.
- 21 Bruno's memory works in Latin, with a modern Italian translation and comment, are in Bruno (2004b) and (2009). His Lullian works in Latin, with a modern Italian translation and comment, are in Bruno (2012). For the Italian text of *Candelaio*, see Bruno (2002a), and for an English translation, Bruno (2000b).
- 22 First published in O. Elton, "Giordano Bruno in England," in *Modern Studies* (1907), and more recently reproduced with the relevant correspondence between Cobham and Walsingham in Aquilecchia (1995).

- 23 This note, together with the other English Bruno documents, is discussed in Aquilecchia (1995). See also Aquilecchia (1993b).
- 24 A transcription of the whole of Holinshed's account of Alasco's Oxford visit is in Bassi (2004), 22. For the original texts of the first and second editions of the *Chronicles*, and information on their complex history, see *The Holinshed Project* at [www.cems.ox.ac.uk/holinshed](http://www.cems.ox.ac.uk/holinshed). The description of Alasco's Oxford visit is in the second edition, vol. VI, 1355.
- 25 A detailed discussion of Gentile's letter to Hotman and Hooker's letter to Rainolds is in Aquilecchia (1995).
- 26 Abbott's page on Bruno is reproduced and discussed in Aquilecchia (1995).
- 27 Bruno's letter to the Vice-Chancellor of Oxford has been the subject of intense discussion among his commentators. For a balanced account of its contents, see the section "Un 'manifesto' culturale: L'epistola al Vice-Cancelliere" in Ricci (2000), 216–24. For considerations on its probable date, see Bassi (2004), 24–7.
- 28 Aquilecchia (in 1993b) is correcting a claim made by M. Feingold that Savile's Oxford lectures "included a long and detailed account of the Copernican theory." For this claim, see Feingold's essay in *Occult and Scientific Mentalities of the Renaissance*, ed. Brian Vickers (Cambridge: Cambridge University Press, 1984), 87.
- 29 Yates (1964/2002), 226–7, opens her chapter on Bruno in England by linking his *Sigillus sigillorum* to the letter written by Bruno to the Oxford dons. For the claim that Bruno was "reading" the *Sigillus* at Oxford, see Sturlese (1994).
- 30 See Aquilecchia (1993b).
- 31 See chap. 15 of Ficino (1989). For a fuller account of the whole episode, and particularly the subject of magnetism in Bruno's lectures at Oxford, see "Between Magic and Magnetism: Bruno's Cosmology at Oxford" [2000], now in Gatti (2011), 17–39. In a detailed discussion of the problem of how to reconcile Bruno's Copernicanism with Abbott's claim that he plagiarized Ficino at Oxford, Miguel Granada has come to the conclusion that it was Ficino's *Theologia platonica* (above all IV, 1) that Bruno was referring to, and not the *De vita coelitus comparanda*, as claimed by Abbott, if only in a marginal note: see section 4, "Bruno y el copernicanismo entre Paris y Oxford," in Bruno (2015), ed. and trans. Granada, xlix–lxxviii. But Abbott was extremely attentive to detail, and it seems unlikely that he would have been mistaken in such an important and precise reference.
- 32 For Gilbert's discussion of Bruno's cosmological theories, see *De mundo nostro sublunari philosophia nova* (Amsterdam, 1651). Gilbert's diagram of the universe is at 202. A better reproduction, in colour, of the diagram can be found in the manuscript copy presented to the young Prince Henry by

Gilbert's half-brother after Gilbert's death and held in the British Library: see MS Royal 12 F XI, fol. 88. For a discussion of Bruno's relationship to Gilbert and his circle, see Gatti (1999), 86–98.

33 See Bruno (2002a), vol. I, 468n8.

34 On Bruno's relationship with the Sidney circle, see Ciliberto (1990) and Pirillo (2010).

35 For Bruno's use of Italian while he was in London, rather than the more traditional Latin, see Aquilecchia (1993a), 41–63.

36 See Bruno (1998), 22–3.

37 See Plato (1961), 526–74.

38 For Bruno's critique of humanist pedantry, see Ordine (1996) and the introduction by Sondergard in Bruno (2002b).

39 For a consideration of the importance in the *Supper* of Bruno's concept of negation, see Gatti (2011), 1–13.

40 Plato (1961), 562.

41 See Bruno (2002a), vol. I, 264. My translation.

42 See Karl Popper, *The Logic of Scientific Discovery* (London: Hutchinson, 1959), 32. The words of Einstein, quoted by Popper, formed part of an address delivered on Max Planck's birthday.

43 The quotation is from Psalm 102:9 in the Authorized King James Bible: Psalm 101:10 in the Latin Vulgate.

44 For a detailed discussion of the allegorical nature of Dialogue II of the *Supper*, see Gatti (2017).

45 For an alternative claim that Bruno remained faithful to Catholic ideas of Lent and the Mass, see the Introduction to Bruno [1977] (1995), and Gosselin (1987).

46 The legend can be found in Alexander of Aphrodisias, *In Aristotelis meteorologica*, but was well known and repeated in other ancient and Renaissance texts.

47 For the “Pythagorean” significance of the number four, see Bruno's later Latin work dedicated to Pythagorean number symbolism, *De monade, numero et figura*, in Bruno (2000a), 302–28.

48 For bibliographical details, see note 2.

49 For the purely mathematical interpretation of Copernicanism accepted by most of the Protestant world throughout the sixteenth century, see Gingerich (1973) and Westman (1975a); also Westman (2011), 141–70.

50 For a detailed comment on Osiander's letter, see B. Wrightsman, “Andreas Osiander's Contribution to the Copernican Achievement” in Westman, ed. (1975b), 213–43.

51 For Copernicus's own dedicatory letter to the Pope, see Robert S. Westman, “Proof, Poetics and Patronage: Copernicus's Preface to *De revolutionibus*,” in Lindberg and Westman, eds. (1990), 167–205.

- 52 The extreme technical difficulty of Copernicus's text is underlined in Kuhn (1957), which contains an interesting section on Bruno, and in Swerdlow and Neugebauer (1984). Sixteenth-century complaints about such difficulty are discussed in Westman (2011), 141.
- 53 See, for example, Hélène Vedrine, "L'obstacle réaliste en mathématique chez deux philosophes du XVI<sup>e</sup> siècle: Bruno et Patrizi," in *Platon et Aristote à la Renaissance* (Paris: J. Vrin, 1976), 239–48. A contrary argument in favour of Bruno's eccentric mathematics as part of a coherent program of metaphysics and atomistic physics, rather than simply as a weak point in his natural philosophy, has been put forward in Bönker-Vallon (1995).
- 54 The mode of Bruno's application of his particular brand of mathematics to his infinite universe is discussed in De Bernart (2002).
- 55 The importance of Bruno's probable use of Pena has been underlined by Vedrine (1967), and by M.R. Pagnoni Sturlese, "Su Bruno e Tycho Brahe" in *Rinascimento* series 2, 25 (1989): 318–19.
- 56 Much work has been done in recent years on the gradual repudiation, in the course of the sixteenth century, of the idea of solid revolving orbs. See in particular, Grant (1994), and Lerner (2008).
- 57 There is no reference in the critical tradition to a use of Alhazen by Bruno, although it is highly probable that he knew the *Perspectiva*. For a recent English translation, see Alhazen, *Optics*, 2 vols., trans. and ed. I. Sabra (London: Warburg Institute, 1989).
- 58 The claim was made in Northumberland's so-called *Essay on Love*, first published by Frances Yates in *A Study of Love's Labour's Lost* (Cambridge: Cambridge University Press, 1936), 206–11. See also Gatti (1989/2013), 39–48.
- 59 See Ptolemy (1984), I, 7, H25–6.
- 60 See Michel (1962), 207.
- 61 For Bruno's use of the top-sail experiment, see Marshall Clagett, *The Science of Mechanics in the Middle Ages* (Madison: University of Wisconsin Press, 1961), 665–6; Massa (1973), and William A. Wallace, *Prelude to Galileo* (Dordrecht: D. Reidel, 1981), 41.
- 62 See Aquilecchia (1995). Digges's precedent to Bruno's thought experiment had already been pointed out by Alexander Koyré in *Metaphysics and Measurement* (Cambridge, MA: Harvard University Press, 1968), 124–5.
- 63 For the revolutionary implications of Bruno's cosmology with respect to that of Copernicus, and the claim that this makes him a precursor of some aspects of contemporary cosmological theory, see Mendoza (1995).
- 64 On Bruno and the thermodynamic cosmology of Telesius, see Gatti (1999), 120–3. On Bruno and Copernicus's theory of gravitation, see Knox (2001).

- 65 The importance of Bruno's use of this argument was established by Dorothea Singer in the introduction to her translation of the *De l'infinito universo et mundi* in *Giordano Bruno: His Life and Thought* (New York: Schumann, 1950), and previously by Arthur O. Lovejoy in his section on Bruno in *The Great Chain of Being*. See Lovejoy (1936).
- 66 For the Hermetic origins of this image, see *Hermetica* (1992), xlvii. An extensive comment on Bruno's idea of infinite space as an infinite sphere is chap. 4: "A Finite and Infinite Sphere: Reinventing Cosmological Space," in Omodeo (2014), 158–96.
- 67 See on these subjects, Westman (1977) and Catana (2005).
- 68 Yates (1982).
- 69 For a discussion of Bruno's concept of an infinite plurality, see Gatti (2011), 1–13.
- 70 The widely accepted thesis that Bruno was not condemned to be burnt at the stake for his cosmology, and most particularly for his belief in multiple worlds, has recently been convincingly challenged: see Martinez (2016). For the conflict between Galileo and the theologians, see Finocchiaro (1989).
- 71 For a fuller discussion of Bruno's reading of the Copernican theory as considered in the following paragraphs, see the chapter "Reading Copernicus" in Gatti (1999).
- 72 See Copernicus (1978), where his translator, Edward Rosen, claims that this introductory diagram led to considerable confusion among his early commentators.
- 73 For a fuller discussion of Bruno's lunar mistake, see Gatti (1999), 66–8.
- 74 Tocco included Schiaperelli's reply to his query as a note to his volume. See Tocco (1889), 313–14n3.
- 75 See Yates (1964/2002), 265.
- 76 Michel (1962), 217.
- 77 See Ingegno (1978), 65.
- 78 See Omodeo (2009).
- 79 See Swerdlow (1975), 51, and Swerdlow and Neugebauer (1984), 127.
- 80 Both quotes are in Westman (2011), 141.
- 81 Omodeo (2009), 49–50.
- 82 Ibid., 45.
- 83 Ibid., 51.
- 84 For Bruno's mathematics of approximation, see De Bernart (2002).
- 85 See Lüthy and Smets (2009).
86. See *De immenso et innumerabilibus, seu de universo et mundis*, in Bruno (2000a), 584–8.
- 87 Ingegno (1978), 69.
- 88 On the differences between Bruno's idea of an infinite space and those of other contemporary infinitists, see Granada (1992). See also Omodeo

(2014), in particular section 9: “Bruno’s Pythagorean Correction of Copernicus’s Planetary Model,” 183–91.

89 See Bruno (1999a), 739, and, for the English translation, Gatti (2013), 7.

### A Note on the Text

- 1 Detailed treatment of the publisher of Bruno’s Italian dialogues can be found in Providera (2002).
- 2 See Sturlese (1987), 44–50.
- 3 See Aquilecchia (1993c), xxiii–xxxviii.
- 4 *Atti dell’Accademia Nazionale dei Lincei, Classe di Scienze morali, storiche e filologiche*, serie VIII, vol. III, fasc. 4, 1950. Now in Aquilecchia (1993a), 1–39.
- 5 See Tissoni (1958–9) and Tissoni (1959).
- 6 Bruno (2002a). The *Cena de le ceneri*, with a comment and notes by Giovanni Aquilecchia, is in vol. I at pp. 425–589.
- 7 See Tarantino (2004).
- 8 See Harris (2006).
- 9 See Tirinnanzi (2006). Together with Michele Ciliberto, Tirinnanzi had also previously advanced the more plausible thesis that Bruno’s Italian dialogues may have been a textual representation of dialogues intended to be recited aloud by various voices. See Ciliberto and Tirinnanzi (2002).
- 10 See Granada’s “Nota sobre la cronología de la impresión de *La cena*” in Bruno (2015), ccxxxv–ccxliv.
- 11 See Providera (2015).
- 12 © The British Library Board, C.37.c.14(2).

### Proemiale Epistola / Introductory Letter

- 1 No manuscript of this or of any other of Bruno’s Italian works has survived. For details concerning the text used for this translation, see the Note on the Text.
- 2 The Malcontent, or barbarous cur, is the neo-Aristotelian pedant who acts as Bruno’s insolent opponent in this text, where Bruno (the Nolan) is attempting to destroy the Aristotelian physics and propose an infinite post-Copernican cosmology. Bruno is not referring to a specific speaker here, but to all pedants who attempt to attack and destroy those who express new ideas.
- 3 Bruno’s opening poem is a sonnet of the type called in Italian a “sonetto caudato,” or a sonnet with a tail. Often used in satirical or polemical sonnets, the number of verses added to the standard fourteen varies: Bruno’s original Italian version adds four verses composed of two rhyming couplets. The addition of a tail may be a covert reference to comets, which, with their fiery tails, were a subject of heated cosmological debate at this time, when they were

being sighted above the lunar sphere. This recently observed phenomenon was undermining the Aristotelian cosmology based on the idea of the heavens above the moon as formed of an unchanging and eternal quintessence.

- 4 Michel de Castelnau, born at Mauvissière in 1520, died 1592, was appointed French Ambassador to the Court of Elizabeth I in 1574 with instructions to further the cause of Mary, Queen of Scots. The printed texts name him as Secretary of the French King's Privy Council, which was a mistake. He was a Councillor, not Secretary. The correction is present in some copies as a sticker that has not always survived, as in the British Library copy used here. Although himself a convinced Catholic, his Embassy staff included Protestants such as John Florio, who was appointed tutor to his daughter, and a number of double agents who were spying for Elizabeth's Secretary of State, Francis Walsingham. Bruno arrived in England from Paris to become part of Castelnau's retinue in April 1583 and left London when the Ambassador was finally recalled to Paris in October 1585. In his book entitled *Giordano Bruno and the Embassy Affair* (1991), the historian John Bossy attempted to identify Bruno with a spy living in the French Embassy at that time who signed his dispatches to Walsingham with the name of Henry Faggot, and who was instrumental in unmasking the Throckmorton plot to assassinate Queen Elizabeth I. The documents produced to support this identification do not, in my opinion, prove Bossy's case, which remains at the level of an unlikely hypothesis in need of further evidence in order to justify a rereading in this light of Bruno's life and work. See, for a revised version of his own thesis, Bossy's more recent *Under the Molehill* (2001).
- 5 The references are to other famous "suppers" in ancient, biblical, and modern literature. Jove (or Jupiter, Zeus in Greek mythology) was the chief of the Olympian gods and was traditionally associated with thunder. He celebrated his victory over the Titans with a banquet in the heavens. – Bruno uses the word "protoplasmic" in referring to our first parents, who in Hebrew mythology were Adam and Eve. The reference is to the eating of the apple in the garden of Eden, and the subsequent fall into sin and death. – The Old Testament book of Esther, chap. 7, describes the banquet offered by Esther to her consort, the Persian King Xerxes or Ahasuerus (probably Xerxes I, 485–465 BC). Among the guests was his adviser Haman, who was scheming to destroy all the Jews in the Persian kingdom, including Esther herself and her uncle Mordecai. During the feast Esther reveals Haman's treachery to Ahasuerus, thus saving all the Jews in the kingdom. – Lucius Licinius Lucullus (106–57 BC) was famous for his wealth and taste for luxury. – In bk. I of *The Metamorphoses*, Ovid tells the story of Jove, who descends to earth and assumes human form. Lycaon, a mythical king of Arcadia, invites him to a banquet to test whether he is really Jove by serving him the still palpitating limbs of a

youth offered to him in hostage by the Molossians, in whose territory there was a famous sanctuary in honour of Jove. Enraged by Lycaon's offensive hospitality, Jove turns him into a wolf. – Seneca's plot in *Thyestes* tells the story of the brothers Atreus and Thyestes, grandsons of Tantalus, called by the Mycenaeans to rule their kingdom. In the ensuing struggle for power, Atreus kills the sons of Thyestes and serves their bodies to their father in a solitary banquet. When he realizes what he has eaten, Thyestes pronounces a terrible curse against his brother's family, and the kingdom falls into complete confusion. – Tantalus offended the gods, in some versions of his story by revealing their secrets to mankind, in others by serving the gods his son Pelope at a banquet to see if they were omniscient. He was condemned to eternal torment in Hades, where he stood in water up to his throat with fruit hanging over his head: whenever he tried to drink, the water receded, and whenever he tried to eat, the fruit was moved up out of his reach. Another version of his punishment is that a rock was suspended over his head in constant danger of falling. – The reference to a *Symposium* refers to Plato's famous banquet where the participants, including Socrates, discuss the subject of love. For the relationship between Plato's *Symposium* and Bruno's *Supper*, see the Introduction to this volume. – The Greek cynic Diogenes of Sinope (fourth century BC) was renowned for taking to extremes the Socratean precept that the philosopher should live frugally. He is said to have lived in a tub and fed off scraps. – Leeches feed on blood: the reference is to the Last Supper, and is part of Bruno's anti-Christian polemic. For Bruno's position with respect to the violent disagreement over the correct interpretation of the Mass, which had been raging in Europe since the beginning of the Protestant Reformation, see Alfonso Ingegno, *Regia Pazzia: Bruno lettore di Calvino* (Urbino: Quattro Venti, 1987). – The satirical Florentine poet Francesco Berni in his *Capitolo del prete da Povigliano a messer Ieronimo Fracastoro* (1552) describes his meeting with the obsequious local priest, who, with much ceremony, invites him to supper in his house, a miserable hovel full of flies and mosquitoes. – Bonifacio, an aging and impotent lover, is one of the principal characters in Bruno's own comedy *Candelaiio* (*The Candle-Maker*), published in Paris in 1582. It is one of his first published works to have survived.

- 6 Bologna was, and still is, famous for its rich dairy produce and its cooking. Florence is traditionally called "the beautiful." Bruno may have been thinking of the severe frugality of its merchant class, or considering it as a centre of philosophy and humanistic studies. Sardanapalus, the legendary last King of Assyria, was renowned for his effeminate taste for luxury and refinement.
- 7 Value judgments are being expressed here on the philosophers named in the text. Aristotle is associated with specious logic, while Pythagoras is considered as the true natural philosopher of antiquity. The atomism of Democritus



(b. Abdera c. 470 BC) is seen as conferring on the universe a harmonious and rational unity. Heraclitus (Ephesus, sixth–fifth century BC) identified reality in an obscure state of flux, the outcome of an eternal war of opposites. The contrast between the weeping Heraclitus and the laughing Democritus was a traditional one. Democritus's laugh was considered to have therapeutic and liberating value. It was intended as a cure against madness, and had been treated as such by Leon Battista Alberti in his *Momus*, published in the middle years of the fifteenth century. Forms of intellectual madness become a central theme in the later pages of Bruno's own dialogue. For Democritus and Alberti, see Luca Boschetto, "Democrito e la fisiologia della follia," *Rinascimento* 35 (1996): 3–29.

- 8 The value judgments continue: the Peripatetics smell because their Aristotelian philosophy finds its basis in the senses and encloses man in a limited, earth-centred universe. Pythagoreanism offers a true view of the universal substance by advocating an infinite, heliocentric cosmology based on an order guaranteed by the world soul. The Stoic world soul identifies itself in an idea of God as a rational principle and cause diffused throughout the universe. Eating and drinking here become acts associated with a secular form of Holy Communion.
- 9 The philosopher who sucks the last bones in his plate conjures up an image of the Greek cynic, Diogenes of Sinope (see note 5); but, as Bruno has already identified himself as a modern Diogenes, the reference here is clearly primarily to his own philosophy. The passage evidently intends to define this as sometimes harshly critical, but ultimately optimistic and celebratory, and the dialogue as, in this sense, a comedy.
- 10 In their note on this passage in their translation of *The Ash Wednesday Supper* (1977), E.A. Gosselin and L.S. Lerner refer to the Author's Prologue in Rabelais's *La vie très horricque du grand Gargantua*, first published in 1534. They point out Rabelais's use of the metaphor of the marrow bone when he tries to describe the meaning of his work and exhorts the reader not to be deceived by the apparently frivolous subject matter but to extract from the book the essence of a profoundly serious meaning. The reference is an important one, as the echoes of Rabelais's Prologue are extremely dense in Bruno's Introductory Letter and serve to underline the Epicurean and Lucretian roots of much of his philosophy. Like Rabelais, Bruno was writing a comedy with profound philosophical and religious implications that would not be easily understood, and even less easily approved of, by contemporary cultural and religious authorities. Rabelais's *Pantagruel* and *Gargantua* had both been condemned by the Catholic Church in 1543.
- 11 Psalm 102:9: "For I have eaten ashes like bread, and mingled my drink with weeping." Ash Wednesday derives its name from the ceremonial use of ashes as a symbol of penitence. In Roman Catholic ritual, the priest marks the sign of the cross with ashes on the foreheads of the faithful, saying: "Remember

that you are dust, and to dust you shall return.” The Protestant Reformation abandoned this ritual, though keeping Ash Wednesday as the first day of Lent. For Bruno’s use of the Bible as a literary source in his Italian dialogues, see Hilary Gatti, “La Bibbia nei Dialoghi italiani di Bruno,” in *La filosofia di Giordano Bruno: Problemi ermeneutici e storiografici*, ed. Eugenio Canone (Florence: Olschki, 2003), 199–216.

- 12 As the text will later reveal, Sir Fulke Greville, the close friend and later biographer of Sir Philip Sidney, was the host of the Ash Wednesday supper. Bruno is associating the two Doctors who are among Fulke Greville’s guests at the supper – the two “scarecrows” etc. of this sentence – with an idea of death and decay, which his own philosophy claims to abolish in an ecstatic vision of perpetual vicissitude within an infinite universe: a vision which will, in Bruno’s opinion, “shatter the silence of the graveyard.” Quartan is an ague or fever with a paroxysm every third or, by inclusive reckoning, fourth day (*Oxford English Dictionary*). G. Gentile in his edition of the *Dialoghi italiani* (Bari: Laterza, 1907, rev. 1925) refers these lines to a sonnet of the satirical Florentine poet Berni beginning: “Chi vuol vedere quantunque può natura / In far una fantastica befana, / Un’ombra, un sogno, una febbre quartana / un model secco di qualche figura ... Legga per cortesia questa scrittura” (Whoever wants to see what nature can achieve in the creation of a fantastic witch, a shadow, a dream, a quartan fever, an exact model of some characters ... should, if it pleases them, read these lines). Berni’s savagely satirical sonnet attacks the then Archbishop of Florence, Andrea Buondelmonti, and in a similarly anticlerical spirit Bruno is mocking the two Protestant neo-Aristotelian doctors who will oppose his new philosophy in the course of the dialogue.
- 13 Torquato’s name derives from the twisted chains (*torques*) he wears round his neck, of a type associated with the ancient Gauls and Britons. Nundinius’s name associates him with the ninth day (*nundinae*), or the market day in classical Roman times, when the merchants were identified by the rings they wore on their hands. Both names underline the two characters’ frivolous love of finery, at the same time associating them with the ancient rather than the modern world.
- 14 Giovanni Aquilecchia, in his edition of the *Cena* (Turin: Einaudi, 1955), points out that the itinerary followed by the philosophers who walk to the supper in Dialogue II indicates that it was not held in Fulke Greville’s private house in Brooke Street, Holborn, but in his chambers in the Royal Palace at Whitehall. On 3 June 1592, the Venetian Inquisitors conducting the first phase of Bruno’s trial asked him if in any of his writings he had ever mentioned an Ash Wednesday supper, and if so what did he mean by it? Bruno replied that he had composed a book entitled *The Ash Wednesday Supper* in five dialogues which investigated the movements of the earth, and that the dispute, held with some doctors, took place in England during a supper given on Ash

Wednesday by the French Ambassador, whom he was serving and to whom it was dedicated (see Firpo 1993, 188). This account clearly suggests that the supper actually took place. At his trial, Bruno may have placed it in the French Ambassador's house, rather than Fulke Greville's chambers as the text clearly states, from a lapse of memory, or because it sounded a less dangerous location than the Protestant Greville's rooms. For the figurative, or allegorical, meanings of the night-time journey through London undertaken by Bruno and his followers, see Gatti (2017).

- 15 Lynceus ("eye of the lynx") was one of the Argonauts and twin brother of the giant Idas. He was said to be able to see through trees, stones, and the earth itself. The image was often used to denote the keenly inquiring mind of the new scientist, and it would supply the name of the most celebrated of the Italian academies – the Accademia dei Lincei – founded only a few years later by the young Federico Cesi in 1603 – and made famous by the membership of Galileo.
- 16 Bruno's use of the word "world" in this dialogue, and in his other works dealing with cosmology, is fluid and at times uncertain. Sometimes it is used conventionally to signify our world, the globe we live on; but at others it is used to signify the other celestial bodies populating the universe, which Bruno, developing a Democritean and Lucretian theme against Aristotle, thought were infinite in number: so "an infinite number of worlds." At times the word identifies the concept of a solar system as a world, as Bruno already thought of the infinite universe as containing an indefinite number of other systems of celestial bodies, all revolving around their own central suns. For a discussion of Bruno's contribution to the development of these concepts, see Steven J. Dick, *Plurality of Worlds: The Origins of the Extraterrestrial Life Debate from Democritus to Kant* (Cambridge: Cambridge University Press, 1982), and also Antoinette Paterson, *The Infinite Worlds of Giordano Bruno* (Springfield: Charles C. Thomas, 1970). For the heretical implications of the doctrine of many worlds, see Martinez (2016).
- 17 The traditional Aristotelian-Ptolemaic cosmology thought of the whole universe as composed of seven concentric spheres with earth at the centre, each sphere containing the orbit of one of the seven known planets, including the moon and the sun. Around these seven spheres was a very much larger, but still finite, sphere known as the "sphere of the fixed stars," as it contained all those heavenly bodies that appeared to remain at a fixed distance with respect to the earth. In order to explain a number of discrepancies in the ever more exact observations of the astronomers, and particularly the phenomenon known as the precession of the equinoxes, further spheres were being added to the canonical eight, to make a universe composed of nine, ten, and according to some theories even eleven celestial spheres. For details

of the astronomical theory which had dominated Western thought from late antiquity until the publication of Copernicus's *De revolutionibus*, the reader is referred to Ptolemy, *The Almagest* (1984), and Kuhn, *The Copernican Revolution* (1957/1985).

- 18 Plato in *Cratylus*, 410B, writes of *aethera* that “this element is always running in a flux about the air”: see Plato (1961), 446. Most of Plato’s etymologies in this work are playful inventions, but Aristotle seems to have taken this one seriously, since in *De caelo*, I,3 (270B, 20) he repeats that the name of *aether* is “derived from the fact that it ‘runs always’ for an eternity of time”: see Aristotle (1984), 451.
- 19 Cato the Censor (234–149 BC), a rigid upholder of the Roman values of thrift, courage, and honesty, was famous for the severity of the punishments he inflicted even on the most powerful senators when they fell into corrupt or decadent ways. *Sileni* was the name given to the sons of Silenus, the companion and master of Bacchus. Statues of these rustic divinities could be found in Greek workshops, fashioned on the outside as rough and unattractive objects which, on being opened up, revealed images of divine beauty. The classic description of these statues is found in Plato’s *Symposium*, where Alcibiades describes the unkempt and ill-clothed Socrates as a Silenus in these terms. At the beginning of the sixteenth century, Erasmus in his adage *Sileni Alcibiadis* turned the image upside-down, depicting the powerful of his age as magnificent and impressive outside but decadent and corrupt within. Rabelais, in his Author’s Prologue to *Gargantua and Pantagruel* (see note 10) also uses the image, apparently in the Platonic sense. Bruno’s use of it here and in the later dialogue *The Expulsion of the Triumphant Beast* clearly has both Plato and Erasmus in mind.
- 20 Astyanax, son of Hector and Andromache, was hurled from one of the towers on the walls of Troy by the victorious Greeks.
- 21 Croesus, King of Lydia (560–546 BC), was a legendary figure for the Greeks of his age because of the splendour of the gifts he showered on them. To be “as rich as Croesus,” or “to be a Croesus,” became proverbial expressions.
- 22 The Greek Cynic renowned for his poverty and frugality: see note 5.
- 23 The pomposity of the phrase sounds ironic and suggests that Bruno lodged in an attic, the “den” of the following sentence.
- 24 Diogenes Laertius, in his *Lives of the Philosophers* (VI, II, 38), tells the story of the visit of Alexander the Great to the Cynical philosopher Diogenes. Asked by Alexander to request from him whatever he wished, Diogenes requested him not to stand in his sunlight.
- 25 Henri III of France summoned Bruno to Court shortly after his arrival in Paris in 1581 to question him on his art of memory. Later he found for Bruno a post as one of the *lecteurs royaux* who taught outside the Sorbonne in terms

which were often critical of the Aristotelian conformism of the University. It was presumably Henri III who sent Bruno to England, where he arrived with letters for the French Ambassador Mauvissière. The role Bruno played within the Embassy between 1583 and 1585 is not known. Yates (1982), 151–79, proposed the thesis that he was attempting to further a policy of religious conciliation between England and France. Bossy (1991) suggests that, unknown to Mauvissière, he was spying for Elizabeth I's Secretary of State, Francis Walsingham (see note 4). There is not sufficient documentary evidence at present to prove either of these hypotheses. At his trial, Bruno claimed that in Mauvissière's house he was nothing more than a gentleman attendant to the Ambassador: see Firpo (1993).

- 26 The Great and Little Bear and the constellation Boötes are all in the Northern Hemisphere. The pole star is the tail end of the Little Bear.

### Dialogo Primo / Dialogue I

- 1 In the earlier version of this part of Bruno's text, Smithus is described as a "studious gentleman" and Frulla as his servant. The opening page of this work, in both versions, has a marked dramatic quality: a reminder that Bruno's only previous work written in his native Italian was the comedy *Candelaio*, which had been published in Paris in 1582. On the dramatic elements in Bruno's philosophical dialogues in Italian see Aquilecchia (2000).
- 2 The whole of this work is a reply on Bruno's part to what he considered the humiliating and unjust treatment he received during his two visits to Oxford in the summer of 1583. For surveys of the known documents see McMullin (1986), Aquilecchia (1995), and Gatti (2011), 17–29.
- 3 See also John Florio, *Giardino di recreatione*, 47, sig. G4: "Dottor di Valentia, longa robba, e corta scientia."
- 4 In bk. XXIV of his *Anglica Historia* (1555), Polydore Vergil attributes the official beginnings of the teaching of Greek at Oxford to a fellow Italian humanist, Cornelio Vitelli of Corneto, who is thought to have arrived in England in 1490. Before long, however, English humanists such as William Grocyn and Thomas Linacre, both of whom had studied in Italy, were also lecturing on Greek in Oxford.
- 5 Bruno uses the verb *sapere* with respect to both the doctors' knowledge of Greek and their taste for beer. The Italian verb means both "to know" and "to taste," or "smell of," something.
- 6 Theophilus uses the Italian word "etiamdio" (or "eziandio"), of Latin derivation and not uncommon in the Renaissance, meaning "as well as." But the fastidious Prudentius objects to it as an "antiquated" word choice.

- 7 Prudentius, the pedant, tends to speak in a macaronic form of Latin in order to impress his audience, and Frulla frequently imitates this pedantic habit ironically. These passages have been left in Latin in the translated text, with their English translation given in the notes: "Because there were two witnesses." There is a pun here on the Latin noun *testis*, which can mean both a witness and a testicle.
- 8 "But by Hercules."
- 9 In his *De monade, numero et figura*, published in Frankfurt in 1591, and based on mystical Pythagorean number symbolism, Bruno will write of the number two that it is the first foundation of all numbers according to which there is one thing on this side and another on that, a subject and an object, something subtracted and something added, so that now concord and agreement will no longer be possible as division has entered between you and me. Aristotle claims in his *Metaphysics*, bk. I (A) 986a1, that the original pairs of Pythagorean contraries were ten, and rejects later additions by disciples such as Alcmaeon. For the importance of Bruno's semi-serious celebration of the number two as introducing into the universal whole a principle of negation, see Gatti (2013).
- 10 This distinction is elaborated by Pausanius in Plato's *Symposium*, where they are called the heavenly Aphrodite and the earthly Aphrodite: see Plato (1961), 538–9.
- 11 See Plato, *Protagoras* (352,D) and (355,E): "I above all men should think it shame to speak of wisdom and knowledge as anything but the most powerful elements in human life" and "What would ensure us a good life then? Surely knowledge." See Plato (1961), 344 and 347.
- 12 On circular and rectilinear motion, see Aristotle, *Physics*, bk. VIII, 9, 265a–b, in Aristotle (1985), vol. I, 442–3.
- 13 Aristotle, *Metaphysics*, bk. VII, 3, 1029a1: "in one sense matter is said to be of the nature of substratum, in another, shape, and in a third sense, the compound of these." See Aristotle (1985), vol. II, 1624.
- 14 Aristotle, *Physics*, bk. VIII, 7, 260b1: "all affections have their origin in condensation and rarefaction: thus heavy and light, soft and hard, hot and cold, are considered to be forms of density and rarity." See Aristotle (1985), vol. I, 435.
- 15 Bernardino Telesio of Cosenza (1509–1588) argued in his *De rerum natura*, I, iii, that hot and cold are the principal agents of all things. Heat emanates from the sun and cold from the earth, although nothing is purely hot or cold but always a mixture of the two. Telesio still accepted an earth-centred universe, but he thought of it as united by a single substance that varied only in the heat or cold of its component parts. This concept of a homogeneous universe was an explicit challenge to the Aristotelian physics, which divided

the universe into a sublunary sphere made up of matter composed of the four elements and subject to change, and a celestial sphere composed of an unchanging quintessence. In his second Italian dialogue, *Of the Cause, Unity and One*, Dialogue III, Bruno will praise Telesio as a “very judicious” philosopher. The complete *De rerum natura* was published in Naples in 1586, but the first two books had appeared in 1565 and 1570 respectively. For a comment on this particular passage as a reference to Telesio’s philosophy, see Hilary Gatti, “Telesio, Giordano Bruno e Thomas Harriot,” in *Atti dell’Accademia cosentina: 1991–2* (Cosenza: Accademia cosentina, 1994), 63–74.

- 16 See Genesis 6:19 and 8:16. For Bruno’s frequent references to the Bible in his cosmological works, and particularly to the Book of Genesis and the Psalms of David, see Gatti (2011), 264–79.
- 17 The constellations Aries and Taurus occupy the first two houses of the zodiac at the spring equinox.
- 18 Psalm 32:9: “Be not as the horse, or as the mule, which have no understanding.”
- 19 With the image of the ape already used in the preface, Bruno is underlining the imitative culture of the two doctors. The owl is an image that, in his serious moods, Bruno usually associates with the wisdom of Minerva, according to iconographical tradition. Here, however, Frulla is clearly using it to mock the clumsy short-sightedness of the doctors.
- 20 Nicknames for Pietro Ubaldini and Tommaso Sassetti: two Italians present in London when Bruno was there. Ubaldini was a soldier of fortune who later turned to peaceful pursuits; he taught Italian, illuminated manuscripts, and published several books. Sassetti, after serving as a soldier in Ireland, was condemned to be hanged for a murder committed in London. The Earl of Leicester obtained his pardon and took him into his service together with Ubaldini.
- 21 Isaiah 1:3: “The ox knoweth his owner, and the ass his master’s crib: but Israel doth not know, my people doth not consider.”
- 22 Zecharia 9:9: “Rejoice greatly, O daughter of Zion; shout, O daughter of Jerusalem: behold, thy King cometh unto thee: he is just, and having salvation; lowly, and riding upon an ass, and upon a colt the foal of an ass.” Matthew 21:6–7: “And the disciples went, and did as Jesus commanded them, / And brought the ass, and the colt, and put on them their clothes, and they set him thereon.” A similarly irreverent use of biblical quotations can be found in Theophilo Folegno, *Caos di Triperuno*, selva II; see *Opere italiane* (Bari: Laterza, 1911), I, 323. Bruno will explicitly refer to Folegno as one of his Muses (using his literary name of Merlin Cocai) in the second dialogue of the *Supper*.
- 23 The Italian words *asina* = she-ass, and *pullo* (in modern Italian *puledro*) = colt. Asinio Pullione (in Latin, Gaius Asinius Pollio, 76 BC–5 AD) was a Roman writer and politician who was a friend of Julius Caesar and, after his death,

during the triumvirate, of Anthony, by whose influence he was appointed Consul. He was highly praised by Virgil in his fourth Eclogue, which is dedicated to him and which foretells the dawning of a new and happier age under the influence of a newborn child who some commentators think was Pollio's son. The Middle Ages interpreted the poem as a prophecy of the coming of Christ. Bruno seems to have been mistaken in thinking Pollio the secretary of Augustus, with whom, on the contrary, he refused to collaborate, retiring to private life after the defeat of Anthony.

- 24 Both the “horse” of Silenus and the enemy of the god of gardens, Priapus, were asses. The symbol of the ass was already a central one in Renaissance satirical literature, and would later be further developed by Bruno in his dialogue *La cabala del cavallo pegaseo*; for his development of this theme as part of his philosophical discourse, see Ordine (1996).
- 25 “An expression of excellent wit, a most remarkable enumeration!”
- 26 Prudence “in the masculine gender,” or prudence “made man.”
- 27 “Said not without grace and elegance. So now, enough of these compliments. Let us sit down, given that according to the Prince of the Peripatetics [i.e. Aristotle] it is by sitting down quietly that knowledge is gained.” The reference is to *Physics*, VII, 247b, 10–11: “for we are said to know and to understand when our intellect has reached a state of rest.”
- 28 Giovanni Gentile, in his edition of the Italian dialogues, corrected Frulla’s “tretalogo” to “tetralogo,” but Aquilecchia pointed out that the mistake was intentional and part of Bruno’s characterization of Frulla as a lively but uncultivated participant in the discussion.
- 29 “That is, a discussion between four people ... between two people ... between three people ... between diverse people ... although it is very unlikely that the Greek inventors of that noun thought of that first syllable ‘di’ as the beginning of the Latin word *diversum*.” Prudentius here turns out to be almost as ignorant in his pretentious way as Frulla. The etymology of the Greek word derives from “dia,” meaning “through” or “by means of,” and “logus,” meaning “the word.” The word “dialogue” carries no sense of a necessary restriction to two people only.
- 30 “What times we live in! ... How can we have a satisfactory tetralogue if we do not even know what a tetralogue is and, what is worse, think that it is a dialogue? Is it not necessary to start with a definition and an explanation of the word, as our man from Arpinum teaches?” The reference is to Cicero, who was born in Arpinum. See *De officiis*, I,2,7.
- 31 The mountains of Helicon in Greece were the home of the classical Muses, and a symbol of poetic inspiration. The epic poet, following the example of Homer in the first book of the *Iliad*, traditionally began his work with an invocation to the Muses as the origin of all that was beautiful and sacred in his



culture. Bruno is running together two lines from the *Morgante* of Luigi Pulci: “Odi ribaldo! odi malizia Greca” (XVIII, 175) [“listen, you scoundrel, listen to tales of Greek malice”] and “Non fu mai guercio di malizia netto” (XXI, 138) [“there never was someone with a squint who was not malicious”]. By associating the Greek Muses with the idea of a malicious squint (*guercio*), Bruno is giving his work the character of a mock-epic.

- 32 The obvious sexual allusions behind this baroque celebration of English female beauty are to be related, on a philosophical level, to Bruno’s Renaissance Epicureanism and to his repudiation of the Platonic doctrine of ideas. The reference to Mnemosyne recalls Bruno’s works on memory, in particular *De umbris idearum*, published in Paris in 1582, and *Explicatio Triginta Sigillorum*, published in London in 1583. For Bruno’s doctrine of memory, see Paolo Rossi, *Clavis universalis. Arti della memoria e logica combinatoria da Lullo a Leibniz* (Milan-Naples: Ricciardi, 1960), now in English translation with the title *Logic and the Art of Memory*, translated with an introduction by Stephen Clucas (Chicago: University of Chicago Press, 2000) and Yates (1966).
- 33 The earlier version of these opening speeches of Dialogue I states explicitly that the messengers had come to Bruno two weeks previously and that they were John Florio and Matthew Gwinne. It is made clear later on that the gentleman of the Court who sent the messengers was Sir Fulke Greville.
- 34 This is one of Bruno’s many comments on what he saw as the limits of a study of mathematics, to which he preferred the less abstract inquiry of the physicist. The subject will be developed at more length in a later Latin work: *Articuli centum et sexaginta adversus huius tempestatis mathematicos atque philosophos* (1588). For the importance of this passage within a larger idea of the art of translation, see Giovanni Aquilecchia, “Appunti su Bruno e le traduzioni,” in *Giordano Bruno: Testi e traduzioni*, ed. Hilary Gatti (Rome: Università di Roma “La Sapienza,” 1996), 9–17.
- 35 Bruno has brought together scattered passages from the opening speech by Teresias in Act II, scene ii, of Seneca’s *Oedipus*. The translation is from the fifth tragedy in *Seneca His Tenne Tragedies* (London: Thomas Marsh, 1581), 83.
- 36 Bruno has inverted the historical order. Eudoxus of Cnidus (first half of the fourth century BC) was a pupil and friend of Plato’s, whose Academy he attended. Later he himself founded a scientific school at Cyzicus. He was noted for his theory of the homocentric spheres: see Kuhn (1957), 55–9. Hipparchus of Nicaea was active between 161 and 126 BC and was one of the founders of an astronomy based on observation. He was largely responsible for the abandoning of the ancient heliocentric theories of the universe and the development of an earth-centred system: see Kuhn (1957), 71–3. The Greek astronomer Ptolemy (100–178 AD), in his major work, *Almagest*, offered a detailed exposition of the earth-centred cosmology outlined by Aristotle in

*De caelo*, furnishing the mathematical calculations and using the observations of Hipparchus. His system was largely accepted throughout the Middle Ages and only lost ground slowly after the publication in 1543 of Copernicus's *De revolutionibus*: see Kuhn (1957), 64–72.

- 37 The same mixture of praise for Copernicus's achievement and reservations about those elements of his cosmology, such as the theory of the revolving orbs, which remain linked to the Aristotelian-Ptolemaic system will be repeated in the context of a more technically sophisticated argument in bk. III, chaps. 9–10, of Bruno's *De immenso et innumerabilis*, the final work of the Frankfurt trilogy of 1591. Copernicus was Polish but was born at Thorn in Prussia. Most Renaissance writers refer to him as German. The terms of Bruno's discussion and extension to infinity of Copernicus's cosmology have been much studied. For full bibliographical details, see the sections "The Early Cosmological Discussion" and "The Later Cosmological Discussion" in the Giordano Bruno bibliography available at [www.oxfordbibliographies.com](http://www.oxfordbibliographies.com) ("Renaissance and Reformation").
- 38 A reference to the fact that Theophilus in the main dialogue is to be considered a "double" of Bruno himself, who appears as "the Nolan" only in the previous conversation, which had taken place during the supper itself.
- 39 Luigi Tansillo, a poet much admired by Bruno, came from his home town of Nola and was a friend of Bruno's father. He died in 1568, when Bruno was twenty; for further details of the relationship, see Rowland (2008). The verses cited by Bruno are from his most famous work, *Il vendemmiatore* (*The Harvester*), stanza XXIX, in *LEgloga e i poemetti di Luigi Tansillo*, ed. F. Flamini (Naples [Trani]: V. Vecchi, 1893), 49–84, at 64. In a note to these verses, the editor claims that the sentiment is drawn from Dante's *Convivio*, Tratt. I, cap. 2. The translation is mine.
- 40 Apelles (fourth century BC), a famous Greek artist who painted the official portraits of Alexander the Great. He is said to have put his pictures on show on a balcony and then to have hidden to overhear the remarks of the passers-by.
- 41 Phidias (c. 480–430 BC), the most famous of the ancient Greek sculptors. His name is linked to that of Pericles, who appointed him overseer of the works in marble on the Parthenon.
- 42 The lines open the Chorus between acts II and III of Seneca's *Medea*. The translation is from the seventh tragedy in *Seneca His Tenne Tragedies*, 126. The Argonauts – so-called after the name of their ship, *Argo* – sailed with Jason from Greece to Colchis in the Caucasus in search of the Golden Fleece. Tiphys was the first helmsman of the *Argo* and is often remembered as the first helmsman in history. The quotation is carefully chosen to underline the character of the Nolan philosophy as a less rapacious voyage of discovery, which will increase the power of man within the universe.

- 43 These verses close the same chorus from the *Medea* quoted above. The translation is from *Seneca His Tenne Tragedies*, 127. Thule was the name given to one of the islands north of Britain and was often used to denote any remote region in the north. For the complex play of meaning behind this quotation, see Tarantino (2002).
- 44 Although it sounds here as if Bruno is going to develop a concise form of demonstration, he in fact presents his proposition in an unconnected form of interrogation. His source is probably Sextus Empiricus, whose collected works had been published in Latin translation in Paris and Antwerp in 1569. Bruno's reading of Sextus has been indicated as lying behind his references in the *Supper* to the sceptical Pyrrhonians: see Richard H. Popkin, *The History of Scepticism from Erasmus to Spinoza* (Los Angeles and Berkeley: University of California Press, 1979), 35, and Bruno (1977), 106n85. These texts, however, fail to identify the precise allusion here to Sextus's *Pirronian Sketches*, bk. II, sect. 13, where he illustrates various forms of demonstrations which remain inconclusive because unconnected, such as: "If it is day, there is daylight. But in the market-place they are selling corn. Therefore Dione is walking about." But although Sextus defines such reasoning as inconclusive because unconnected, he further maintains that there is no agreement about what constitutes correct forms of connection, so that all reasoning has to be considered as more or less inconclusive. In the case of Bruno's introduction of the figure of the Nolan into his text, the question of what exactly he "is" remains open both in substance and in form. The answer to the question will not be "easily and evidently proved," but only suggested by the development of his work in all its rich and varied propositions, as well as doubts and contradictions.
- 45 The verses are a central passage from the same chorus in the *Medea* quoted above. For the translation, see *Seneca His Tenne Tragedies*, 126–7. Bruno is using the story of the Argonauts to attack the voyages of discovery of the new imperial powers, in particular England herself and Spain, whose colonial adventures he will criticize even more bitterly in the *De immenso*, bk. III, chap. 16. For Bruno's attitudes towards the discovery of the Americas, see Saverio Ricci, "Infiniti mondi e mondo nuovo. Conquista dell'America e critica della civiltà europea in Giordano Bruno," *Giornale Critico della Filosofia Italiana* 2 (May–August 1990): 204–22.
- 46 The verses are from Ariosto's *Orlando furioso*, bk. XXXV, I, i–ii. The translation is from *Orlando furioso in English*, translated by John Harington (London: Richard Field, 1591). They are an invocation by the poet, who claims to have lost his reason through love of his lady and compares his own plight with that of Orlando. Orlando's lost sanity, closed in a bottle on the moon, has just been retrieved by the paladin Astolpho, who reached the

moon with the help of St John the Evangelist. For the importance of Bruno's multiple quotations from Ariosto in this work, see Bolzoni (2002).

- 47 Luigi Tansillo, *The Harvester*, stanzas XVIII and XIX: see note 39. Bruno introduces a significant variant at line 3 of stanza XIX, where Tansillo writes "Ch'anch'io d'andare a Ciel gia' non dispero" (I too do not despair of going to Heaven). In Bruno's version this becomes "Io d'aver di miglior gia' non dispero" (I do not despair of leading a better life – meaning in our present life rather than in a life after death). The immediately preceding stanza XVII of Tansillo's poem asks the reader why he should look for happiness outside himself when he can find a paradise within: a sentiment which Bruno is also concerned to express here. Tansillo's poem is itself clearly an expression of Renaissance Epicureanism. Bruno tends to highlight these Epicurean elements, which he will celebrate openly in the last of his Italian dialogues, *De gl'eroici furori*, part I, dial. 5, sect. IX. This translation of Tansillo's sonnet is mine.
- 48 "If your affairs and your fortune are not what they were, find a way of being happy with what you have now. Never be alone in despising the opinion of the common people, as you will please nobody by condemning the crowd." Prudentius is quoting here from what Theophilus in his reply calls "a wise man": actually from Cato, the Censor of ancient Rome. See *Disticha catonis*, III, ii and II, xxix.
- 49 "It is from the wise that one must learn; the ignorant should be instructed." See *Disticha catonis*, IV, 23.
- 50 The question of whom to initiate into the secrets discovered by the new science was hotly debated at the end of the sixteenth and the beginning of the seventeenth centuries. Francis Bacon in his *New Atlantis* has the Father of the House of Salamon say: "we have consultations, which of the inventions and experiences which we have discovered shall be published, and which not: and take all an oath of secrecy, for the concealing of those which we think fit to keep secret: though some of those we do reveal sometimes to the state, and some not." See Bacon, *The Works* (London: Longman, 1859), vol. III, 165.
- 51 "What, do you want to sail to Anticyra? Do you think that you are the first philosopher to show little respect towards the great Ptolemy, and towards a crowd of other eminent philosophers and astronomers? You search for difficulties where there are none." The reference is to two proverbs from Erasmus's collection of *Adagia* (I, 8, 52 and II, 4, 76 respectively), published in various editions during the sixteenth century. Anticyra was a town in Phocis, on the Corinthian gulf, renowned for its hellebore, a herb supposed to cure madness. To travel to Anticyra therefore means to be mad.
- 52 Job 12:12.

- 53 For Eudoxus, see note 36. His successor at the school of Cyzicus, Callippus (c. 370–300 BC), had attended the school of Aristotle in Athens and later developed Eudoxus's theory by adding further homocentric spheres to account for the retrocession of the planets Mercury, Venus, and Mars. See Kuhn (1957), 55–9.
- 54 For Hipparchus of Nicaea, see note 36.
- 55 Menelaus of Alexandria was a Greek astronomer and mathematician who lived in the first century AD. Bruno probably called him a Roman because he is known to have made observations at Rome in 98 AD.
- 56 Mohamet Haracensis, or Al Battani (Albategnius in Latin), was born at Harran in Mesopotamia in 858, died 929. He was an Arabic astronomer whose astronomical tables were conserved both in Arabic and in medieval Latin translation. A Renaissance version was printed at Nuremberg in 1537, which included additions and demonstrations by Regiomontanus, the Latin name of the famous German mathematician Johannes Müller (1436–1476).
- 57 All the preceding names and figures are taken from Copernicus, *De revolutionibus orbium coelestium*, bk. III, chap. 2, without alteration except that Copernicus puts Menelaus 422 years after Alexander, not 462.
- 58 Bruno uses the word *sale*, or salt, which, in Italian as in Latin, can also mean understanding, intelligence, or wit. The value accorded to salt by the ancients had already been underlined by Erasmus in his adage “Qui circa salem et fabam.” Bruno's use of the concept again in *Lo spaccio della bestia trionfante* has been commented on by Alfonso Ingegno in *La sommersa nave della religione: Studio sulla polemica anticristiana del Bruno* (Naples: Bibliopolis, 1985), 112.
- 59 This passage and the remaining pages of the first dialogue, which repeat the concept of the superiority of the modern scientific thinker with respect to his antique counterpart, have been the theme of an intense debate among Italian scholars ever since Giovanni Gentile praised these pages in an essay entitled “*Veritas filia temporis*” in *Il pensiero italiano del Rinascimento* (Florence, 1940), 331ff. This essay was sharply criticized by Eugenio Garin (see “La storia nel pensiero del rinascimento,” in *Medioevo e rinascimento* [Rome and Bari: Laterza, 1954], 179–95) on the grounds that Bruno's praise of the moderns here is not a general view of history as a progressive act of the spirit but rather a specifically scientific form of historicism. Aquilecchia (in his 1955 edition of the *Cena* for Einaudi, 56–8) also finds in these pages a development from an antique, providentialist concept of the universe towards an experimentalist, scientific one.
- 60 This “chain” of antique philosophers and Magi was a frequent Renaissance topos. It appears in a letter from Ficino to Cosimo dei Medici, where the list reads: “Trismegistus, Orpheus, Aglaophemus, Pythagorus, Philolaus, Plato.”

Pico della Mirandola has a similar list: “Pythagoras, Aglaophemus, Philolaus, Plato and the Platonics.” Copernicus repeatedly refers to the same group of ancients as expounders of a heliocentric universe, or at least a cult of the power of the sun. The fact that Hermes Trismegistus, author of the group of religious and mystical tracts known as the *Corpus Hermeticum*, was not one of these early sages but a Neoplatonist of the first centuries AD was only established in 1614 by Isaac Casaubon. On this subject, see Antony Grafton, “Protestant versus Prophet: Isaac Casaubon on Hermes Trismegistus,” *Journal of the Warburg and Courtauld Institutes* 46 (1983).

- 61 See *De caelo*, I, 3, 270b, 16–20, in Aristotle (1985), 451: “The name, too, of that body (i.e. the outermost heaven) seems to have been handed down right to our own day from our distant ancestors who conceived of it in the fashion which we have been expressing. The same ideas, one must believe, recur in men’s minds not once or twice but again and again.” Theophilus repeats the same concept later on, noting again its Aristotelian source.
- 62 The terms “Guelph” and “Ghibelline” indicated two warring factions which rose up in the Middle Ages, one in favour of agreement between the Papacy and the Holy Roman Emperor (Guelphs) and the other hostile to papal supremacy (Ghibellines). With the waning of the struggles for power between the Emperors and the Popes, the terms became more loosely used to designate the two sides in any quarrel or feud.
- 63 Vincenzo Spanpanato in his still valid *Vita di Giordano Bruno* (Messina: Principato, 1921), 39, 824, and 828, has pointed out that a Pier Antonio Costanzo was one of the soldiers in the service of the Count of Caserta together with Bruno’s father, and has suggested him as the “master” of this story.
- 64 “Our own Aristotle, Prince of the Peripatetics,” or “our own Plato, and so on.”
- 65 The ancient philosophies that Bruno is celebrating in this page are clearly the pre-Socratic ones, judged insufficient by Aristotle himself. See on this subject Celenza (2000), where it is claimed that Bruno’s natural philosophy can be seen as a “pre-Socratic Renaissance.” See also, on the same subject, Dialogue V, note 5.
- 66 For this rule of the Pythagorean school, see Diogenes Laertius, *Lives of the Philosophers*, VIII, chap. 1, 7. For the ideas of the Pythagoreans, as they were expressed in the lost book of one of their major exponents, see C.A. Huffman, *Philolaus of Croton: Pythagorean and Presocratic* (Cambridge: Cambridge University Press, 1993).
- 67 Diogenes Laertius, *Lives of the Philosophers*, IX, chap. 11, 69–70. Richard Popkin in his *History of Scepticism*, 35, refers Bruno’s remarks here about the Pyrrhonian sceptics to his reading of Sextus Empiricus, who became popular with many humanists and philosophers in the second half of the sixteenth century.

- 68 Aristarchus of Samothrace (216–144 BC), the distinguished grammarian and director of the library in Alexandria of Egypt. He was influential in establishing a technical grammatical terminology and introduced the division of speech into eight parts. His name was sometimes used, as Bruno is doing here, to indicate a particularly rigorous and didactic teacher. Not to be confused with Aristarchus of Samos (c. 310–250 BC), the Greek astronomer who was the first to develop in technically convincing terms a heliocentric cosmology.
- 69 The problem that the ideas absorbed in childhood often become impediments to the discovery of new knowledge is underlined in other works by Bruno, but can also be traced back to previous authors such as Cicero and Averroes.
- 70 By presenting himself as a specially illuminated guide to truth, Theophilus is bringing together echoes of Lucretius's praise of Epicurus as the Master of Philosophies in his *De rerum natura* and Pythagoreanism, which, throughout this dialogue, is proposed by Theophilus as the primal and most valid of philosophies. Pythagoras, according to ancient sources, taught his pupils from behind a veil, and was referred to not as a man but as a superman. The objections voiced by Smithus to the concept of the super-philosopher, and the necessity of keeping his knowledge secret, safe from the ignorance of the general public, are, however, clearly stated, and given considerable prominence by Bruno. For the importance of this debate between Smithus and Theophilus, see Hilary Gatti, "Smitho: un mediocre o un saggio?" *Nouvelles de la république des lettres* 2 (1994): 197–200.
- 71 "The fields are saturated; for already the dewy night falls from the sky." Prudentius has tacked together two Virgilian tags, the first from the *Eclogues*, III, iii, and the second from the *Aeneid*, II, 8–9.

## Dialogo Secondo / Dialogue II

- 1 This is the first mention of Greville by name, although he may be identified as the knight of the court who in Dialogue I sent two gentlemen to invite the Nolan to explain "his opinion of Copernicus and other paradoxes of his new philosophy." Later on he will be the host at the supper narrated in Dialogues III and IV. Bruno seems to have lost Greville's friendship at a later date because of what in the Explicatory Letter to his fourth Italian work, *The Expulsion of the Triumphant Beast*, dedicated to Sir Philip Sidney, he will call the poisoned words of jealous "Erinni" (gods bearing illness and death).
- 2 The precise date of the supper that Bruno claimed took place on Ash Wednesday, 1584, was previously the subject of some confusion, owing to the differences between the Gregorian calendar in use on the Continent of Europe (and therefore in the French Embassy in London) and the Julian calendar still in use in England. It has now been established that Ash Wednesday

1584 was on 4 March (according to the old-style Julian calendar) but on 15 February (according to the new-style Gregorian calendar): see Bossy (1991), 43–5. The later dialogue commenting on the supper and the discussion which took place there may be taken to coincide with the composition of the work itself some days after Ash Wednesday.

- 3 “Apostrophe, pathos, invocation, in the style of poets.”
- 4 “With great pleasure.”
- 5 See Spampanato (1921), 419 and 367, for the identification of Bruno’s Italian friends in England, among whom were John Florio, who was living in the French Embassy with him; Alberico Gentile, the distinguished student of international law who would later be influential in finding Bruno a teaching post at the University of Wittemberg; Alessandro Citolini, who is mentioned by name here as the Italian gentleman who had his arm broken in a street brawl; and Florio’s friend Theodore Diodati. All of these figures were Protestant refugees who had arrived in England to escape persecution by the Counter-Reformation. For the Italians in England during the sixteenth century, see Wyatt (2005).
- 6 The French Embassy stood in Butchers’ Row, a street which led into the Strand, but the French Ambassador’s residence, where Bruno lodged (no longer extant), was in nearby Salisbury Court, which was linked to Fleet Street by a passage called Water Lane. Instead of going north into Fleet Street and then walking along the Strand to Charing Cross and on to Whitehall, the party went southwards along Water Lane towards the Thames in search of a boat to take them to the Whitehall landing stage. The “Palace” referred to as their destination is the royal palace at Whitehall, where Fulke Greville had official rooms.
- 7 Thomas Sackville, First Earl of Dorset and Baron Buckhurst (1536–1608), held a number of high official positions, including those of Lord Treasurer and Chancellor of Oxford University. Together with Thomas Norton (1532–1584), he wrote *Gorboduc or Ferrex and Porrex*, one of the earliest English tragedies. Buckhurst was also the author of the *Induction* to the second part of the popular *Mirror for Magistrates*, published in 1563. The poem introduces this text – which tells of the misfortunes of great historical figures come to grief – with an account of a nightmare journey in which Sorrow accompanies the poet to Hades, or hell. Buckhurst’s landing-stage appears here as the first frustrating stop in the detour, which takes the philosopher and his companions out of the direct route towards the philosophical and cosmological debate that is the true subject of Bruno’s dialogue. For an account of the allegorical meanings of Bruno’s night-time London journey, see Gatti (2017).
- 8 Charon is the name of the ferryman who rows the souls of the dead over the River Acheron. In Virgil’s *Aeneid*, VI, 443–5, he is depicted as filthy and



frightening, with a long, unkempt beard. For the echoes of bk. VI of Virgil's *Aeneid* in this part of Bruno's text, see Bruno (2015), 78nn11–12.

- 9 See Ariosto, *Orlando furioso*, XXVIII, 85–91, for the journey by boat of the unhappy Rodomonte. On Bruno's references to Ariosto's *Orlando furioso* in this part of his text, see Bolzoni (2002). On the specific reference to Rodomonte, see Jossa (2008).
- 10 From the *Aeneid*, VI, 413–14. The translation is from *The Eclogues, Georgics and Aeneid of Virgil*, trans. C. Day Lewis (Oxford: Oxford University Press, 1966), 297. The frequent quotations in this part of Bruno's text from the *Aeneid*, bk. VI, associate Bruno's night-time journey through London with Aeneas's descent to the infernal regions.
- 11 "The eternal light." The allusion is to the Christian service for the dead, which leads them towards the eternal light, whereas the pagans embark for the infernal regions with Charon.
- 12 From Petrarch's sonnet 102: "Cesare, poi che'l traditor d'Egitto," vv. 5–7. The translation is from *Petrarch's Songbook*, trans. James Wyatt Cook (Binghamton: Medieval and Renaissance Texts and Studies, 1996), 146–7.
- 13 "A sardonic laugh." See Erasmus's adage, *Risus sardonicus* (3,v,1), for the literary history of the despairing laughter which accompanied ancient Sardinian burial services. The modern form "sardonic" only replaced "sardonian" in the seventeenth century.
- 14 "Deh! dove senza me, dolce mia vita, / Rimassa sei sì giovane e sì bella": Ariosto, *Orlando furioso*, VIII, 76, 1–2.
- 15 "Di cocenti sospir l'aria accendea / dovunque andava il Saracin dolente" and "Oh femminil ingegno, egli dicea, / Come ti volgi e muti facilmente": *ibid.*, XXVII, 117, 1–2 and 5–6.
- 16 "Hasten slowly." Latin translation of a Greek adage used as his motto by the Emperor Augustus. It was the title given by Erasmus to the first adage in his collection.
- 17 "An excellent description that ..."
- 18 The god of gardens and vineyards, Priapus, took the form of an ass and was associated with heavy drinking and lechery.
- 19 So called because it was the ancient site of the religious military order of the Knights Templar, suppressed in 1312. Edward III then granted the Temple, situated in Fleet Street, to the students of common law, who divided it into two parts known as the Inns of Court, made up of the Inner Temple and the Middle Temple.
- 20 "Nature has established in principle that rustics of all kinds do nothing for the love of virtue and very little for fear of punishment."
- 21 "Pleaded with, he becomes arrogant; when struck, he pleads; covered with blows, he adores": Juvenal, *Satires* III, 293 and 300.

- 22 Merlin Cocai was the literary name assumed by the Benedictine monk Theophilo Folengo (1491–1544), who published most of his works under that pseudonym. He was the major poet to write in macaronic Latin, and in his mock-epic poem *Baldus* he calls on Maphelina as his peasant Muse, describing her as “a fat muse of the stomach” and following his invocation with a succulent description of the dishes she cooks in her kitchen. Folengo’s works combine a concrete vein of narrative realism, often harshly critical of the lower classes he so vividly describes, with a metaphorical and allusive dimension that transfigures his tale into spiritual allegory. He is clearly one of Bruno’s major literary sources in this part of his text.
- 23 Rather than to the *Purgatory*, there is a clear reference here to Dante’s *Hell*, canto VII, 100–30, where Dante and Virgil pass with difficulty through the Stygian bog, watching the choleric sinners wallowing unhappily in the mud. The bitterness and anger of these sinners clearly associate them with the Malcontent of Bruno’s opening poem: they are the powerful but jealous pedants who prevent the flowering of a new scientific philosophy. Thomas Harriot may have had this passage in mind when he wrote to Kepler from London in 1608 that he could not philosophize freely, for here “we still stick in the mud”: see Gatti (1989/2013), 72.
- 24 The lake of Avernus, situated in a volcanic crater in the region of Campania south of Rome, was reputed to be the tomb of the birds which flew over it and which succumbed to the sulphurous exhalations of the neighbouring Flegrian Fields. Both Ulysses and Aeneas were said to have passed through this region on their way to the underworld, and the name of Avernus came to signify the infernal regions themselves.
- 25 Bruno is quoting part of a sonnet by Luigi Tansillo, a poet of a previous generation, also from Nola, who figures as one of the speakers in his later dialogue *On the Heroic Frenzies*. For the whole sonnet, see Luigi Tansillo, *Rime*, ed. Tobia R. Toscano (Rome: Bulzoni, 2011), vol. I, 327. The translation is mine.
- 26 The quotation is not from the Epicurus of classical antiquity, but from the sixteenth-century Italian poet Marc’Antonio Epicuro, author of a tragicomedy entitled *Cecaria*. Bruno is quoting imperfectly from the first and third tercets. The translation is mine.
- 27 “Non datur infinitum in actu”: see Aristotle, *Physics*, III, 5, 204a20.
- 28 “Come to a conclusion.”
- 29 “Tandem laeta arva tenemus”: see Virgil, *Aeneid*, VI, 744.
- 30 This entire passage recalls the major Italian work of Theophilo Folengo (see note 22), *Caos del Triperuno*, a kind of Dantesque allegory that leads the reader through three wildernesses of the spirit towards a state of beatitude. At the centre of the second wilderness lies the reign of Clio, Muse of History,

which Folengo depicts as the muddy labyrinth of Peripatetic philosophy from which he despairingly looks for a way of escape. The final verses merge lines from Petrarch's sonnet 15 ("Io mi rivolgo indietro a ciascuno passo") and his canzone 268 ("Che debb'io far? Che mi consigli, Amore?"). See *Petrarch's Songbook*, 40–1 and 310–11.

- 31 The art of foretelling the way.
- 32 The spacious main road which the travellers have reached coming from the Thames is the Strand, and they are thinking of turning right, or away from Whitehall towards Butchers Row, where the French Embassy was situated.
- 33 "Meior es perdere, che mas perdere." A Spanish proverb.
- 34 Aquilecchia sees a further reference here to Petrarch's canzone 268 (see note 30 above). Bruno may also be referring again to Folengo's *Caos del Triperuno* (Selva I), where the poet describes a crossroads, one way leading to the chimeras, dreams, and false fantasies of neo-Aristotelian philosophy, and the other towards a true spiritual victory over the chaos of the shifting, material dimension of life. Behind all these passages, there is a reference to the common Renaissance theme of Mercury at the crossroads, where Mercury, associated with rhetoric and true culture, indicates the way out of the *opinionum labyrinthi* of scholastic philosophy: see Barbara C. Bowen, "Mercury at the Crossroads in Renaissance Emblems," *Journal of the Warburg and Courtauld Institutes* 48 (1985): 222–9.
- 35 "O passi graviores." Virgil, *Aeneid*, I, 199.
- 36 "An elegant exaggeration."
- 37 This is where the alternative versions of Folio D of Dialogue II commence. The version presented here in the text and translation corresponds to the version known as the "vulgata," which survives in forty or more copies, and which I consider Bruno's final version. For both a text and a translation of the alternative version of these pages, extant in printed form only in the copy held at the Trivulziana library in Milan, see the Appendix at the end of this volume. For a comment on the textual problems involved, see the Note on the Text.
- 38 Bruno will repeat these sentiments in his later Latin work, *De monade*, bk. VII: see Bruno, *Opera latine conscripta*, I (pars. 2), 424–5.
- 39 Another inexact quotation from Virgil's *Georgics*, I, 121–4. For the English translation, see *The Eclogues, Georgics and Aeneid of Virgil*, trans. Lewis, 55.
- 40 Frulla is alluding critically to the poetic tradition of satirical praise of lowly things, which started in classical antiquity with Virgil, and was being emulated by modern poets such as Berni, Doni, and Aretino.
- 41 This passage, which is absent from the earlier version, is a free rendering of the biblical book of 1 Samuel, chap. 9, and seems to underline a sense of the night-time journey to the rooms of Fulke Greville as the discovery of

a new universal kingdom of light represented by the new post-Copernican, infinite cosmology.

- 42 “Good. Very good. Go on, Theophilus.”
- 43 Elizabeth I succeeded her sister Mary Tudor on 17 November 1558, and the coronation took place on 1 January 1559. Bruno is participating here in the cult surrounding Elizabeth and her Court, which tended to present her as a mythical and almost supernatural empress representing universal peace and justice: see Frances Yates, “Queen Elizabeth as Astraea,” *Journal of the Warburg and Courtauld Institutes* 10 (1947): 27–82, and Yates (1975).
- 44 The Treasurer of the kingdom was William Cecil, Lord Burghley, not mentioned in the earlier version of this part of Bruno’s text. Robert Dudley (1532?–1588), Earl of Leicester, the uncle of Sir Philip Sidney, had eagerly wooed the Queen herself during the early years of her reign, but in 1578 had married Lettice Knollys, Countess of Essex. Leicester represented the more radical Protestants at Court, with commercial and maritime interests, often in opposition to the more moderate Protestantism of Lord Burghley. For Leicester’s role in the complex religious history of Elizabeth’s reign, see Patrick Collinson, *The Elizabethan Puritan Movement* (London: Cape, 1967).
- 45 Sir Francis Walsingham was the Queen’s private secretary and the recognized head of Elizabeth’s highly efficient security service. His daughter Frances married Sir Philip Sidney in 1583, the same year as Bruno’s arrival in England. Walsingham was the recipient in this same year of a number of secret letters sent from the French Embassy and signed Henry Faggott, which led to the unveiling of the Throgmorton plot to assassinate Elizabeth I. John Bossy has proposed Bruno himself as a candidate for Henry Faggott, but later withdrew this suggestion. See Bossy (1991 and 2001).
- 46 Although no references to Bruno have so far come to light in the papers of Sir Philip Sidney or his circle, Bruno’s works suggest not only admiration but also a personal relationship or at least a meeting with Sidney himself, as well as his friend Fulke Greville, during Bruno’s stay in London. Sidney had travelled on the Continent between 1572 and 1575, and had been widely admired for his culture and his exquisite manners, as Bruno’s remarks here confirm. Later, Bruno dedicated publicly to Sidney the important introductory letters to his dialogues *Lo spaccio de la bestia trionfante* (*The Expulsion of the Triumphant Beast*) and *Gli eroici furori* (*The Heroic Frenzies*).
- 47 In reading the following pages, it should be remembered that Bruno was not the only foreigner in the sixteenth century to complain of the hostile behaviour of the common English people. Erasmus, in a letter to Andrea Ammonio of 8 July 1514, written after he had risked being robbed of his manuscripts during the crossing from England to France, wrote: “they treat foreign visitors so badly that it would be better to fall into any Turk’s hands than theirs.”

Bruno's friend John Florio has this dialogue in his *First Fruites*: "What do you think of English behaviour?" "I think that some behave very well and others very badly." "But who do they usually behave badly with?" "With foreigners."

48 "Every division must be into two parts, or at least reducible to two parts."

49 See Ovid, *Metamorphoses*, VII, 121, where the poet narrates the myth of Jason and the Argonauts, and their search for the Golden Fleece. On their arrival in Colchis, they had to rescue the fleece from a dragon. After killing the dragon, Jason was required to give further proofs of his courage, including sowing the dragon's teeth in the ground and then killing the fierce warriors who sprang up from them.

50 Mercury was depicted with winged heels because of his role as messenger of the gods. The winged horse Pegasus was said to have caused the fount Hippocrene to flow on Mount Helicon, the abode of the Muses. Perseus, the son of Danae and Zeus, also had winged heels and was said to be the first rider of Pegasus. Cantos XXXIII–IV of Ariosto's *Orlando furioso* tell the story of Astolfo's journey through France, Spain, and Africa on his hippogriff, a winged horse with the head of an eagle. The Old Testament Book of Judges, 6:1 tells the story of the children of Israel, who, as a punishment for their sins, were delivered into the hands of the Midians (in the Vulgate "Madians"), whose "camels were without number." The Gospel of St Matthew, chap. 2, tells the story of the three wise men who followed the star in search of the newborn Christ. There is no mention of them being mounted on giraffes; usually they are depicted as riding on camels.

51 "From lightning and tempest, from wrath and indignation, from malice, temptation, and the fury of rustics ... free us, O Lord." The exchange is a parody of the Lenten liturgy.

52 "Every rule has an exception."

53 "'The servant of servants' is no mean title, in any case." Prudentius is referring to the title *servus servorum Dei* (servant of the servants of God) held by the Pope.

54 The "Borsa" was built in 1566 by Thomas Gresham, who had been commissioned to build a *Burse*, or a place for merchants to assemble. In 1570, after a visit by the Queen, it became known as the Royal Exchange. The Parisian Palace referred to is probably the Chatelet, the site of law courts. San Paolo Maggiore was the old Neapolitan cathedral. Bruno is probably referring in Venice to the district of the Rialto rather than the bridge itself. John Florio, in his dictionary *A New World of Words* (1611), described it as "an eminent place in Venice where Merchants commonly meete, as on the Exchange at London." The Campo dei Fiori in Rome was a noted marketplace but also a place where heretics were burnt at the stake, as Bruno himself would be on 17 February 1600.

- 55 The early draft of the text (see the Appendix) failed to specify that the Italian in question was Alessandro Citolini, calling him only a “poor Italian gentleman,” and giving his leg as being broken, not his arm. Citolini was a Protestant exile who had arrived in England via Switzerland in 1566. He lived in London from 1570 until his death in 1584, which had probably just occurred when Bruno revised his text. Besides works on the art of memory, of which the most important is *Tipocosmia* (Venice, 1561), Citolini published in 1551 a letter in defence of the use of modern languages rather than Latin. For Citolini’s doctrine of memory within the ideas current at the time, see Lina Bolzoni, *La stanza della memoria* (Turin: Einaudi, 1995), 257–9; English translation, *The Gallery of Memory* (Toronto: University of Toronto Press, 2001).
- 56 Bruno is explicitly doubling his personality here. “The Nolan” is the protagonist of the conversation at the supper, but not present at the secondary conversation except as his mouthpiece Theophilus, who is speaking at this point. *L’arca di Noè* (Noah’s Ark) is the title of a lost work of Bruno’s, also mentioned in his later dialogue *Cabala del cavallo pegaseo*.
- 57 The passage is a satirical reference to the separation of the sheep from the goats in the Gospel of St Matthew, chap. 25, where Christ on the day of universal judgment places the sheep on his right hand, promising them that they will inherit everlasting life in the kingdom of God, while the goats on his left hand are destined to fall into the everlasting punishment of hell.
- 58 “The Ram in the first place, and then the Bull.” For Bruno’s unconventional interest in, and use of, the traditional signs of the zodiac, see the entry *Astrologia* by Ornella Pompeo Faracovi in volume III of Canone and Germana Ernst (2006–14).
- 59 Bruno and his party at this point have reached Charing Cross at the end of the Strand, where a crucifix had been erected in 1293 by Edward I to commemorate the death of his wife Eleonora. This pyramidal monument, which Bruno seems to be referring to, was destroyed by the Puritans in 1647.
- 60 “Again.”
- 61 “Farewell.”

### Dialogo Terzo / Dialogue III

- 1 “Around him.”
- 2 “These were the first words, the first sentiments, he uttered.”
- 3 This third and central dialogue represents the confirmatory part of the macro-structure, while at the same time Nundinius’s five propositions correspond to a micro-structure composed of the elements of a classical oration: exordium, narration, confirmation, refutation, and peroration. Traditionally the exordium was supposed to be brief and to supply the orator with the occasion

of establishing an authoritative relationship with his audience. Bruno achieves this here by subtly capping Nundinio's suggestion of his inferiority, because he is unable to speak English, with considerations of the limits of the English language as compared with his native Italian. In the sixteenth century, few knew English, or used it, outside its island home.

- 4 "Do you understand, Sir, what we are saying?"
- 5 "Some people are deaf by nature, others because of a physical accident, others by a conscious act of will."
- 6 Florio in his *Firste Fruites* (50r–v) underlines that, in the reign of Elizabeth I, the English language was of use only in England itself and of no use beyond Dover. "So it is not used abroad in other countries?" "No, Sir, for whoever would they speak it with?" "With English merchants." "The English merchants themselves prefer not to use it outside England, and refuse to speak it."
- 7 Bruno is known from two separate sources to have spoken during his disputes at Oxford on the necessity of translations as essential for the diffusion of knowledge. See the testimony of N.W. in the Preface to Samuel Daniel's translation of the *Imprese* of Paolo Giovio (1585) and Florio's Preface *To the courteous Reader* to his translation of the *Essays* of Montaigne (1603). See also Giovanni Aquilecchia, "Appunti su Bruno e le traduzioni," in *Giordano Bruno: Testi e Traduzioni*, ed. Hilary Gatti (Rome: Università degli Studi di Roma "La Sapienza," 1996), 9–17.
- 8 This is the beginning of the properly cosmological and astronomical section of this work. For Bruno's reading of Copernicus, see the Introduction to this volume. For the diffusion of the so-called "Wittenberg interpretation" of Copernicus's heliocentric astronomy, which accepted it only as a new method of calculation, see Westman (1975a). The Catholic part of Europe was even more stringent in accepting only a mathematical reading of Copernicus. The question would become a major issue in Italy during the Galileo affair: see Finocchiaro (1989).
- 9 The reference is to the anonymous Introductory Letter to the *De revolutionibus*, which claimed that the Copernican theory should be considered purely as a hypothesis for the convenience of calculation. Bruno was the first to denounce this Letter publicly as spurious; although in England Thomas Digges, in his note to the Reader prefixed to *A perfit description of the Celestiall Orbes* (1576), which includes the first English translation of the first book of *De revolutionibus*, had already suggested that Copernicus "ment not as some have fondly excused him to deliver these grounds of the Earthes mobility onely as Mathematicall principles, fayned & not as Philosophical truly averred" (fol. M1r). The name of the Protestant Andreas Osiander as the true author of the Letter would later be revealed by Kepler in his *Astronomia nova ... de motibus stellae Marti* (Prague, 1609).

- 10 The appearance of the planet Venus constituted a traditional objection to the Copernican system until the problem was solved by Galileo's observations with the telescope. In the Copernican system, Venus becomes the second planet circling the sun, and earth the third. Given that the earth and Venus have different periods of revolution, Venus should exhibit phases similar to those of the moon; but, because of its distance from earth, such phases (first observed by Galileo through his telescope) are not visible to the naked eye. For this and other traditional pre-Galilean objections to the Copernican system, see Finocchiaro (1989), 18–23.
- 11 For the importance of Copernicus's own prefatory letter to *De revolutionibus*, addressed to Pope Paul III, see Westman (1990).
- 12 Nicetus of Syracuse is said by Cicero (see *Acad. Prior.*, II, 123) to have suggested the rotation of the earth about its own axis. Philolaus the Pythagorean proposed the idea of a cosmos which revolves around a central fire, although this was not the sun (see Diogenes Laertius, *Lives of the Philosophers*, VIII, 85, and now the relevant sections of Carl A. Huffman, *Philolaus of Croton: Pythagorean and Presocratic* [Cambridge: Cambridge University Press, 1993]). Heraclitus of Pontus (fourth-century BC) was a pupil of Plato's who refused to believe in revolving orbs but developed a system in which Mercury and Venus revolve around the sun while the earth, which revolves around its own axis, remains at the centre: similar to the post-Copernican system being proposed by Tycho Brahe (1546–1601) in an attempt to reconcile Copernicanism with orthodox ideas about the centrality of the earth. Ecphantus of Syracuse, another Pythagorean, accepted that the earth revolves around its own axis from east to west. Plato in the *Timaeus* 40, b–c, writes: "And the earth our foster-mother, winding as she does about the axis of the universe, [our Maker] devised to be the guardian and maker of night and day." Modern commentators have agreed with Bruno about the obscurity of this passage, and doubted whether Plato really intended to make the earth move. Aristotle, however, in *De coelo*, II(B)13, 293b 30, interprets Plato as meaning that the earth is at the centre but "revolves about the pole which unites the whole." The importance of the fifteenth-century Cardinal Cusanus (1400–1464) as a source of Bruno's thought about the infinity of the universe has been recognized since the nineteenth century. In bk. II, chap. 12 of *De docta ignorantia*, Cusanus suggests that the earth moves in spite of the fact that it appears not to.
- 13 Bruno seems to accept that there was no definite "proof" of the Copernican theory in his day. Although Galileo thought he had proved the Copernican theory with the movement of the tides, he was mistaken, and a properly scientific proof would only be obtained in the nineteenth century. See Kuhn (1957/1985).
- 14 See note 10.



- 15 Bruno's reasoning here may have been influenced by the *Optics* of Ibn Al-Haytham (Alhazen), an Arabic mathematician and astronomer who originated from Iraq and was active in Cairo in the first half of the eleventh century. A Latin translation of his work, known as the *Perspectiva*, was published in 1572 by Freidrich Risner in Basle, and was widely used by the natural philosophers of the period. The ninth Earl of Northumberland, who owned one of the most important contemporary collections of Bruno's texts – see Gatti (1989/2013a), 35–48 – attributed his change from a frivolous courtier to a dedicated natural philosopher to a reading of this work of optics. In bk. III, chap. 7, Alhazen considers "The Ways in which Sight Errs in Inference," and writes that "by looking at a fixed star and a planet at the same time sight will not perceive the difference between their distances, but rather perceive them both in the same plane despite the great difference between their distances." See the English translation by A.I. Sabra, *The Optics of Ibn Al-Haytham* (London: Warburg Institute, 1989), vol. I, 279.
- 16 The Valona Bruno is referring to is in Albania.
- 17 *Optics of Ibn Al-Haytham*, 10: "The distance from which sight can perceive visible objects and the distances at which they become invisible vary with the lights existing in those objects."
- 18 This opinion of Heraclitus is to be found in Diogenes Laertius, *Lives of the Philosophers*, IX, 7.
- 19 Bruno (or the printer) has confused the title of Epicurus's letter. It was addressed to Pythocles and can be found in Diogenes Laertius, *Lives of the Philosophers*, X, 91.
- 20 "That is what Lucretius the Epicurean says in the fifth book of *De natura*."
- 21 See Lucretius, *De rerum natura*, ed. and trans. Cyril Bailey (Oxford: Oxford University Press, 1910), V, 564–9, 575–8, 585, 587, 590–1, 586, 588–9. The phrase in brackets (l. 578) is not quoted by Bruno, although it seems necessary to an understanding of the passage.
- 22 The term "horizon" was traditionally given to a horizontal plane perpendicular to a vertical line joining the heavenly sphere to the centre of the earth. It was considered an "artificial" or "astronomical" horizon if the plane were imagined as passing through the centre of the earth, while the "sensible horizon" was the name given to the plane tangential to the surface of the earth at a point on which there is an observer. Bruno, however, seems to be using the term "artificial horizon" here to define a perfectly horizontal plane on the earth's surface passing through a point where there is an observer.
- 23 Theophilus, commenting on fig. 1, is pointing out that the answer to his question given by Smithus requires correction because the horizon A-A will, in fact, gradually decrease according to the distances 1-1, 2-2, 3-3, and 4-4 (not present in the diagram). On the other hand, the increasing distance of

the observer from an apparently diminishing earth will increase the amount of the earth's surface visible (if somewhat confusedly) to the observer from A-A to B-B and then to C-C: the even larger radius D-D added in the text is not present in the diagram. Bruno adds that with the increasing distance from its surface, the observer will see the earth always more diffused with the reflected light of a now central sun. The point Bruno is trying to make here is that an observer in space will see the earth in much the same way as we see the moon, with dark and light patches corresponding to mountains and seas. This contradicted the traditional view of the moon as emitting its own light, and as perfectly spherical and smooth.

- 24 In 1610, Galileo in the *Sidereus nuncius* will also imagine how the earth might be seen from space: "If the terrestrial globe were seen from afar, illuminated by the sun's rays, the solid earthy parts would appear lighter and the seas darker." Bruno's opposite claim of dark earthy parts and light seas was nevertheless supported by a number of classical and early modern sources.
- 25 In his *Optics*, 12, Ibn Al-Haytham (Alhazen) defines as "moderate distances" all those distances from which sight perceives a visible object in such a way that between it and the real nature of the object there exists no appreciable discrepancy, while "immoderate distances" cause the loss to sight of those "subtle features of the object" that are visible from moderate distances.
- 26 This was precisely the position taken up by Ibn Al-Haytham (Alhazen), who "taught the medieval West the distinction between sense, knowledge, and inference, all of which come into play in perception." See the *Optics*, vol. II, xiv.
- 27 Note that the printer has inserted this figure vertically, whereas Bruno was clearly looking at it horizontally. Smithus's statement regarding the relative sizes of the sun and the earth, deduced from the cone of earth's shadow cast by the sun, is correct; but editors have been puzzled about his reference to Mercury. In the Copernican system, the cone of shadow of a moving earth is thrown beyond the orbits of the inferior planets, Mercury and Venus, both of which orbit between a stationary sun and a revolving earth.
- 28 It should be remembered that the kind of light which characterizes the stars, including the differences between stars and planets, had not been established with certainty in this period.
- 29 The smaller luminous body situated at the various positions of b in fig. 3 is reduced to a simple point in the diagram. Assuming a physical concept of light as travelling in a straight line, the argument here is false. There is no way in which the light can arrive beyond the diameter of the larger opaque body. Some commentators, starting with Romano Amerio in his *Opere di Giordano Bruno e Tommaso Campanella* (Milan and Naples: Riccardi, 1956), justify this mistake by claiming that it should be referred to a metaphysical argument involving Bruno's concept of infinity. Bruno admitted the existence of two

kinds of light. There was the light emanating from specific physical bodies in the universe, which travels in a straight line. But there was also a purer form of light with no specific source within the infinite universe itself, which illuminates everything in an instant. Here he seems to be passing from one type of light to another, without making the distinction clear. The two forms of light will remain as an aspect of Bruno's later atomistic theory of matter: see "Giordano Bruno and the New Atomism" in Gatti (2011), 70–90.

- 30 Bruno's most fully developed arguments against the Aristotelian claim that a continuum can be divided to infinity (see *The Physics*, Z, I, 231b,4) are to be found in the later *De triplici minimo*, bk. I, caps. VI and VII. See "Il dilemma matematico di Bruno tra atomismo e infinitismo" in Aquilecchia (1993a), 319–26.
- 31 The argument has now passed from fig. 3 to fig. 4. As Bruno's nineteenth-century commentator Felice Tocco pointed out in *Le opere latine di G. Bruno esposte e confrontate con le italiane* (Florence: Sansoni, 1889), 272, this part of Bruno's argument is correct only if the luminous bodies are larger than the opaque one lying between them.
- 32 Bruno seems got have got things wrong here by making the opaque body larger than the luminous ones. However, what he is attempting to prove with this diagram is that there may be, at fairly close astronomical distances as well as at very distant ones, unseen bodies moving in the universe: a thesis not allowed by the Aristotelian-Ptolemaic system, which identified the real with what the eye could see. Galileo's telescope would prove Bruno to be right on this larger issue. In 1610 Kepler, after reading Galileo's *Sidereus nuncius* on the recently discovered moons of Jupiter, chided the Florentine with failing to recognize the speculative anticipations of his discovery by previous thinkers, including Giordano Bruno: see Gatti (1989/2013a), 56–7.
- 33 The reference is to Nicolaus of Cusa, *De docta ignorantia*, II,12. Cusanus's remarks on the dark as well as the luminous aspects of the sun – together with Bruno's observations at this point of his text – are traditionally considered as important anticipations of Galileo's later telescopic discovery of sunspots.
- 34 Aquilecchia (see Bruno (2002a), 507n44) is puzzled by the final part of this affirmation. But what Bruno means is only that the shadowy parts of the moon would disappear with distance, giving the impression that it is entirely made up of a bright, luminous substance.
- 35 Bruno is leaving Copernicus behind here, in order to propose his own idea of an infinite universe inhabited by an infinite number of solar systems. The idea of an infinite space destroyed the Aristotelian concept of natural places in the universe, with the earth as its natural centre. It rendered any place within the infinite whole relative to any other place, arbitrarily taken as a

point of reference. This concept was not accepted by Copernicus himself, even if it had already been suggested by Cusanus, just cited by Smithus as a major inspiration behind the Nolan's reasoning about the infinite. Bruno's proposal of an infinite universe would give rise to an intense cosmological discussion up to and including Newton himself. See on this subject Gatti (2013b).

- 36 Uniform circular movement of the heavenly bodies was already a guiding principle in Plato, before Aristotle. It was a fundamental axiom of Ptolemy's astronomy, and was still accepted by Copernicus.
- 37 The absolute infinity of Bruno's universe, which derives all the characteristics of its being from a principle of total infinity – that is, both an “extensive” infinity of space and an “intensive” infinity of the infinite bodies contained in it – is often expressed with the term “infinite infinite.” The term was picked up later by Thomas Harriot in a much commented page of his manuscript *De infinitiis*: see Gatti (1989/2013a), 61. The argument which Bruno is using here, which says that an infinite cause can only create an infinite effect, is known as the argument of plenitude: this aspect of Bruno's thought is powerfully underlined in Lovejoy (1936).
- 38 Nundinius raises here one of the most controversial issues of the post-Copernican period. Aristotle had divided the universe into two quite distinct regions, the sub-lunar region (that is, the part of the sky, including earth, which lay under the orb of the moon in the traditional cosmology), where matter is composed of the four elements and subject to generation and corruption, and the celestial regions above the lunar orb, which he thought of as composed of a quite different substance, considered as eternal and incorruptible. This substance which composed the higher heavens had come to be called a quintessence, and was held in Christian theology to constitute a sublime region inhabited by angelic spirits that constituted a necessary middle region between elemental matter and the pure transcendence of God. The tenacity with which the culture of this period clung on to this cosmological picture was such that Galileo, in 1632, dedicated the whole first dialogue of his book on *The Two Major World Systems* to the problem raised here by Bruno. Galileo complained that the theologians refused to change their minds even after his telescopic observations of such phenomena as sunspots or the Milky Way had demonstrated that the regions beyond the moon were also subject to change.
- 39 Frulla's uses the word *propositio* here, a word that does not exist in Italian. What Frulla means is a *propositio*, which is a technical Latin term in logic for the first premise of a syllogism. The logic Frulla is referring to is Aristotle's, who in the *Topics*, bk. V, considers how to develop correct arguments concerning the properties of things.

- 40 Bruno is defining here some of the most important characteristics of his infinite universe, composed of an infinity of solar systems, in which each star becomes a central sun. Although he thought of the suns as the most powerful and life-giving bodies of each system, as well as those which emitted their intrinsic light, Bruno is stressing that the suns are nevertheless made up of the same primary substance which makes up the infinite whole. In chaps. 13–15 of bk. VI of the *De immenso*, Bruno will clarify this point, claiming that both the sun and the earth contain heat and moisture, although the sun is mainly fire while the earth and the other opaque bodies are mainly formed of the moist element. By “extrinsic light,” Bruno means a form of light that has no specific source within the infinite universe, and, instead of travelling in a straight line, illuminates things in an instantaneous flash. See note 29 above.
- 41 Aristotle actually appears ambiguous on this point, and at times is even more negative than Bruno about the identity between light and heat. See *Meteorology*, bk. I, 3, 341a, 35–6: “the sun, which most of all the stars is considered to be hot, is really white and not fiery.” Bruno, however, considered the sun to be hot as well as luminous.
- 42 The title of Lucian’s *True Histories* (written in the second century AD) is ironic. The book is an account of an imaginary voyage beyond the Pillars of Hercules to the countries of the moon and the stars. Lucian himself at the beginning claims mockingly that it is all lies and intended as parody of the fables of the poets. For a history of the popularity of this text up to the seventeenth century, see Margaret H. Nicholson, *Voyages to the Moon* (New York: Macmillan, 1948), and David Marsh, *Lucian and the Latins: Humor and Humanism in the Early Renaissance* (Ann Arbor: University of Michigan Press, 1998).
- 43 Copernicus never openly repudiated the doctrine of Aristotle (see the *Metaphysics*, bk. XII, chap. 8), according to which the celestial bodies moved as if transfixed to their solid orbs, and so under the influence of an eternal, external mover. The process of reasoning which led from early readings of Copernicus to the final repudiation of the idea of solid celestial orbs has been at the centre of much critical attention. See, in particular, E. Grant, *Planets, Stars, and Orbs: The Medieval Cosmos, 1200–1687* (Cambridge: Cambridge University Press, 1994), and Lerner (2008).
- 44 William Gilbert, who was starting his experiments on magnetism in London during the years of Bruno’s visit, also thought that the attraction between bodies lay in something intrinsic to the bodies themselves, and not in forces acting on them. In his *De magnete* (1600), bk. IV, chap. 3, he writes: “it is in bodies themselves that acting force resides, not in spaces or intervals.” Gilbert was clearly influenced by Bruno’s post-Copernican heliocentricity and the refutation of the solid orbs, although he was more cautious about the infinity of the universe, which he thought was unknown and unknowable. In the *De*

*magnete*, as well as in the posthumously published *De mundo* (1653), where Bruno is explicitly mentioned, Gilbert used magnetism as an explanation of the movements of the planets around the sun, whereas Bruno is only referring to magnetism here as an analogy, and never fully endorsed it as a direct cause of the movements of the planets. For the possibility that the opponents of Bruno's philosophy in this text (Nundinius, Torquatus, and Prudentius) were members of the Gilbert circle – some of whom, unlike Gilbert himself, remained violently anti-Copernican – see chapter 5 in Gatti (1999).

- 45 The question raised by Nundinius needs to be read in the context of the Renaissance debate on the soul deriving from Aristotle's *De anima* and passing through thirteenth- and fourteenth-century commentaries by philosophers such as Albertus Magnus, Thomas Aquinas, and Duns Scotus. According to the Aristotelian tradition, soul was composed of three different kinds: the vegetative soul (whose functions were common to all living things, such as nutrition, growth, etc.); the sensitive soul (which added functions such as powers of movement, emotion, etc.); and finally the intellectual soul (which added the rational powers of intellect, memory, etc.). Plants had a vegetative soul only; animals a vegetative and a sensitive soul; but only human beings also had an intellectual soul. Bruno, who thought in the very different terms of a world soul derived from the Neoplatonic tradition, reduced the kinds of soul to one, which was together sensitive, vegetative, and intellectual and which permeated the entire universe. Such an idea of the soul was considered heretical by Christian theologians, both Catholic and Protestant, which is why Nundinius becomes so serious at this point. For the terms of the intense Renaissance debate on the soul see Katherine Park, "The Organic Soul," and Eckhard Kessler, "The Intellectual Soul," in *The Cambridge History of Renaissance Philosophy* (Cambridge: Cambridge University Press, 1988), 464–534.
- 46 Bruno means by this all the other planets, which, like earth, he considers imbued with soul or *anima*. This justifies referring to them as "animals."
- 47 This is one of the earliest hints of Bruno's atomistic doctrine. See "Bruno and the New Atomism" in Gatti (2011), 70–90. An essential part of Bruno's animistic atomism was the idea that nothing ever really dies, but only changes its accidental atomistic composition for another.
- 48 "Any ass knows how to dispute with why and wherefore."
- 49 Bruno is using an argument already developed by Copernicus, and supporting it with a sly reference to Aristotle's *Metereology*, 340b25–341a2, which he is paraphrasing rather than quoting exactly.
- 50 See Plato's *Phaedo*, 109, B–E.
- 51 Amphitrite is a mythical name for the ocean.
- 52 Bruno is saying here that depressions in the earth's surface are often immensely deep. Even so, hills, or even mountains – given the earth's curvature

– do not impede vision of the horizon with, beyond it, the clouds and the purer air above them. If we transfer the two-dimensional figure on to a spherical plane, as Bruno’s argument requires us to do, it is clear that M-C would not differ from M-D, or even M-K. Ultimately – Bruno’s argument goes – we live inside the cavities of a huge globe from whose oceans rise continents of vast dimensions. Even Britain can be considered as a mountainous region, climbing which one finds the sky becoming ever purer until the ashes of a sacrificial fire would remain undisturbed for a long time. The sense of this passage is to underline yet again that all the aspects of a very uneven and unsmooth, albeit circular, earth, including its purer air and atmosphere, move together in orbit around the sun, thus denying the anti-Copernican suggestions that a moving earth would leave its clouds behind.

- 53 The legend was well enough known in the Renaissance for Bruno not to have to repeat it. It claimed that signs traced in the sacrificial ashes on very high mountains had been found intact and unmoved a year afterwards. The specific reference indicated by Bruno is in Alexander of Aphrodisias, *In Aristotelis meteorologica*; but the idea can be found in many other authors from Plutarch to Filopono.
- 54 “It is clear, then, that the earth must be at the centre and immovable ... because heavy bodies forcibly thrown quite straight upward return to the point from which they started, even if they are thrown to an unlimited distance. From these considerations then it is clear that the earth does not move and does not lie elsewhere than at the centre”: see Aristotle, *On the Heavens*, bk. II, 296b, 21–5.
- 55 Bruno’s illustration to this important pro-Copernican argument (fig. 6) has caused much discussion because none of the letters referred to by Bruno are present in the picture, which seems to illustrate a windy sea-scene rather than the calm river-scene referred to in the text. This has given rise to elaborate Hermetic interpretations of the illustration, which do not seem to correspond to Bruno’s own words on this subject. See my remarks in the relevant section of my Introduction to this volume.
- 56 Bruno is surely being deliberately oblique as well as gently self-ironic here. The argument he is outlining as his final epistemological defence of the Copernican cosmology refutes the Aristotelian claim that an object thrown to a height on a moving earth would not fall vertically to the ground but would fall behind, because of the forward movement of the earth. To clarify this argument, Bruno makes an analogy of the moving earth with a moving ship. It should be noted, however, that the ship analogy had already been suggested as a pro-Copernican argument in 1576 by Thomas Digges, and would later be further developed by Galileo. On this subject, see Massa (1973). In Bruno’s text, Smithus’s strange remarks here seem to be suggesting that they might

have been familiar with Digges's use of the ship analogy, and have stolen it from him.

57 "So be it."

### Dialogo Quarto / Dialogue IV

- 1 The subject discussed by Smithus and Theophilus in the opening pages of this dialogue is still the Copernican theory, now considered in its religious rather than its philosophical or epistemological implications. The brilliantly synthetic opening speeches raise a problem that will become ever more acute up to and beyond the trial and condemnation of Galileo in the following century: that is, how to deal with the problem that the Bible often seems to favour the traditional earth-centred cosmology proposed by Aristotle and Ptolemy. The Catholic Church would respond by placing Copernicus's *De revolutionibus* on the *Index of Prohibited Books* in 1616.
- 2 Bruno is making a distinction here between the spiritual and moral character of the biblical books, which speak with the common language of their times, and an inquiry into the natural world that attempts to define the physical structure of the universe. This distinction remained one of his major contributions to the discussion involving the new science. It was repeated by him at his trial when he was accused of supporting the Copernican cosmology against biblical authority. In the fifth of his *Responsiones ad censuras*, of which some fragments remain, he denied the accusation of contradicting either the writers of the biblical books or the early Church Fathers, claiming that "they were saintly, good and exemplary people," but they were not practical philosophers and showed little interest in natural things: see Firpo (1993), 83. This distinction would be taken up by Galileo in the following century, especially in his *Lettera a Madama Cristina Lorena*: see, on this subject, Finocchiaro (1989).
- 3 The Muslim theologian Al-Ghazali (1058–1111) is referred to again in a similar context in *On the Heroic Frenzies*, part II, dial. 2. Al-Ghazali and Averroes, according to Bruno, taught that the common forms of wisdom are like poisons which most people learn to feed on through the gradual indoctrination they are subjected to from childhood.
- 4 See Ecclesiastes 1:5–6.
- 5 See Genesis 1:16: "And God made two great lights; the greater light to rule the day, and the lesser light to rule the night: he made the stars also."
- 6 Bruno is referring in this passage to the failure of Moses in his account of the creation of the world to mention the creation of the angels, a point that had been much discussed in ecclesiastical writings. Bruno solves this problem by identifying the angels with the heavenly bodies themselves. This identification of the angels with the stars would later be brought up against him at his trial.



- 7 Job 25:2.
- 8 Bernardino Telesio of Cosenza, in the early books of his *De rerum natura* published in Naples in 1576, had put forward the thesis that the two active first principles were cold and heat: on Bruno and Telesius see Aquilecchia (1993a), 293–310. It is not said in the Book of Job that some heavenly bodies were made of fire and others of water. It has been suggested by Tocco (1889, 311n1) that Bruno was following the erroneous etymologies of the words *Shamaim*, the sky (given in the Talmud, *Haghiga* 12a, where it is derived from *Esh* or fire), and *Maim* or water.
- 9 Genesis 1:7: “And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament; and it was so.” The traditional interpretation of this much-discussed verse associated the “firmament” with the outer reaches of a closed universe whose heavenly waters above seeped through to become the elemental waters of the sublunar sphere. However, a number of medieval and sixteenth-century commentators had already interpreted “firmament” as the universal space containing a liquid “aer” in which the stars and planets moved. Bruno’s suggestion that the waters below the firmament were those in the earth and those above were those in other worlds tends to equate the biblical cosmology with Bruno’s own infinite universe, where the words “above” and “below” assume a purely relative, and no longer absolute, value. On this subject, see “Bruno’s Use of the Bible in His Italian Philosophical Dialogues,” in Gatti (2011), 264–79.
- 10 This passage seems to make a covert reference to Calvin’s metaphorical reading of the Bible theorized in his *Institutes*, I, 5:13–14 and I, 6:1. For the importance in the sixteenth century of Calvin’s reading of the Bible not as a book representing natural truth but rather as stories for the teaching of morals to the masses, see the chapter on Calvin and the new science in Alistair McGrath, *A Life of John Calvin* (Oxford: Oxford University Press, 1990). On Bruno’s complex ideas about metaphor, also in his other works, see “Bruno and Metaphor,” in Gatti (2011), chap. 15.
- 11 Bruno appears here to be criticizing the secular Aristotelians such as Pietro Pomponazzi, whose *Tractatus de immortalitate animae* (1516) claims that the Aristotelian doctrine of the soul belongs to physics and fails to prove the soul’s immortality. Pomponazzi claims that as a Christian he is prepared to believe in the immortality of the soul, but he denies the possibility of providing a rational basis for this belief: a doctrine which isolated a sphere of natural philosophy deduced from rational principles, which was no longer obliged to relate its conclusions to Aristotelian principles as interpreted by the Catholic Church. Pomponazzi’s thought would be influential in the University of Padua, which became one of the leading schools of scientific research in

the sixteenth century; see on this subject Charles H. Lohr, “Metaphysics,” in *The Cambridge History of Renaissance Philosophy*, ed. C.B. Schmitt et al. (Cambridge: Cambridge University Press, 1991), 602–7, and Martin L. Pine, *Pietro Pomponazzi: Radical Philosopher of the Renaissance* (Padua: Antenore, 1986). Bruno himself refused Pomponazzi’s distinction between primary and secondary causes, remaining in this faithful to Aristotelianism and Thomist theology. However, he defined his one principle and cause in non-Christian and non-transcendental terms. This much-discussed aspect of his thought has been linked to his use of the Arabic commentators of Aristotle: see J. Politella, “Bruno and His Muslim Predecessors,” *Serif* 4 (1967): 14–25; L. Spruit, “Motivi peripatetici nella gnoseologia bruniana dei dialoghi italiani,” *Verifiche* 18 (1989): 367–99; and R. Sturlese, “‘Averroë quantumque arabo et ignorante di lingua greca ...’: note sull’avverroismo di Giordano Bruno,” *Giornale critico della filosofia italiana* 71 (1992).

12 “The father of the gods.”

13 Ovid, *Metamorphoses*, I:177–81.

14 “A golden chain, a golden necklace.”

15 “Are you then the archetype of all philosophers?”

16 “Where are you going, Sir, where are you going? What if I am the archetype of all philosophers? What if I should yield neither to Aristotle, nor to anyone, one jot more than they would have yielded to me? Does that make this earth into the immovable centre of the universe?”

17 “How does it happen that the star Mars should appear to be now larger, now smaller, if the earth moves?”

18 “Among the things of nature.”

19 The apparent brightness and size of Mars was one of the empirical difficulties that accompanied the Copernican theory throughout the sixteenth century. Maurice A. Finocchiaro, in his pages on the traditional astronomical objections to the Copernican hypothesis, explains the Mars problem as follows: “In the Copernican system this planet is the next outer one after the earth, and, since they also revolve at different rates, they are relatively close to each other when their orbital revolutions align both on the same side of the sun and relatively far when they are on opposite sides of the sun. Because the variation in distance is considerable, this would cause a corresponding variation in apparent size and an ever greater change in brightness, since the intensity of light varies as the square of the distance. Now, the difficulty was that although Mars did indeed exhibit a noticeable change in brightness with periodic regularity, this change was not nearly as much as it should be; further, there was practically no variation in apparent size”: see Finocchiaro (1989), 19. The considerable variations in the size of Mars seen from a moving earth would only be observed in the following century by Galileo’s telescopic sightings.

- 20 This passage is important in defining the exact nature of Bruno's inquiry, which is of a cosmological rather than a mathematical-astronomical nature. That is to say, he is concerned with the general shape and framework of the universe, and with the causes of the movements of the heavenly bodies, rather than with establishing precise astronomical measurements. In that field, he is content to accept the readings supplied by the professional astronomers.
- 21 "Of the golden order." The order of the *Toison d'or*, or the Golden Fleece sought by Jason and the Argonauts, had been founded by Philip III, Duke of Burgundy (sometimes known as Philip the Good) in 1429.
- 22 "That is."
- 23 This concept of the infinite universe raises the question of the transcendence of the divine cause. Is Bruno's infinite divinity transcendent with respect to the infinite universe of which He is the cause, or is God's infinity immanent: that is, a principle of divine unity to be thought of as residing throughout the infinite universe itself? On this problem, which raises intricate questions of a theological nature, see Miguel A. Granada, "Il rifiuto della distinzione fra *potenzia assoluta* e *potential ordinata* di Dio e l'affermazione dell'universo infinito in Giordano Bruno," *Storia della filosofia* 3 (1994): 495–532, and Catana (2005).
- 24 "To the point, to the point, to the point."
- 25 "These are the points in question."
- 26 "To the point."
- 27 "To the point."
- 28 Erasmus's *Adages* contain a comment on this classical theme, which means "to give signs of folly." Anticyram was the name of an island famous for the growth of the herb hellebore, a purge that was thought to cure madness. The accusation of madness was frequently used to attack followers of the Copernican theory, and would be explicitly repeated by George Abbot in his later account of Bruno's Copernican lectures at Oxford in his *The Reasons which Doctour Hill Hath Brought, for the Upholding of Papistry* (1604), 88–9.
- 29 Bruno seems to be playing here on the word "collana" or "catena," which both stand in Italian for Torquatus's chain. He may have been thinking of the use of the word "catena" to signify a collection of passages from the Church Fathers commenting on the Scriptures: publications much used by preachers in the preparation of their sermons.
- 30 "On the immortal soul," and "On the fivefold sphere." This page of Bruno's is important in providing the fullest account he gave personally of his visit to Oxford in the summer of 1583, but it also presents the puzzle of what exactly he means by a "fivefold" sphere. See the section entitled "The Occasion" of my Introduction to this volume, and for the relevant bibliography concerning this episode, see Dialogue I, note 2.

- 31 In his later work in Latin, *De immenso ed innumerabilibus* (1591), Bruno fleshed out this brief history of his astronomical beliefs, giving details of some of his more youthful astronomical speculations. Two of these would be picked up and described by William Gilbert in his posthumous *De mundo* (1634), where they are illustrated with diagrams lacking in Bruno's text. For Gilbert's interest in Bruno's cosmology, see the relevant sections in Gatti (1999). On this biographical account of the development of his Copernicanism, see the entry *Copernicus* in *Enciclopedia bruniana e campanelliana*, ed. Eugenio Canone and Germana Ernst (Pisa-Rome: Fabrizio Serra, 2010), vol. II, 47–51.
- 32 "Where is the apogee of the sun to be found?"
- 33 "How many sacraments are there according to the Church? The apogee is close to the twentieth degree of Cancer, and its opposite close to the tenth or hundredth of Capricorn." Bruno's irony here is directed against the fact that Torquatus's question presupposes that very Ptolemaic cosmology which he (Bruno) is claiming to be false. The apogee of the sun is the point at which it lies furthest from the earth while travelling along its ecliptic, which is the path of the sun around a central earth. The question formulated in this way becomes senseless in terms of the Copernican system, which puts the earth in motion around a central sun, thus depriving the sun of its apogee. Bruno brings in the apparently unrelated subject of the number of the sacraments in order to underline that in this case too the answer to the question depends on the relative position of the questioner: in Rome, according to the Catholic Church, the sacraments are seven, whereas the Protestants had reduced them to two. Bruno is thus emphasizing that his position presupposes a radical change of viewpoint. Torquatus is unable to make such a change – blinkered as he is by religious prejudice – and this leaves him (and the apogee of the sun) suspended "above the bell-tower of St Paul's Cathedral."
- 34 "How, why, where."
- 35 "The eighth moving sphere."
- 36 "Look, be silent and learn. I am going to teach you Ptolemy and Copernicus."
- 37 "The swine sometimes teach Minerva": the sentence has Greek and Roman classical origins and had been commented on by Erasmus in his *Adages*.
- 38 "The immobile sphere of the fixed stars."
- 39 In Bruno's reproduction of Torquatus's diagram, the centre of the epicycle appears to be placed on the fourth circle, not the third.
- 40 "Be quiet, be quiet," said Torquatus, "are you trying to teach me Copernicus?"
- 41 Bruno is perfectly correct here in claiming that the illustration in Copernicus's *De revolutionibus*, which was not drawn by Copernicus himself, gives a false (or at least a simplified) representation of his astronomical system. To understand fully Copernicus's account of the movements of the earth, it is necessary to read his text (in particular bk. III of *De*

*revolutionibus*), which Bruno is claiming Torquatus has not done. There it becomes clear that one of the differing possible hypotheses is that, if the sun lies exactly at the centre, the earth revolves not only around the sun but also around the circumference of an epicycle centred along its orbit, as in Bruno's diagram. Torquatus, instead, is claiming wrongly that the earth lies at the centre of the epicycle, with the moon on its circumference. Bruno's correction of Torquatus, however, is marred by the fact that in this case the moon, in order to maintain its differing phases observable from the earth, needs to be placed on a further epicycle, which Bruno fails to do. See, on this subject, Gatti (1999), 63–8.

- 42 The “knights” referred to here were possibly Sir Philip Sidney and Sir Fulke Greville. Sidney, certainly, was much preoccupied by the cultural dearth in speculative philosophy produced in England by the fusion between a Protestant theology based on a reading of the Bible and a humanistic rhetoric based on a study of grammar. He opens his *Apologie for Poetry* by recalling the most advanced Renaissance developments in a Neoplatonic aesthetics, only to return to Aristotelian mimesis because he fears that his English audience will be unable to follow him in such subtle speculations.
- 43 “Then was it night, and creatures all that weary were on ground, / Did take their slomber sweete, both woods and seas had left their sound, / And waves of waters wylde, when stars at midnight soft do slyde, / Whan wust is every field, and beastes and birdes of painted pride ...”: Virgil *Aeneid*, IV, 522–5. Translation by Thomas Phaer, *The XIII Bookes of Aeneidos* (1584), sig. Gi,v.
- 44 “Me too. Farewell.”

### Dialogo Quinto / Dialogue V

- 1 Bruno is outlining here, and then repudiating, the doctrine of the solid orbs, according to which the universe was thought of as made up of eight contiguous revolving “heavens,” or “orbs,” or “spheres”: seven of which defined the space of the orbits of the seven known planets, while the eighth sphere contained all the stars fixed on to it at given and unvarying distances. These last were known as the “fixed stars.” This structure of solid revolving spheres was left undisturbed by Copernicus, although his very much larger universe, defined by Copernicus himself as “immense,” actually contained the premise which would lead to the intense discussion of the solid spheres during the second half of the sixteenth century, and finally – after the criticisms of Tycho Brahe, Kepler, and others, as well as Bruno – to their rapid demise. For more on this subject, see Grant (1994) and Lerner (2008).

- 2 These concepts could have been found by Bruno in the section “On the Ways in Which Sight Errs in Inference” in the *Optics* of Alhazen. See Dialogue III, note 14.
- 3 “You’ve hit the nail on the head.”
- 4 On Bruno’s concept of the infinite, to which he will dedicate entirely the third of his philosophical dialogues written and published in London, see Del Prete (1999) and the Introduction to this volume.
- 5 The Aristotelian doctrine of the fifth essence – a quintessence, or an especially subtle, pure, and unchangeable substance which was thought to fill the sky above the sphere of the moon – was severely condemned by Bruno in favour of the idea of a homogeneous universe, composed of one basic substance throughout the infinite whole. In later works, this conviction led to a revival on his part of neo-Epicurean atomistic doctrines, as well as of the pre-Socratic cosmologies, such as those of Heraclitus, Democritus, Pythagoras, Parmenides, and Melissus, mentioned at the beginning of this paragraph. On Bruno’s new cosmology seen as a “pre-Socratic Renaissance,” see Celenza (2000).
- 6 This animistic account of magnetism was a commonplace in the sixteenth century. It had already been formulated by the Neoplatonic Florentine movement, and can be found in the *De vita coelitus comparanda* of Ficino, where magnetism is extended above the lunar sphere to justify the attraction of the earth’s poles by the pole star. Repeated by Scaliger, Campanella, and many others, it remained as an aspect of William Gilbert’s more scientific account of magnetism (see *De magnete*, 1600, bk. II, chap. 3), which, however, was of great importance in claiming a universal magnetic force as the cause of the movements of stars and planets. Galileo in his later *Dialogue of the Two Major World Systems* will acknowledge the importance of Gilbert’s thought on this subject. Bruno, however, remains anchored to the more traditional idea of an internal, biological necessity rather than a magnetic power or force, as the moving power behind the orbits of stars and planets.
- 7 The difference between heavenly bodies as signs and as causes of the things that happen on earth was part of judicial astrology and had been elaborated by both the Aristotelian and the Neoplatonic traditions. Aquilecchia, in Bruno (2002a), 376n10, cites Aristotle’s *De divinatione in somniis*, I, 462b–463a, and Plotinus, *Enneads*, II, 3[52] as Bruno’s sources for this distinction. Some of Bruno’s largely mistaken arguments claiming that the moon does not influence the tides will later be repeated by Galileo in bk. IV of his *Dialogue of the Two Major World Systems*.
- 8 Smithus’s speech, immediately endorsed by Theophilus-Bruno, raises the whole complex and much-discussed question of Bruno’s problematical

ideas about the relationship of mathematics to physics. The passage shows an evident lack of understanding of the relationship between geometrical “lines and angles” and the rectilinear character of the heat and light waves emitted by the sun. However, it would be a mistake to assume from this passage a total refusal on Bruno’s part to consider mathematics as a part of his science: rather it relates to his persistent refusal to admit any idea of fields of force active within the universe, as distinct from the internal impetus acting within bodies themselves. Fields of magnetic or thermodynamic or gravitational force appeared to Bruno just as negative, as forms of explanation, as the more scholastic idea of pure intelligences or divinely inspired instincts, which Theophilus will attack in his following speech. Natural instincts or internal forces such as heat active within bodies, however, are considered by Bruno as mathematically measurable, and variable according to the distance between the bodies acting on one another, as well as the duration of their reciprocal influence. For an entire volume dedicated to Bruno’s ideas on the correct use of geometry, see Pompeo Faracovi (2013).

9 “For example.”

- 10 Bruno appears in this passage to arrive at a principle of inertia, which will later be refined by Galileo. However, having done that, Bruno then goes on to consider the cause of motion as a natural principle of internal force or necessity, thus challenging both the Aristotelian concept of extrinsic or violent motion and the theological concept of divinely inspired instinct or instigation.

11 “These are difficult questions.”

12 “That is not my impression.”

- 13 The weight of the earth was considered one of the most telling arguments put forward by the ancients against the possibility of its movements: see *De revolutionibus* I. 7, where Copernicus criticizes their arguments as “ridiculous.” Bruno is opposing the idea of natural places of bodies, and their absolute qualities, which was implied by the geocentric Aristotelian system, and is developing an idea of the relativity of the position of every body in the infinite whole, and also of the relative nature of all qualities of bodies, such as weight, which can only be defined with respect to the situation or “event” being examined.

- 14 The Aristotelian doctrine of natural place and elemental motion had claimed that the four sublunary elements – fire, air, water, and earth – had natural, fixed places within a finite universe. These places were the four concentric elemental spheres lying beneath the moon. The natural state of each part or particle of the four elements in their respective spheres was rest: if detached from their proper spheres, they sought to return to them in a straight line. Bruno replaced this doctrine of motion with one that

said that there are no elemental spheres. Parts of a whole are light or heavy only in so far as they seek to return, in a straight line, to their proper places within an infinite, homogeneous universe. The proper places of whole bodies (or “principal bodies,” or “great animals”), by which Bruno means the celestial bodies, or worlds (including earth), are those assigned to them by their natural constitutions, and all move naturally with a circular motion. This whole passage contains the beginnings of a doctrine of universal gravity. For more on this subject, see Knox (2001).

- 15 Aquilecchia remarks here, in Bruno (2002a, 553n25), that Bruno seems to consider the tails, beards, etc. of comets as flaming attachments, even though Cardan in *De subtilitate* (1550) had already put forward the correct idea that they were rather an illumination of associated vapours in the light of the sun. Bruno himself would come to accept this explanation in the later *De immenso* I, 5.
- 16 Although Bruno is often considered by both early and more modern commentators to have been the first to postulate a revolution of a central sun around its own axis, the idea is already suggested in Plato’s *Timaeus* (39b), a major source for these pages of Bruno’s dialogue. Confirmation would be supplied by Galileo’s observations of sunspots. Bruno himself would elaborate on the idea in more detail in the *De immenso* (bk. IV, chap. 8), where he denies the position expressed here, which accepts the possibility of a revolution of the sun around its own axis, but repudiates a possible orbit of the sun around another centre. In *De immenso*, he argues in favour of such an orbit. See, on this subject, Miguel A. Granada, “Considerazioni sulla disposizione ed il movimento del sole e delle stelle in Giordano Bruno,” *Physis* 38 (2001): 257–82.
- 17 The Aristotelian causes are defined in bk. II of the *Physics* (194b): see Aristotle (1984), vol. II, 332. The final cause is defined as “the end for which, or that for the sake of which, a thing is done.”
- 18 Bruno is developing here his doctrine of universal “vicissitude,” or change, as the principal characteristic of the physics of his infinite universe. Such a process of eternal change, however, presupposes a metaphysics that posits an infinite and eternal substance from which the individuals subject to time and change emerge. For Bruno’s doctrine of individuation, see Catana (2005).
- 19 See the *Timaeus*, 41 a–b. Bruno is accepting here the Platonic concept that the principal bodies, or stars and planets, could dissolve but do not do so in fact. Later in the *De immenso* he will revise this view to contemplate also the possible birth and dissolution of the principal bodies in space.
- 20 Passages such as these in the Italian dialogues already imply an atomistic conception of matter, with the atoms as the ultimate particles making up a



“supersubstantial substance” not subject to dissolution. Bruno will elaborate a fully atomistic concept of matter in these terms only in his later Latin work *De triplici minimo*. See Gatti (2011), 70–90.

- 21 By “the principal one,” Bruno means here the circular motions of stars and planets throughout universal space: the interplay of a hot sun and a cold moon acting for Bruno as a universal thermodynamic explanation of the natural circular motion of the principal celestial bodies around each other in their constant search for a renewal of life. The idea derives from the sixteenth-century anti-Aristotelian philosopher Bernardino Telesio of Cosenza, whose work Bruno much admired. For Bruno’s use of Telesio from the beginning of the *Supper*, see Dialogue I, note 15.
- 22 What follows is taken from Aristotle’s *Meteorology*, I, 14, 351a19–352a16. On Bruno’s strategic use of Aristotle as an unwitting “prophet” of Copernicanism, see Granada (1990).
- 23 Canopus was an ancient city of northern Egypt, on the delta of the Nile. The Egyptian city of Memphis was one of the residences of the Egyptian Pharaohs. Argos, the capital of Argolis, is in the Peloponnesian peninsula. Mycenae, a city in Argolis, was reigned over by Agamemnon.
- 24 St Felix, Bishop of Nola, died in 484. For Bruno’s use of his childhood memories of Nola to reinforce his cosmological arguments, see the Introduction to this volume.
- 25 Aristotle, *Meteorology*, I, 14, 351a32.
- 26 “Because of the sun and circular motion.” Aristotle wrote in Greek, so here Bruno is citing one of the many sixteenth-century Latin translations of his work.
- 27 “Because of the circular motion of the sun.”
- 28 In the geocentric system, the ecliptic, or the path of the sun around a stationary earth, is inclined with respect to the equatorial plane, and runs along what was called the equinoctial plane. This explained why the sun shines directly over the band between the two tropics, but not beyond.
- 29 The “path traced by the wandering stars” corresponded, in the geocentric system, to their orbits carved in the seven orbs or spheres which contained the sun, the moon, and the other moving planets within the zodiac.
- 30 In the geocentric system, the *primum mobile* was originally the eighth sphere, containing the fixed stars, whose revolution caused the whole interlocked planetary system, including the sun and the moon, to revolve daily around a stationary earth.
- 31 This appears to be a reference to the movement known as the “precession of the equinoxes,” or the very slow slipping back of the whole geocentric planetary system on its axis in a sense opposite to that of its diurnal motion. It is not clear why Bruno thinks that this movement was already

“suspected” in the age of Aristotle. It was not discovered until much later by Hipparchus, a Greek astronomer of the second century BC, when he compared his own observations with those of a predecessor.

- 32 Bruno now goes on to explicate Aristotle’s phrase, the original context of which was thoroughly geocentric, in terms of his very different post-Copernican universe, in which multiple solar systems are composed of stars and planets orbiting around central, although not entirely stationary, suns.
- 33 Trepidation, vacillation, and the trembling of the poles of the universe were terms used in the geocentric system to define the so-called “anomalies” of precession, or its irregular rate, which made this long-term movement extremely difficult to measure. In order to account for its complexity, the geocentric astronomers had started to introduce a ninth and sometimes a tenth sphere into their system of the universe, which was becoming ever more complicated and abstruse. Copernicus would offer a different account of precession and its anomalies, within a heliocentric framework, by attributing them to long-term movements of the earth’s poles. In the later *De immenso*, bk. III, chap. 10, Bruno claims that it was his desire to understand how Copernicus understood the problem of precession that induced him to read the *De revolutionibus* in the first place. On Copernicus’s theory of precession, see Swerdlow (1975).
- 34 Bruno is replying, in qualified terms, to Smithus’s request to treat the movements of the earth as the principal subject of his dialogue rather than as a secondary one (or a mere digression): unlike Copernicus himself, he is not a mathematical astronomer concerned with earth movements as such, but rather a physicist or natural philosopher primarily concerned with the causes of such movements. Only when he has specified those causes in thermodynamic terms does he proceed to illustrate the nature of the earth’s movements as he understood them.
- 35 The “ecliptic,” which in the geocentric system was the name of the path followed by the sun around a central earth, becomes in the Copernican system the name for the path of the earth around a central sun, as Bruno himself will specify later on.
- 36 Bruno’s third movement is different from that proposed by Copernicus, who still thought of the earth and the other heavenly bodies as fixed on to solid celestial orbs. As the earth’s axis remains constant during its annual path around the sun, Copernicus thought of this constancy as a continual slipping back of the axis on its celestial orb. This is his third movement, to which he adds as a variant the very slow slipping back of the axis known as the precession of the equinoxes, together with a number of other anomalies. On Copernicus’s third movement, see the section on precession in Swerdlow and Neugebauer (1984). For a detailed explanation of Bruno’s

third earth movement, see the section “The Movements of the Earth” in the Introduction to this volume.

- 37 Bruno’s fourth movement here comprises only one of the several anomalies of precession discussed by Copernicus. It has been the subject of much comment and discussion. See the section “The Movements of the Earth” in the Introduction to this volume.
- 38 This new account of diurnal and annual movement and precession may seem confusing unless it is recognized that Bruno is defining them here according to the still commonly held Ptolemaic astronomy, which he is in fact attempting to dismantle. That is why he gives the rate of precession specified in the Alfonsine tables, instead of the much slower rate of 25,816 years calculated by Copernicus. The ninth celestial sphere, outside that of the fixed stars, is something in which Bruno himself does not believe, but which “they” had introduced into the traditional astronomy to solve the increasingly complex problems related, in the Ptolemaic system, to the rate of precession.
- 39 The narration of the traditional astronomy which “they” still believe in has now been terminated, and Theophilus returns to a consideration of things from his own post-Copernican point of view.
- 40 In the figure, A to E. Bruno seems to mean this as an analogy of the annual motion of the earth, but clearly an imperfect one, given that he is referring to the perpendicular motion of a spinning ball thrown into the air.
- 41 The spinning ball thrown up into the air is to be considered as an imperfect analogy of a moving earth. See my pages on this analogy in the final section of the Introduction to this volume.
- 42 These numbers are not present in the printed two-dimensional diagram, which complicates understanding of the precise sense of Bruno’s analogy between a moving earth and a spinning ball.
- 43 Bruno is emphasizing here, through an analogy with the case of a spinning ball, the essential irregularity of the earth’s multiple movements.
- 44 Smithus’s request here is paradoxical, as throughout the dialogue Theophilus/Bruno has always claimed that the Nolan philosophy is concerned with the causes and physical characteristics of the earth’s movements rather than with offering new observations or measurements of them.
- 45 “Is this the right solution? Do we always have to look for new theories?”
- 46 The reference is to a lost dialogue of Bruno’s, or possibly to the later dialogue, also published in London in 1584, entitled *Lo spaccio de la bestia trionfante* (*The Expulsion of the Triumphant Beast*).
- 47 This reference to Momus, the most satirical of the gods, who was expelled from Parnassus for his biting tongue, tends to confirm the hypothesis that Bruno’s reference to his *Purgatory of Hell* is an anticipation of his later

*Expulsion of the Triumphant Beast*, in which Momus plays a central role and probably represents, to some extent, Bruno himself. Timon of Athens, to whom Shakespeare would later dedicate a tragedy, was a nobleman of classical antiquity noted for his misanthropy.

- 48 Prudentius is merging two mythical legends here. On the one hand, the English noblemen who entertained the Nolan are ironically likened to the classical god Jupiter, who ordered a feast in the skies to celebrate his victory over the Titans. On the other hand, they are likened to the descendants of Priam, the King of Troy defeated by the Greeks. After his defeat, the Trojan Aeneas fled to Italy with his father Anchises and founded ancient Rome. The reference could also be to the English themselves, who boasted a legendary classical ancestry through the flight of the Trojan Brutus, said to have arrived on the shores of Britain. The Quirinal senate means the senate of ancient Rome, which here takes its name from the Quirinale, one of the seven hills of Rome. Whether Bruno's noble hosts were the victors or the defeated at the supper, Prudentius advises the Nolan to remain under the safer protection of the French ambassador, Mauvissière, here presented as the patron of his new philosophy.
- 49 The reference to the torches in Roman Catholic lands conjures up a vision of the processions that accompanied heretics to their death at the stake during the years of the Inquisition, and corresponds with remarkable accuracy to the ceremony that would accompany Bruno's own death in the Campo dei Fiori in Rome on 17 February 1600. On the details of Bruno's execution and the subsequent prohibition of the reading of his books, see Eugenio Canone, "L'editto di proibizione delle opere di Bruno e Campanella," *Bruniana e campanelliana* 1.1–2 (1995): 43–61.
- 50 Diogenes Laertius, in his *Lives of the Philosophers*, IX, 58–9, narrates the death of the cynic Anaxarchus of Abdera at the hands of the tyrant Nicocreon. Anaxarchus, who was crushed to death in a mortar, told the tyrant that he could beat his flesh as long as he liked, but he could not beat Anaxarchus. Laocoon was the son of the Trojan King Priam and Queen Hecuba, and priest of the Thymbrean Apollo: he was killed at the altar by two serpents, together with his two sons. The famous statue depicting their death was rediscovered in 1506 and placed in the Vatican in Rome, where Bruno probably saw it. St Roche of Montpellier (1295–1327) was the patron saint of sufferers from the plague, and was traditionally represented with the wounds from his plague sores. Prudentius relates this complex of imagery of violence and death to the figures of Nundinius and Torquatus, and more specifically to their teachers of uncivil behaviour and bad logic.
- 51 Ovid, in the *Metamorphoses*, IX, 104, tells the story of Evenus, son of Mars, who was beaten in a race by Idas and threw himself into a river in Aetolia,

which took his name. Tiberinus is the deity of the river Tiber in Rome. Palinurus was the pilot of Aeneas; he fell into the sea near Lucania and was buried on a promontory that is named after him. These images of deaths in famous rivers are related to the surly boatmen who refused to take the Nolan to his destination down the Thames.

- 52 Thrasones (Trasoni in Italian) is the pluralized name of Thraso, the swaggering soldier in the comedy *The Eunuch* by Terence. Ovid, in the *Metamorphoses*, XI, 1, narrates the story of the death of Orpheus at the hands of the Maenads, who tore him to pieces on the banks of the River Strymon in Thrace. Both Diomedes and Semele's brother were torn to pieces by horses (Seneca, *Troades*, 1118–19 and *Hercules furens*, 1176–7). For Cepheus, see Ovid *Metamorphoses*, V. The reference is to the power to turn to stone possessed by the shield of Perseus, father-in-law of Cepheus, which was covered with the Gorgon's head. The images relate to the fury of the common people of London who insulted the Nolan and his party on their journey along the Strand.
- 53 Minerva is the goddess of wisdom, traditionally represented with a spear and shield. The wooden horse introduced into Troy by the Greeks with their soldiers hidden in its belly decided the outcome of the Trojan War. Aesculapius, son of Apollo and Coronis, was the god of doctors and healing. Neptune, the god of the oceans, was traditionally represented with his trident. Virgil in his *Georgics*, III, 266–8, tells the story of Glaucus, who fed his horses on human flesh but was then devoured by them as an act of revenge planned by Venus. This final complex of classical imagery invokes wise and just gods and goddesses, seemingly ending the dialogue on a sublime note of epic heroism, which the neo-Aristotelian Prudentius then destroys in a final moment of anti-heroic irony and derision. The opening pages of Bruno's next philosophical dialogue in Italian, *De la causa, principio et Uno*, published a little later in 1584, will be dedicated to an impassioned defence of *The Ash Wednesday Supper*.

## Appendix

- 1 Bruno will repeat these sentiments in his later Latin work, *De monade*, bk. VII: see Bruno (2000a), 351. The verses cited are from Virgil, *Georgics*, bk. I, lines 197–203. Bruno's version is imprecise and may have been quoted from memory. For the English translation, see *The Eclogues, Georgics and Aeneid of Virgil*, trans. Cecil Day Lewis (Oxford: Oxford University Press, 1966), 57–8.
- 2 Another inexact quotation from Virgil's *Georgics*, I, 121–4. For the English translation, see *The Eclogues, Georgics and Aeneid of Virgil*, trans. Day Lewis, 55.

- 3 “Proceed, Sir.”
- 4 Elizabeth I succeeded her sister Mary Tudor on 17 November 1558, and the coronation took place on 1 January 1559. Bruno is participating here in the cult surrounding Elizabeth and her Court, which tended to present her as a mythical and almost supernatural empress representing peace and justice: see Frances Yates, “Queen Elizabeth as Astraea,” *Journal of the Warburg and Courtauld Institutes* 10 (1947), 27–82, and Yates (1975).
- 5 Robert Dudley (1532–1588), Earl of Leicester, the uncle of Sir Philip Sidney, had eagerly wooed the Queen herself during the early years of her reign, but in 1578 had married Lettice Knollys, Countess of Essex. Aquilecchia interpreted Bruno’s reference here to Leicester’s “signora” as a reference to his wife, but Tarantino proposed an alternative reading of his “signora” as meaning the Queen, as in the previous sentence. This alternative reading became an important part of Tarantino’s claim for the “vulgata” version of the text as the final and definitive one: see Tarantino (2004).
- 6 Sir Francis Walsingham’s daughter Frances married Sir Philip Sidney in 1583, the same year as Bruno’s arrival in England.
- 7 Although no references to Bruno have so far come to light in the papers of Sidney or his circle, Bruno’s works suggest not only admiration but also a personal relationship or at least a meeting with Sidney himself, as well as his friend Sir Fulke Greville, during Bruno’s stay in London. Sidney had travelled on the continent between 1572 and 1575, and had been widely admired for his culture and his exquisite manners, as Bruno’s remarks here confirm. Later, Bruno dedicated publicly to Sidney the important introductory letters to his dialogues *The Expulsion of the Triumphant Beast* and *On the Heroic Frenzies*.
- 8 In reading the following pages, it should be remembered that Bruno was not the only foreigner in the sixteenth century to complain of the hostile behaviour of the common English people. Erasmus in a letter to Andrea Ammonio of 8 July 1514, written after he had risked being robbed of his manuscripts during the crossing from England to France, wrote: “they treat foreign visitors so badly that it would be better to fall into any Turk’s hands than theirs.” Bruno’s friend John Florio has this dialogue in his *First Fruits*: “What do you think of English behaviour?” “I think that some behave very well and others very badly.” “But who do they usually behave badly with?” “With foreigners.”
- 9 “Every division must be into two parts, or at least reducible to two parts.”
- 10 See Ovid, *Metamorphoses*, VII, 121, where the poet narrates the myth of Jason and the Argonauts, and their search for the Golden Fleece. On their arrival in Colchis, they had to rescue the fleece from a dragon. After killing the dragon, Jason was required to give further proofs of his courage, including sowing the

dragon's teeth in the ground and then killing the fierce warriors who sprang up from them.

11 "What happens next."

12 Mercury was depicted with winged heels because of his role as messenger of the gods. The winged horse Pegasus was said to have caused the fount Hippocrene to flow on Mount Helicon, the abode of the Muses. Perseus, the son of Danae and Zeus, also had winged heels and was said to be the first rider of Pegasus. Cantos XXXIII–IV of Ariosto's *Orlando furioso* tell the story of Astolfo's journey through France, Spain, and Africa on his hippogriff, a winged horse with the head of an eagle. The Old Testament Book of Judges 6:1 tells the story of the children of Israel, who, as a punishment for their sins, were delivered into the hands of the Midians (in the Vulgate "Madians"), whose "camels were without number." The Gospel of St Matthew, chap. 2, tells the story of the three wise men who followed the star in search of the newborn Christ. There is no mention of them being mounted on giraffes: usually they are depicted as riding on camels.

13 "I commend myself to you."

14 "From lightning and tempest, from wrath and indignation, from malice, temptation, and the fury of rustics ... free us, O Lord." The words are a parody of the Lenten liturgy.

15 "Every rule has an exception."

16 "'The servant of servants' is no mean title, in any case." Prudentius is referring to the title *servus servorum Dei* (servant of the servants of God) held by the Pope.

17 Bruno uses the word "Borsa." Aquilecchia quotes Stow, I, 192–3, who writes that the Exchange was built in 1566 by Thomas Gresham, who had been commissioned to build a *Burse*, or a place for merchants to assemble in. In 1570, after a visit by the Queen, it became known as the Royal Exchange.

18 Bruno is probably referring to the Chatelet, the site of the law courts in Paris.

19 San Paolo Maggiore, the old Neapolitan cathedral.

20 Bruno is probably referring to the district of the Rialto rather than the bridge itself. John Florio, in his dictionary *A New World of Words* (1611), described it as "an eminent place in Venice where Merchants commonly meete, as on the Exchange at London."

21 The "vulgate" version of the text specifies that the Italian in question was Alessandro Citolini, and gave his arm as being broken, not his leg. Citolini was a Protestant exile who had arrived in England via Switzerland in 1566. He lived in London from 1570 until his death in 1584, which had probably just occurred when Bruno revised his text. For further information on Citolini, see Dialogue II, note 55, of this volume.

22 "By means of suffrages" (which, in theological language, are petitions in the form of prayers pronounced by the priest).

- 23 “More than the necessary number.” In the theology of the Roman Catholic Church, penitential “acts of supererogation” are those performed beyond the number that God requires as necessary, and are praiseworthy. Protestant theology, on the other hand, condemns penitential acts of supererogation as excessive with respect to God’s will.
- 24 The reference is to a character in Bruno’s comedy *Candelaio* who receives multiple beatings from a group of rogues. See Bruno (2002a), 421–2.
- 25 “A wise decision.”
- 26 Aquilecchia quotes Stow, II, 100–1, who describes the cross built of stone by Edward I in 1293, which gave its name to Charing Cross. The Puritans destroyed it in 1647, and after the Restoration, in 1675, the equestrian statue of Charles I was erected at the entrance to Whitehall.
- 27 “At the three cross-ways.”
- 28 “In silence and hope will be your strength. If someone has struck you a blow, give him one in return.” The evangelic precept of meekness is being overturned here.
- 29 It seems evident from this “conclusion” that it was Florio who created the little upset over precedent. There have been various conjectures concerning the identity of the knight seated at the head of table. As it was not Fulke Greville himself, it must have been someone with a higher rank than him, probably his friend Sir Philip Sidney, so warmly praised by Bruno in this dialogue. It is curious that the person mentioned earlier in Dialogue II as one of Fulke Greville’s guests who had the same surname as Bruno himself is not named here as one of the guests. For the possibility that the group of opponents invited to debate with Bruno was made up of the magnetic philosophers surrounding William Gilbert, which included the doctor Launcelot Browne, see chap. 5 of Gatti (1999).
- 30 “God be with you.”



*This page intentionally left blank*

# BIBLIOGRAPHY

- Aquilecchia, Giovanni. 1993a. *Schede bruniane (1950–1991)*. Manziana (Rome): Vecchiarelli.
- 1993b. “Tre schede su Bruno ad Oxford.” *Giornale critico della filosofia italiana* 72: 376–93. An English-language version of this paper was published in 1995 with the title “Giordano Bruno at Oxford” in *Giordano Bruno, 1583–1585: The English Experience*, ed. Michele Ciliberto and Nicholas Mann. Florence: Olschki.
  - 1993c. “*Le souper des cendres et ses variants*.” In *Introduction Philologique aux Oeuvres complètes de Giordano Bruno, I*. Paris: Les Belles Lettres.
  - 1995. “Giordano Bruno in Inghilterra (1583–1585).” *Bruniana e campanelliana* 1:21–42.
  - 2000. “Componenti teatrali nei Dialoghi londinesi di Giordano Bruno.” In *Teatri barocchi: tragedie, commedie, pastorali nella drammaturgia europea fra '500 e '600*, ed. Silvia Carandini. Rome: Bulzoni, 247–60.
- Aristotle. 1984. *The Complete Works*. 2 vols. Ed. Jonathan Barnes. Oxford: Oxford University Press.
- Bassi, Simonetta. 2004. *L'arte di Giordano Bruno: Memoria, furore, magia*. Florence: Olschki.
- Bolzoni, Lina. 2002. “Images of Literary Memory in the Italian Dialogues: Some Notes on Giordano Bruno and Ludovico Ariosto.” In Gatti, ed. (2002), 121–41.
- Bönker-Vallon, Angelika. 1995. *Metaphysik und Mathematik bei Giordano Bruno*. Berlin: Akademie Verlag.
- Bossy, John. 1991. *Giordano Bruno and the Embassy Affair*. New Haven: Yale University Press.
- 2001. *Under the Molehill: An Elizabethan Spy Story*. New Haven: Yale University Press.
- Bruno, Giordano. 1950. *On the Infinite Universe and Worlds*. Trans. and ed. Dorothy Waley Singer in *Giordano Bruno: His Life and Thought*. New York: Schumann.

- 1975. *The Ash Wednesday Supper*. Ed. and trans. Stanley L. Jaki. Berlin and New York: Walter de Gruyter; Paris: Mouton.
  - 1977/1995. *The Ash Wednesday Supper*. Ed. and trans. Edward A. Gosselin and Lawrence S. Lerner. New York: Archon Books; Toronto: University of Toronto Press.
  - 1998. *Cause, Principle and Unity and Essays on Magic*. Ed. and trans. Richard J. Blackwell and Robert de Lucca with an introduction by Alfonso Ingegno. Cambridge: Cambridge University Press.
  - 1999a. *De l'infinito, universo et mundi*, in *Opere italiane, ristampa anastatica delle cinquecentine*, ed. Eugenio Canone. Vol. II. Florence: Olschki, 639–845.
  - 1999b. *La cena delle ceneri*. In *Opere italiane, ristampa anastatica delle cinquecentine*, ed. Eugenio Canone. Vol. II. Florence: Olschki, 327–466.
  - 2000a. *De triplici minimo, De monade, De immenso et innumerabilibus, seu de universo et mundis*. In *Poemi filosofici latini, ristampa anastatica delle cinquecentine*, ed. Eugenio Canone. La Spezia: Agora.
  - 2000b. *Candlebearer*. Ed. and trans. Gino Moliterno. Ottawa: Dovehouse.
  - 2002a. *Opere italiane*. Ed. Giovanni Aquilecchia and Nuccio Ordine. 2 vols. Turin: UTET.
  - 2002b. *The Cabala of Pegasus*. Ed. and trans. Sydney L. Sondergard and Madison U. Sowell. New Haven: Yale University Press.
  - 2004a. *Opere mnemoniche: Tomo 1°*. Edition directed by Michele Ciliberto, ed. and trans. Marco Matteoli, Rita Sturlese, and Nicoletta Tirinnanzi. Milan: Adelphi.
  - 2004b. *The Expulsion of the Triumphant Beast*. 2nd revised edition, ed. and trans. Arthur D. Imerti with a foreword by Karen De Leon Jones. Lincoln: Bison Books/University of Nebraska Press.
  - 2009. *Opere mnemoniche: Tomo 2°*. Edition directed by Michele Ciliberto, ed. and trans. Marco Matteoli, Rita Sturlese, and Nicoletta Tirinnanzi. Milan: Adelphi.
  - 2012. *Opere lulliane*. Edition directed by Michele Ciliberto, ed. and trans. Marco Matteoli, Rita Sturlese, and Nicoletta Tirinnanzi. Milan: Adelphi.
  - 2013. *On the Heroic Frenzies*. Ed. and trans. Ingrid D. Rowland. Lorenzo da Ponte Library. Toronto: University of Toronto Press.
  - 2015. *La cena de las Cenizas*. Trans. with an introduction and notes by Miguel A. Granada. Madrid: Editorial Tecnos.
- Canone, Eugenio. 2003. *Il dorso e il grembo della materia: Percorsi della filosofia di Giordano Bruno*. Pisa and Rome: Istituti Editoriali e Poligrafici Internazionali.
- Canone, Eugenio, ed. 2003. *La filosofia di Giordano Bruno: Problemi ermeneutici e storiografici*. Florence: Olschki.
- Canone, Eugenio, and Germana Ernst, eds. 2006–14. *Enciclopedia bruniana e campanelliana*. 3 vols. Pisa and Rome: Istituti Editoriali e Poligrafici Internazionali.

- Catana, Leo. 2005. *The Concept of Contraction in Giordano Bruno's Philosophy*. London: Ashgate.
- Celenza, Christopher S. 2000. "Giordano Bruno, the Presocratic Tradition, and the Late Ancient Heritage." *Accademia* 2: 43–62.
- Ciliberto, Michele. 1990. "L'esperienza inglese." In *Giordano Bruno*. Bari-Rome: Laterza, 29–195.
- 2007. *Giordano Bruno: il teatro della vita*. Milan: Mondadori.
- Ciliberto, Michele, ed. 2014. *Giordano Bruno: Parole, concetti, immagini*. 3 vols. Pisa: Edizioni della Normale.
- Ciliberto, Michele, and Nicoletta Tirinnanzi. 2002. *Il dialogo recitato: per una nuova edizione del Bruno volgare*. Florence: Olschki.
- Copernicus, Nicholas. 1543. *De revolutionibus orbium coelestium*. Nuremburg: Ioh. Petreium.
- 1978. *On the Revolutions*. Ed. J. Dobrzycki, trans. Edward Rosen. Baltimore: Johns Hopkins University Press.
- De Bernart, Luciana. 2002. *Numerus quodammodo infinitus: per un approccio storico-teorico al "Dilemma Matematico" nella filosofia di Giordano Bruno*. Rome: Edizioni di Storia e Letteratura.
- Del Prete, Antonella. 1999. *Bruno: l'infinie et les mondes*. Paris: Presses Universitaires de France.
- Ficino, Marsilio. 1989 [1489]. *Libri de vita III: De vita coelitus comparanda*. English translation by Carol V. Kaske and John R. Clarke. Binghamton, NY: Medieval and Renaissance Texts and Studies.
- Finocchiaro, Maurice. 1989. *The Galileo Affair*. Berkeley and Los Angeles: University of California Press.
- Firpo, Luigi. 1993. *Il processo di Giordano Bruno*. Ed. Diego Quagliioni. Rome: Salerno editrice.
- Gatti, Hilary. 1989/2013. *The Renaissance Drama of Knowledge: Giordano Bruno in England*. London: Routledge.
- 1999. *Giordano Bruno and Renaissance Science*. Ithaca: Cornell University Press.
- 2008. "Paolo Giovio in Inghilterra: la traduzione inglese di Samuel Daniel." In *Con parola breve e con figura: Emblemi e imprese fra antico e moderno*, ed. Lina Bolzoni and Silvia Volterrani. Pisa: Edizioni della Normale.
- 2011. *Essays on Giordano Bruno*. Princeton and Oxford: Princeton University Press.
- 2013. "Cosmological Space between Copernicus and Newton." In *Memoirs of the American Academy in Rome*, vol. LVIII, 3–16.
- 2017. "'From Shadows towards Light': Transformations of Allegorical Journeys in Dialogue II of Giordano Bruno's 'Cena de le ceneri.'" In *Cultural Reception, Translation and Transformation from Medieval to Modern Italy: Essays*

- in *Honour of Martin McLaughlin*, ed. Guido Bonsaver, Brian Richardson, and Giuseppe Stellardi. Oxford: Legenda, 136–49
- Gatti, Hilary, ed. 2002. *Giordano Bruno: Philosopher of the Renaissance*. London: Ashgate.
- Gilbert, William. 1651. *De mundo nostro sublunari philosophia nova*. Amsterdam: Ludovicum Elzevirium.
- Gingerich, O. 1973. "From Copernicus to Kepler: Heliocentrism as Model and Reality." *Proceedings of the American Philosophical Society* 117: 515–20.
- Giovio, Paolo. 1976. *Dialogo dell'Imprese Militari ed Amoroze*. With the translation by Samuel Daniel, *The Worthy Tract of Paulus Jovius*. Ed. N.K. Farmer, Jr. Delmar, NY: Scholar's Facsimiles and Reprints.
- Gosselin, Edward A. 1987. "Fra Giordano Bruno's Catholic Passion." In *Supplementum Festivum: Studies in Honor of Paul Oskar Kristeller*. Binghamton, NY: Medieval and Renaissance Texts and Studies, 537–61.
- Granada, Miguel A. 1990. "Il rifiuto della distinzione fra *potenzia assoluta* e *potential ordinata* di Dio e l'affermazione dell'universo infinito in Giordano Bruno." *Storia della filosofia* 3.
- 1992. "Bruno, Digges, Paligenio: omogeneità, eterogeneità nella concezione dell'universo infinito." *Rivista di Storia della Filosofia* 47.1.
  - 2010. "Synodus ex mundis." In *Enciclopedia bruniana e campanelliana, vol. II*. Ed. Eugenio Cnone and Germana Ernst. Pisa-Rome: Fabrizio Serra Editore, 142–154.
- Grant, Edward. 1994. *Planets, Stars and Orbs: The Medieval Cosmos*. Cambridge: Cambridge University Press.
- Harris, Neal. 2006. "Il cancellans da Bruno a Manzoni: fisionomia e fisiologia di una cosmesi libraria." In *Favole, metafore, storie: Seminario su Giordano Bruno*. Ed. Olivia Cantorchi and Diego Pirillo. Pisa: Edizioni della Normale, 567–602.
- Hermetica: The Greek Corpus Hermeticum*. 1992. Ed. and trans. Brian P. Copenhaver. Cambridge: Cambridge University Press.
- Ingegno, Alfonso. 1978. *Cosmologia e filosofia nel pensiero di Giordano Bruno*. Florence: La Nuova Italia.
- Jossa, Stefano. 2008. "Il viaggio infernale di Rodomonte: una fonte della *Cena de le ceneri* tra Doni e Aretino." *Giornale storico della letteratura italiana* 185: 577–89.
- Knox, Dilwyn. 2001. "Bruno's Doctrine of Gravity, Levity and Natural Circular Motion." *Physis* 38: 171–209.
- 2013. "Bruno: Immanence and Transcendence in *De la causa, principio et uno*, Dialogue II." *Bruniana e campanelliana* 19.2: 463–82.
- Koyré, Alexandre. 1957. *From the Closed World to the Infinite Universe*. Baltimore: Johns Hopkins University Press.

- Kuhn, Thomas S. 1957/1985. *The Copernican Revolution: Planetary Astronomy in the Development of Western Thought*. Cambridge, MA, and London: Harvard University Press.
- Lerner, Michel-Pierre. 2008. *Le monde des sphères: La fin du cosmos classique*. Paris: Les Belles Lettres.
- Lindberg, David C., and Robert S. Westman, eds. 1990. *Reappraisals of the Scientific Revolution*. Cambridge: Cambridge University Press.
- Lovejoy, Arthur O. 1936. *The Great Chain of Being: The Story of the History of an Idea*. Cambridge, MA: Harvard University Press.
- Lüthy, Christophe, and Alexis Smets. 2009. "Words, Lines, Diagrams, Images: Towards a History of Scientific Imagery." *Early Science and Medicine* 14: 398–493.
- Martinez, Alberto A. 2016. "Giordano Bruno and the Heresy of Many Worlds." *Annals of Science* 73.4: 1–30.
- Massa, Daniel. 1973. "Giordano Bruno and the Top-Sail Experiment." *Annals of Science* 30.2: 201–11.
- McMullin, Ernan. 1986. "Giordano Bruno at Oxford." *Isis* 77: 85–94.
- Mendoza, Ramon G. 1995. *The Acentric Labyrinth: Giordano Bruno's Prelude to Contemporary Cosmology*. Shaftesbury-Rockport-Brisbane: Element Books.
- Michel, Paul Henri. 1962. *La cosmologie de Giordano Bruno*. Paris: Hermann.
- 1973. *The Cosmology of Giordano Bruno*. Trans. R.E.W. Madison. Ithaca: Cornell University Press, 1973.
- Ophir, Adi. 1994. Introduction. In Giordano Bruno, *Le souper des cendres: Oeuvres complètes II*. Paris: Les Belles Lettres.
- Omodeo, Pietro Daniel. 2009. "Giordano Bruno and Nicolaus Copernicus: The Motions of the Earth in *The Ash Wednesday Supper*." *Nuncius: Journal of the History of Science* 24.1: 35–59.
- 2014. *Copernicus in the Cultural Debates of the Renaissance: Reception, Legacy, Transformation*. Leiden-Boston: Brill.
- Ordine, Nuccio. 1996. *Giordano Bruno and the Philosophy of the Ass*. New Haven: Yale University Press.
- Pirillo, Diego. 2010. *Filosofia ed eresia nell'Inghilterra del tardo Cinquecento. Bruno, Sidney e i dissidenti religiosi italiani*. Rome: Edizioni di Storia e Letteratura.
- Plato. 1961. *The Collected Dialogues*. Ed. Edith Hamilton and Huntington Cairns. Princeton: Princeton University Press.
- Pompeo Faracovi, Ornella, ed. 2013. *Aspetti della geometria nell'opera di Giordano Bruno*. Lugano: Agora.
- Providera, Tiziana. 2002. "John Charlewood, Printer of Giordano Bruno's Italian Dialogues, and His Book Production." In *Giordano Bruno: Philosopher of the Renaissance*, ed. Hilary Gatti. London: Ashgate, 167–86.
- 2015. "Bruno, Charlewood and Mundy: Politics, Culture and Religion during Bruno's Time in England." In *Authority, Innovation and Early Modern*

- Epistemology*, ed. Martin McLaughlin, Ingrid Rowland, and Elisabetta Tarantino. Cambridge and Leeds: Legenda, 137–56.
- Ptolemy. 1984. *The Almagest*. Ed. and trans. G.J. Toomer. London: Duckworth.
- Rees, Joan. 1964. *Samuel Daniel: A Critical and Biographical Study*. Liverpool: Liverpool University Press.
- Ricci, Saverio. 2000. *Giordano Bruno nell'Europa del cinquecento*. Rome: Salerno Editrice.
- Rowland, Ingrid. 2008. *Giordano Bruno: Philosopher and Heretic*. New York: Farrar, Strauss and Giroux.
- Saiber, Arielle. 2005. *Giordano Bruno and the Geometry of Language*. Aldershot: Ashgate.
- Spampanato, Vincenzo. 1921. *Vita di Giordano Bruno. Con documenti editi ed inediti*. Messina: Principato.
- Sturlese, Rita. 1987. *Bibliografia, censimento e storia delle antiche stampe di Giordano Bruno*. Florence: Olschki.
- 1994. “Le fonti del *Sigillus sigillorum* di Bruno, ossia il confronto con Ficino a Oxford sull’anima umana.” *Nouvelles de la republique des lettres* 2: 89–167.
- Swerdlow, Noel M. 1975. “On Copernicus’ Theory of Precession.” In *The Copernican Achievement*, ed. Robert Westman. Los Angeles: University of California Press, 49–98.
- Swerdlow, Noel M., and Otto Neugebauer. 1984. *Mathematical Astronomy in Copernicus’s “De revolutionibus.”* 2 vols. New York: Springer.
- Tarantino, Elisabetta. 2002. “*Ultima Thule*: Contrasting Empires in Bruno’s *Ash Wednesday Supper* and Shakespeare’s *Tempest*.” In Gatti, ed. 2002.
- 2004. “Le due versioni del foglio D della *Cena de le ceneri*.” *Bruniana e campanelliana* 10.2: 413–24.
- Tessicini, Dario. 2007. *I dintorni dell’infinito: Giordano Bruno e l’astronomia del Cinquecento*. Rome: F. Serra.
- Tirinnanzi, Nicoletta. 2006. “Virtù, fortuna, potenza: osservazioni sulle due redazioni del foglio D de *La cena de le ceneri*.” In *Favole, metafore, storie: Seminario su Giordano Bruno*, ed. Olivia Cantorchi and Diego Pirillo. Pisa: Edizioni della Normale, 541–66.
- Tissoni, Roberto. 1958–9. “Lo sconosciuto fondo bruniano della Trivulziana.” *Atti dell’Accademia delle Scienze di Torino* 93: 459–68.
- 1959. “Sulla redazione definitiva della *Cena de le ceneri*.” *Giornale storico della letteratura italiana* 136: 558–63.
- Tocco, Felice. 1889. *Le opere latine di Giordano Bruno esposte e confrontate con le italiane*. Florence: Le Monnier.
- Vedrine, Hélène. 1967. *La conception de la nature chez Giordano Bruno*. Paris: Librairie philosophique J. Brin.

- Westman, Robert S. 1975a. "The Melancthon Circle, Reticus, and the Wittenberg Interpretation of the Copernican Theory." *Isis* 66: 165–93.
- Westman, Robert S., ed. 1975b. *The Copernican Achievement*. Berkeley and Los Angeles: University of California Press.
- 1977. "Magical Reform and Astronomical Reform: The Yates Thesis Reconsidered." In *Hermeticism and the Scientific Revolution*, ed. Robert S. Westman and J.E. McGuire. Los Angeles: University of California – William Andrews Clark Memorial Library.
  - 1990. "Proof, Poetics, and Patronage: Copernicus's Preface to *De revolutionibus*." In *Reappraisals of the Scientific Revolution*, ed. David C. Lindberg and Robert S. Westman. Cambridge: Cambridge University Press, 167–205.
  - 2011. *The Copernican Question: Prognostication, Skepticism, and Celestial Order*. Berkeley and Los Angeles: University of California Press.
- Wyatt, Michael. 2005. *The Italian Encounter with Tudor England: A Cultural Politics of Translation*. Cambridge: Cambridge University Press.
- Yates, Frances. 1964/2002. *Giordano Bruno and the Hermetic Tradition*. Ed. J.B. Trapp. London and New York: Routledge.
- 1982. "The Religious Policy of Giordano Bruno." First published in 1939–40 in the *Journal of the Warburg and Courtauld Institutes* 3: 181–207. Reprinted in *Collected Essays, vol. 1, Lull and Bruno*. London: Routledge and Kegan Paul, 1982, 151–79.
  - 1966. *The Art of Memory*. London: Routledge and Kegan Paul.
  - 1975. *Astraea: The Imperial Theme*. London: Routledge.



*This page intentionally left blank*

# INDEX

- Abbott, George, xviii–xxii,  
229nn26,31
- Aeneas, 58–9, 252n10, 253n24,  
279n48, 280n51
- Aglaophemus, 248n60, 249n60
- Ahasuerus, 6–7, 234n5
- Alasco, Albert (Polish prince), xvii,  
xviii, 154–5, 229n24
- Alberti, Leon Battista, 236n7
- Alcibiades, xxiii, 239n19
- Alexander of Aphrodisias, xxvii,  
130–1, 230n46, 266n53
- Alexander the Great, 16–17, 40–1,  
42–3, 239n24, 245n40, 248n57
- Alfonso X (Spanish king: Alfonsine  
Tables), xlvii, 278n38
- Alhazen (Ibn Al-Haytham: *Optics*),  
xxx, xxxi, 231n57, 260n15,  
261nn25–6, 273n2
- Amphitrite (sea goddess), 70–1,  
126–7, 265n51
- Anthony, Mark (Roman consul),  
243n23
- Anticyram (island of), xxxv, 270n28
- Apelles (Greek painter), 30–1, 245n40
- Apollo (Greek god), 34–5, 279n50,  
280n53
- Aquilecchia, Giovanni, xviii, xx, xxi,  
xxxii, lvii, lviii, lix, lx, 227n10,  
228n22, 229n23, 229nn25–6,  
229n28, 229n30, 230n35, 231n62,  
233nn3–4, 233n6, 237n14,  
240nn1–2, 243n28, 244n34,  
248n59, 254n34, 258n7, 262n30,  
262n34, 268n8, 274n7, 276n15,  
281n5, 282n17, 283n26
- Aquinas, Thomas (St), xv, 265n45
- Argo* (Argonauts), 32–3, 186–7,  
238n15, 245n42, 246n45, 256n49,  
270n21, 281n10
- Aries (constellation: the Ram), 22–3
- Ariosto, Ludovico (*Orlando furioso*),  
246n46, 252nn9,14, 256n50,  
282n12
- Aristarchus of Samos (astronomer),  
250n68
- Aristarchus of Samothrace  
(grammarian), 48–9, 250n68
- Aristodemus, xxiii
- Aristotle, x, xvii, xxx, xxxi, 6–7, 10–11,  
42–3, 44–5, 64–5, 114–15, 120–1,  
144–5, 156–7, 158–9, 184–5, 186–7,  
188–9, 235n7, 238n16, 263n39,  
267n1, 269n16, 276n26, 277n32;  
Aristotelian, xxv, xxx, xxxi, xxxii,  
xxxiii, xxxv, xxxvi, xlv, liv, 234n3,  
236n8, 238n17, 240n25, 241n15,  
245n37, 249n62, 262nn30,32,35,

- 265n45, 266n56, 268n11, 269n11, 272n42, 273nn5,7, 274nn10,13,14; neo-Aristotelian, ix, xiii, xxvi, xxviii, xxxvi, xli, 233n2, 237n12, 254n34; *De anima*, 265n45; *De caelo*, 130–1, 239n18, 244n36, 248n53, 249n65, 259n12, 266n54; *De divinatione in somniis*, 273n7; *Physics*, xxxii, 241n14, 243n27, 253n27, 275n17, 276n21, 280n53; *Metaphysics*, 241n13, 264n43; *Meteorology*, xxvii, 126–7, 264n41, 265n49, 276nn22,25
- Astyanax (Trojan), 239n20
- Augustus (Roman Emperor), 24–5, 243n23, 252n16
- Avernus (entrance to the underworld), 62–3, 253n24
- Averroes, 144–5, 250n69, 267n2
- Bacon, Francis, 247n50
- Barberi Squarotti, Giorgio, 228n13
- Bassi, Simonetta, 229nn24,27
- Bear, the (constellation: Ursa), 16–19, 166–7, 240n26
- Berni, Francesco, 6–7, 235n5, 237n12, 254n40
- Bible (Holy Scriptures), ix, xviii, xxxvi, 138–9, 140–1, 144–5, 146–7, 230n43, 237n11, 242n16, 267n1, 268nn9–10, 270n29, 272n42
- Biblioteca Nazionale Centrale (Rome), lviii
- Biblioteca Trivulziana (Milan), lviii, lix, 206–7, 254n37
- Bologna (Italy), 6–7, 235n6
- Bolzoni, Lina, 247n46, 252n9, 257n55
- Bönker-Vallon, Angelika, 231n53
- Boötes (constellation), 16–19, 240n26
- Boschetto, Luca, 236n7
- Bossy, John, 228n19, 234n4, 240n25, 251n2, 255n45
- Bowen, Barbara C., 254n34
- Brahe, Tycho, xx, xxi, xxx, xlv, 231n55, 259n12, 272n1
- Britannia (Britain), xxvi, xxvii, 16–17, 70–1, 130–1, 188–9, 246n43, 266n52, 279n48
- British Library, xxxix, li, lx, 100–1, 104–5, 108–9, 110–11, 128–9, 134–5, 162–3, 170–1, 196–7, 206–7, 230n32, 233n12, 234n4
- Broughton, Hugh, xviii
- Bruno, Giordano (the Nolan), works: *Articuli centum et sexaginta adversus huius tempestatis mathematicos atque philosophos*, 244n34; *Ash Wednesday Supper*, passim; *Cabala of Pegasus*, x, 227n1; *Candle-maker (Candelaio, Chandler)*, xv, xvii, xxiv, 6–7, 228n21, 235n5, 240n1, 283n24; *Cantus Circaeus*, xvii; *Cause, Principle and One*, x, xxii, xxxiv, 227n1, 242n15; *De compendiosa architectura*, xvii; *De immenso et innumerabilibus*, xxxviii, liii, 232n86, 245n37, 246n45, 264n40, 271n31, 275nn15,16,19, 277n33; *De monade, numero et figura*, 230n47; *De umbris idearum*, xvii, xxiii, 244n32; *Explicatio triginta sigillorum*, xix, 244n32; *Expulsion of the Triumphant Beast*, x, xvi, 227n1, 239n19, 250n1, 255n46, 278n46, 279n47, 281n7; *Infinite Universe and Worlds*, x, xxviii, xxxiv, lv, 227n1; *On the Heroic Frenzies*, x, xi, xvi, xxiii, 227n1, 228n17, 253n25, 255n46, 267n3, 281n7; *Sigillus sigillorum*, xx, 229n29

- Bruno, Giovanni (father of the Nolan), [xiv](#)
- Buckhurst, Lord (Thomas Sackville, later Earl of Dorset), [58–9](#), [251n7](#)
- Buridan, Jean, [xxxii](#)
- Caesar, Julius, [78–9](#), [188–9](#), [216–17](#), [242n23](#)
- Calvin, John (Calvinist, Calvinism), [xviii](#), [235n5](#), [268n10](#)
- Cancer and Capricorn (tropics), [xxxv](#), [140–1](#), [158–9](#), [271n33](#)
- Canone, Eugenio, [206–7](#), [235n11](#), [257n58](#), [271n31](#), [279n49](#)
- Casaubon, Isaac, [249n60](#)
- Caserta, Count of, [xiv](#), [249n63](#)
- Castelnau, Michel de, Lord of Mauvissière (French Ambassador in London), [xvi](#), [xxii](#), [xxiv](#), [lvi](#), [lx](#), [2–3](#), [6–7](#), [202–3](#), [228n19](#), [234n4](#), [240n25](#), [279n48](#)
- Catana, Leo, [232n67](#), [270n23](#), [275n18](#)
- Catholic Church (Catholic, Catholicism), [ix](#), [xv](#), [xvi](#), [xviii](#), [xix](#), [xxv](#), [xxvi](#), [xxxv](#), [xxxvi](#), [lvii](#), [lx](#), [202–3](#), [228n19](#), [230n45](#), [234n4](#), [236nn10–11](#), [258n8](#), [265n45](#), [267n1](#), [268n11](#), [271n33](#), [279n49](#), [283n23](#)
- Cato (Roman censor), [14–15](#), [239n19](#), [247nn48–9](#)
- Cecil, William (Lord Burghley, Treasurer to Elizabeth I), [72–3](#), [255n44](#)
- Cesi, Federico, [238n15](#)
- Charlewood, John (Bruno's English printer), [xvi](#), [lvii](#), [lx](#), [228n16](#)
- Charon (infernal helmsman), [58–9](#), [251n8](#), [252n11](#)
- Christ, Jesus (Christian, Christians), [x](#), [xvi](#), [xxvi](#), [xxvii](#), [xxxiii](#), [xxxv](#), [xxxvi](#), [lvii](#), [2–3](#), [146–7](#), [235n5](#), [242n22](#), [243n23](#), [252n11](#), [256n50](#), [257n57](#), [263n38](#), [265n45](#), [268n11](#), [269n11](#), [282n12](#)
- Chrysostom, John (St), [xv](#)
- Cicero, [243n30](#), [250n69](#), [259n12](#)
- Ciliberto, Michele, [227n9](#), [230n34](#), [233n9](#)
- Citolini, Alessandro, [78–9](#), [251n5](#), [257n55](#), [282n21](#)
- Clagett, Marshall, [xxxii](#), [231n61](#)
- Clavius, Christopher, [xiv](#)
- Clucas, Stephen, [244n32](#)
- Cobham, Sir Henry, [xvii](#), [228n22](#)
- Cocai, Merlin (pseud. of Theophilo Folengo), [60–1](#), [242n22](#), [253nn22,30](#), [254n34](#)
- Collison, Patrick, [255n44](#)
- Colomb (St), [8–9](#)
- Columbus, Christopher, [32–3](#)
- Copernicus, Nicholas (Copernican, *De revolutionibus orbium coelestium*), [ix](#), [x](#), [xi](#), [xii](#), [xix](#), [xxii](#), [xiii](#), [xiv](#), [xvi](#), [xix](#), [xx](#), [xxi](#), [xxii](#), [xxiv](#), [xxv](#), [xxviii](#), [xxix](#), [xxx](#), [xxxi](#), [xxxii](#), [xxxiii](#), [xxxvii](#), [xxxviii](#), [xxxix](#), [xl](#), [xli](#), [xlii](#), [xliii](#), [xliv](#), [xlv](#), [xlvi](#), [xlvii](#), [xlviii](#), [xlxi](#), [l](#), [lii](#), [liii](#), [liv](#), [lv](#), [lxiii](#), [lxiv](#), [8–11](#), [26–9](#), [38–9](#), [42–3](#), [88–97](#), [114–15](#), [158–65](#), [194–5](#), [229nn28,31](#), [230nn49–51](#), [231nn52,63,64](#), [232nn70–2](#), [233n88](#), [233n2](#), [239n17](#), [245nn36–7](#), [248n57](#), [249n60](#), [250n1](#), [255n41](#), [258nn8–9](#), [259nn10–13](#), [261n27](#), [262n35](#), [263nn35,36,38](#), [264nn43–4](#), [265nn44,49](#), [266n52](#), [266nn55–6](#), [267nn1–2](#), [269n19](#), [270n28](#),

- 271nn31,33,36, 272n1, 274n13,  
276n22, 277nn32–6, 278nn37–9
- Council of Trent, xv
- Croesus, 16–17, 239n21
- Cupid, 22–3
- Cusanus, Nicolas, xxix, 92–3, 112–13,  
259n12, 262n33, 263n35
- Daniel, Samuel, xv, 228n12, 258n7
- Dante Alighieri, 245n39, 253n23,  
253n30
- David (Psalms), xxvi, 242n16
- De Bernart, Luciana, 231n54,  
232n84
- Democritus of Abdera (Greek philosopher), x, 6–7, 172–3, 235–6n7,  
238n16, 273n5
- Dick, Stephen, J., 238n16
- Dicson, Alexander, xvi, xvii, 228n20
- Digges, Leonard, xxxii
- Digges, Thomas, xii, xxxii, lv, 231n62,  
258n9, 266n56
- Diodati, Theodore, 251n5
- Diogenes of Sinope (Greek philosopher), 6–7, 17–18, 235n5, 236n9,  
239n24
- Diotima (female philosopher in Plato's *Symposium*), xxxiii–xxiv
- Dudley, Robert (Earl of Leicester), xvi, xxi, 72–3, 210–11, 255n44,  
281n5
- Egypt (Egyptians), xxxvi, 42–3,  
186–7, 250n68, 276n23
- Einstein, Albert, xxv, 230n42
- Elizabeth I (English queen, Elizabethan), ix, xvi, xvii, lix, lx,  
70–1, 210–11, 228n19, 234n4,  
240n25, 255nn43–5, 258n6, 281n4
- Elton, Oliver, 228n22
- Elysian fields, 64–5
- England, xii, xvi, xvii, xxi, xxx, 2–3,  
6–7, 26–7, 88–9, 154–5, 210–11,  
218–19, 228n22, 229n29, 234n4,  
237n14, 240n25, 240n4, 246n45,  
250n2, 251n5, 255nn45,47,  
257n55, 258nn6,9, 272n42,  
281nn6,8, 282n21
- Ephectics (ancient school of sceptic philosophy), 46–7
- Epicuro, Marc'Antonio (*Cecaria*),  
62–3, 253n26
- Epicurus (Epicureanism), 96–9,  
172–3, 236n10, 244n32, 247n47,  
250n70, 260nn19–20, 273n5
- Erasmus of Rotterdam, xv, xxxv,  
40–1, 239n19, 246n44, 247n51,  
248n58, 252nn13,16, 255n47,  
270n28, 271n37, 281n8
- Esther (Old Testament book), 234n5
- Euclid (Greek geometer), xxx
- Eudoxus of Cnidus, 28–9, 41–2,  
244n36, 248n53
- Europe (European), ix, xii, xiii, xv,  
xviii, xxv, 16–19
- Faggott, Henry (pseud.), 228n19,  
255n45
- Faracovi, Ornella, 257n58, 274n8
- Feingold, Mordechai, 229n28
- Felice (St, Nolan martyr), xiv, 188–9,  
228n10
- Ficino, Marsilio, xiii, xix, 248n60;  
*De vita coelitus comparanda*, xix–xxi,  
229n31, 273n6
- Finocchiaro, Maurice, 232n70,  
258n8, 259n10, 267n2, 269n19
- Firpo, Luigi, 228n13, 238n14,  
240n25, 267n2
- Florence (Italy), 6–7, 22–3, 206–7,  
235nn5–6, 237nn11–12, 248n59,  
262nn31–2, 273n6

- Florio, John, *xvi*, 56–7, 60–1, 82–3, 222–3, 228n20, 234n4, 240n3, 244n33, 251n5, 256n47, 256n54, 258nn6–7, 281n8, 282n20, 283n29  
 Folengo, Theophilus: *see* Cocai, Merlin  
 fortune, 6–7, 58–63, 66–71, 82–3, 206–7, 210–11, 222–3, 247n48  
 Fracastoro, Girolamo, *xvi*, 235n5  
 Franco, Nicolò, *lviii*  
 Frankfurt (Germany), *xv*, 241n9, 245n37  
 free will, 66–7  
 Galilei, Galileo, *xii*, *xix*, *xxx*, *xxxii*, *xxxvi*, *xli*–*xlii*, *xlvi*, 231n61, 232n70, 238n15, 258n8, 259nn10,13, 261n24, 262nn32–3, 263n38, 266n56, 267nn1–2, 269n19, 273nn6–7, 274n10, 275n16  
 Ganymede (celestial cup bearer), 80–1  
 Garin, Eugenio, 248n59  
 Gatti, Hilary, 227n7, 228n12, 229n31, 230nn32,39,44, 231nn58,64, 232nn69,71,73, 233n89, 237n11, 238n14, 240n2, 241n9, 242nn15–16, 244n34, 250n70, 251n7, 253n23, 258n7, 260n15, 262nn29,32, 263nn35,37, 265nn44,47, 268nn9–10, 271n31, 272n41, 276n20, 283n29  
 Geneva (Switzerland), *xv*  
 Gentile, Alberigo, *xviii*, 229n25, 251n5  
 Gentile, Giovanni, *lvii*, 237n12, 243n28, 248n59  
 Germany (German), 28–31, 245n37, 248n56  
 Ghibelline, 42–5, 249n62  
 Gilbert, William, *xxi*, 229–30n32, 264–5n44, 271n31, 273n6, 283n29  
 Gingerich, Owen J., 230n49  
 Giovio, Paolo, *xv*, 228n12, 258n7  
 Gosselin, Edward A., *xi*, 230n45, 236n10  
 Grafton, Antony, 249n60  
 Granada, Miguel A., *lx*, 227n6, 228n17, 229n31, 232n88, 233n10, 270n23, 275n16, 276n22  
 Grant, Edward, 231n56, 264n43, 272n1  
 Greece (Greek), *xxxvi*, 20–1, 24–7, 234n5, 235n5, 236n9, 239nn19–22, 240nn4–5, 243nn29,31, 244nn31,36, 245nn40–2, 248n55, 250n68, 252n16, 271n37, 276n26, 277n31, 279n48, 280n53  
 Greville, Sir Fulke, *xiv*, *xvi*, *xxi*–*xxiii*, *xxvi*–*lv*, 8–9, 54–5, 237n12, 237–8n14, 244n33, 250n1, 251n6, 254n41, 255n46, 272n42, 281n7, 283n29  
 Grocyn, William, 240n4  
 Guelph, 42–5, 249n62  
 Gwinne, Mathew, *xvi*, 56–7, 244n33  
 Hannibal (Carthaginian general), 58–9, 78–9, 216–17  
 Haracensis, Mahomet (Al Battani), 42–3, 248n56  
 Harriot, Thomas, 242n15, 253n23, 263n37  
 Harris, Neil, *lix*–*lxi*, 233n8  
 Harvey, Gabriel, *xvii*  
 Hector (Trojan warrior), 78–9, 216–17, 239n20  
 Henri III (French king), *xvi*, 2–3, 16–17, 228n19, 239–40n25  
 Heraclitus of Ephesus (Greek philosopher), 6–7, 96–9, 236n7, 260n18  
 Heraclitus of Pontus (Greek cosmographer), 172–3, 259n12, 273n5

- Hercules (Greek god, son of Zeus), 58–9, 241n8, 264n42, 280n52
- Hermeticism (Hermetic magic), xi, xx, xxxiii–xxxvi, xli–xlii, 232n66, 249n60, 266n55
- Hipparchus of Nicaea, 28–9, 42–3, 244–5n36, 248n54, 277n31
- hippogriff (half eagle, half horse), 74–5, 215, 256n50, 282n12
- Holinshed, Raphael, xvii, 229n24
- Hooker, Richard (Anglican theologian), xviii, 229n25
- Hotman, John, xviii, 229n25
- Huffman, Carl A., 249n66, 259n12
- Index of Prohibited Books, xv, xix, 267n1
- infinity (infinite universe), x, xii–xiv, xvi, xx–xxi, xxiv–xix, xxxi, xxxiii–xxxiv, xxxvii, xli, lv, 10–11, 22–3, 28–9, 36–7, 64–5, 102–3, 106–7, 114–17, 150–1, 172–3, 200–1, 227n1, 231n54, 232nn65,66,69,88, 233n2, 236n8, 237n12, 238n16, 245n37, 246n45, 253n27, 255n41, 259n12, 261–2n29, 262n30, 262–3n35, 263n37, 264nn40,44, 268n9, 270n23, 273nn4–5, 274n13, 275nn14,18
- Ingegno, Alfonso, xliv–xlvi, xlix, liv, 227n1, 232n77,87, 235n5, 248n58
- Inquisition (Roman Catholic), xv, 279n49
- Israel (Jerusalem), 22–3, 68–9, 70–1, 242nn21–2, 256n50, 282n12
- Italy, xiii–xv, 72–3, 88–9, 188–9, 210–13, 240n4, 258n8, 278n48
- James I (British king), xvi, xviii, 230n43
- Jaki, Stanley L., xi
- Jason (leader of the Argonauts), 74–5, 212–13, 245n42, 256n49, 270n21, 281n10
- Jerome (St), xv
- Jesus Christ: *see* Christ, Jesus
- Jossa, Stefano, 252n9
- Jove (Zeus, Jupiter, king of the ancient Greek gods), 6–7, 48–9, 146–7, 202–3, 234–5n5, 256n50, 282n12
- Jupiter (planet), xix, xxx, 262n32
- Juvenal (poet of ancient Rome), 252n21
- Kepler, Johannes, xxviii, xxxii, 253n23, 258n9, 262n32, 272n1
- Knights Templar, 252n19
- Knox, Dilwyn, 231n64, 275n14
- Koyré, Alexander, xxxiii, 231n62
- Kuhn, Thomas, 231n52, 239n17, 244–5n36, 248n53, 259n13
- Laetius, Diogenes (*Lives of the Philosophers*), 96–7, 239n24, 249nn66–7, 259n12, 260nn18–19, 279n50
- Leicester, Earl of: *see* Dudley, Robert
- Lerner, Lawrence S., xi–xii, 236n10
- Lerner, Michel-Pierre, 231n56, 264n43, 272n1
- librations, xlviii
- Linacre, Thomas, 240n4
- London, ix–xi, xiii, xv–xvi, xix–xxi, xxiii, xxvi–xxvii, xxxiv, lvii–lx, 158–9, 188–9, 202–3, 230n35, 234n4, 238n14, 242n20, 244nn32,35, 246n46, 250n2, 251n7, 252n10, 253n23, 255n46, 256n54, 257n55, 264n44, 273n4, 278n46, 280n52, 281n7, 282nn20–1
- Lovejoy, Arthur O., 232n65, 263n37

- Lucretius (Lucretian renaissance), *x*,  
*xii*, 96–7, 236n10, 238n16, 250n70,  
 260nn20–1
- Lullus, Lucius Licinius, 6–7, 234n5
- Lull, Raymund (Lullian), *xvii*,  
 228n21, 244n32
- Lüthy, Christophe, 232n85
- Lycaon, 6–7, 146–7, 234–5n5
- Lynceus, 10–11, 238n15
- Magi, the, 42–3, 74–5, 214–15, 248n60
- magic, *xi*, *xix*, 44–5, 227n1, 229n31
- magnetism (the magnet), *xxi*, 122–3,  
 172–3, 176–7, 229n31, 264–5n44,  
 273n6, 274n8, 283n29
- Martinez, Albert, 232n70, 238n16
- Mary (Queen of Scots), *xvi*, *lx*, 234n4
- Mary (Tudor, Queen of England),  
 255n43, 281n4
- Mary (Virgin), *xiv*
- McMullin, Ernan, 240n2
- McNulty, Robert, *xix*
- memory, art of: *see* Mnemosyne
- Mendoza, Ramon D., 231n63
- Menelaus (Roman geometer), 42–3,  
 248nn55,57
- Mercury (Greek god), 34–5, 74–5,  
 214–15, 254n34, 256n50, 282n12
- Mercury (planet), 102–3, 248n53,  
 259n12, 261n27
- Michel, Paul Henri, *xxxi*, *xlii*,  
 231n60, 232n76
- Middle Ages (medieval), *x*, 231n61,  
 243n23, 245n36, 248n56, 249n62,  
 252n12, 261n26, 264n43, 268n9
- Milan (Italy), *lviii*, 72–3, 206–7,  
 210–11, 254n37
- Minerva (goddess of wisdom), 160–1,  
 202–5, 242n19, 271n37, 280n53
- Mnemosyne (memory, art of),  
*xvi–xviii*, *xix*, 26–7, 60–1, 82–3,  
 228n21, 238n14, 239n25, 244n32,  
 257n55, 265n45, 280n1
- Munday, Anthony, *lx*
- Naples (Italy), *xliii–xv*, 42–3, 76–7,  
 216–17, 242n15, 268n8
- Neugebauer, Otto E., *xliiii*, *xlvi*, 231n52,  
 232n79, 277n36
- Newton, Isaac, *xii*, 263n35
- Noah (Noah's ark), 58–9, 80–1,  
 257n56
- Nola (Italy, the Nolan), *xiv–xv*, *xvii*,  
*xxii–xxiii*, *xxv*, *xxviii–xxxii*, *xxxiii*,  
*xxxv–xxxviii*, 8–9, 16–17, 22–7,  
 30–1, 34–5, 38–41, 50–61, 64–7,  
 70–1, 78–83, 86–9, 92–3, 114–15,  
 118–25, 146–61, 164–5, 182–3,  
 188–9, 200–3, 218–19, 222–3,  
 228n10, 233n2, 245nn38,39,42,  
 246n44, 250n1, 253n25, 257n56,  
 263n35, 276n24, 278n44, 279n48,  
 280nn51–2
- North Pole, *xlvi*, *xlix*
- Northumberland (Ninth Earl of),  
*xxx*, 231n58, 260n15
- Omodeo, Daniel, *xliii–l*, 227n8,  
 232nn66,78,81,88
- Olympus (Mount), *xxvii*, 130–1
- Ophir, Adi, 227n5
- Ordine, Nuccio, *lviii*, 230n38, 243n24
- Oresme, Nicholas, *xxxii*
- Orpheus (Orphics), 42–3, 202–3,  
 248n60, 280n52
- Osiander, Andreas, *xxviii–xxx*,  
 230n50, 258n9
- Ovid (Publius Ovidius Naso;  
*Metamorphoses*), 234n5, 256n49,  
 269n13, 279n51, 280n52, 281n10
- Oxford (University of) *xvii–xxii*,  
*xxvi*, *xxviii*, *xxxiii*, *xxxv–xxxvi*,



- 20–1, 154–5, 229nn24,28,29,31, 237n12, 240nn2,4, 251n7, 258n7, 270nn28,30; Balliol College, xviii; New College, xviii
- Palingenius (Marcellus Palingenius Stellatus), xii, lv
- Paris (France), xv, xviii, xxx–xxxii, 76–7, 216–17, 229n31, 234n4, 235n5, 239n25, 240n1, 244n32, 246n44, 256n54, 282n18
- Paterson, Antoinette, 238n16
- Patrizi, Francesco, xii, 231n53
- Paul III (Pope), xxviii, 259n11
- Pegasus (winged horse), x, 74–5, 214–15, 227n1, 256n50, 282n12
- Pena, Jean, xxx, 231n55
- Peripatetics (Aristotelian philosophers), 6–7, 24–5, 42–5, 118–19, 236n8, 243n27, 249n64, 254n30, 269n1
- Perkins, William, xvii, 228n20
- Petrarch, Francesco, 252n12, 254nn30,34
- Peuerbach, Georg von, xlvi
- Phidias (Greek sculptor), 30–1, 245n41
- Philolaus (the Pythagorean), 92–3, 248–9n60, 249n66, 259n12
- Pico della Mirandola, 249n60
- Pirillo, Diego, 230n34
- Planck, Max, 230n42
- Plato (Platonic), 6–7, 44–5, 126–7, 130–1, 144–5, 156–7, 230nn37,40, 231n53, 244nn32,36, 248–9n60, 249n64, 259n12, 263n36; *Cratylus*, 239n18; *Phaedo*, 265n50; *Protagoras*, 241n11; *Symposium*, xiii, xxii–xxiv, xxix, 235n5, 239n19, 241n10; *Timaeus*, xxxi, 92–3, 184–5, 259n12, 275nn16,19
- Popkin, Richard H., 246n44, 249n67
- Popper, Karl, xxv, 230n42
- Prague, xv
- precession of the equinoxes, xli–liv, 238n17, 276n31, 277nn33,36, 278nn37–8
- Priapus (god of gardens), 24–5, 243n24, 252n18
- Protestant (Protestantism), ix, xiv, xvi, xviii–xix, xxv, xxvi, xxviii, xxxvi, lviii, lx, 228n19, 230n49, 234n4, 235n5, 237nn11–12, 238n14, 249n60, 251n5, 255n44, 257n55, 258n9, 265n45, 271n33, 272n42, 282n21, 283n23
- Providera, Tiziana, lx, 228n16, 233nn1,11
- Ptolemy (Ptolomeus, *Almagest*), ix, x, xxxi, liv, 26–9, 156–7, 194–5, 231n59, 239n17, 244n36, 247n50, 263n36, 267n1, 271n36
- Pulci, Luigi, 244n31
- Pullione, Gaius Asinio, 22–5, 242–3n23
- Pyrrho (Pyrrhonian, Pyrrhonian), 46–7, 246n44, 249n67
- Pythagoras (Pythagorean), x, 6–7, 22–3, 156–7, 172–3, 235n7, 249n60, 250n70, 273n5
- Rabelais, François, 236n10, 239n19
- Rainolds, John, xviii, 229n25
- Ram, Johann (Ioannes Ramus), xvii
- Renaissance, ix, xii–xiii, xxx, xxxiii, xliii, 227n2, 229n28, 230n46, 231n53, 240n6, 243n24, 244n32, 245n37, 247n47, 248nn56,60, 249n65, 252n12, 254n34, 264n42, 265n45, 266n53, 269n11, 272n42, 273n5
- Rheticus, Georg Joachim, xxxviii

- Ricci, Saverio, 227n8, 228n11, 229n27, 246n45
- Risner, Friedrich, xxx, 260n15
- Rodomont (King of Sarza), 58–9, 252n9
- Rome (Italy), xv, lviii–lix, 76–7, 247n48, 248n55, 253n24, 256n54, 271n33, 279nn48–50, 280n51
- Rosen, Edward, 232n72
- Rossi, Paolo, 244n32
- Rothmann, Christopher, xlv
- Rowland, Ingrid D., xi, 227nn1,9, 245n39
- Sabra, Abdelhamid I., 231n57, 260n15
- Saiber, Arielle, 227n5
- Samuel (Old Testament prophet), 70–1, 254n41
- St Paul's Cathedral (London), xxxv–xxxvi, 76–7, 158–9, 216–17, 271n33
- San Domenico Maggiore (Neapolitan monastery), xiv–xv
- Sardanapalus, 7–8, 235n6
- Sassetti, Tommaso, 242n20
- Saul (King of Israel), 68–71
- Saville, Henry, xix
- Savolino, Fraulisa (mother of the Nolan), xiv
- Schiaparelli, Giovanni, xli–xliii, xlviii
- Scotland, xvii, 70–1, 130–1
- Seneca (*His Tenne Tragedies*), 235n5, 245nn35,42, 246nn43,45, 280n52
- Sextus Empiricus, 246n44, 249n67
- Sidney, Sir Philip, xvi, xxi–xxii, xxxvi, lviii, 72–3, 210–11, 230n34, 237n12, 250n1, 255nn44–6, 272n42, 281nn5–7, 283n29
- Silenus (god of wine making), 24–5, 239n19, 243n24
- Singer, Dorothea, 227n1, 232n65
- Smets, Alexis, 232n85
- Socrates, xxiii–xxiv, 235n5, 239n19
- Sondergard, Sidney L., 227n1, 230n38
- South Pole, xlix
- space (cosmic), xii–xiv, xxviii, xxxi–xxxiv, xlii, lii, liv–lv, lxiii, 10–13, 96–7, 100–3, 116–17, 120–1, 144–5, 150–3, 166–7, 172–3, 178–9, 232n65, 266, 88, 261n23, 262n35, 263n37, 264n44, 268n9, 272n1, 275n19, 276n21
- Spain, xvi, 246n45, 256n50, 282n12
- Spampanato, Vincenzo, 249n63, 251n5
- Stoics (Stoic philosophers), 6–9, 236n8
- Stow, John, xvii, 282n16, 283n26
- Strand (The, London), xxvi, 251n6, 254n32, 257n59, 280n52
- Sturlese, Rita, xx, 229n29, 231n55, 233n2, 260n11
- Swordlow, Noel, xliii, xlv, 231n52, 232n79, 277nn33,36
- Tansillo, Luigi, lvii, 30–1, 36–7, 245n39, 247n47, 253n25
- Tantalus, 6–7, 235n5
- Tarantino, Elisabetta, lviii–lxi, 233n7, 246n43, 281n5
- Taurus (constellation: the Bull), 22–3, 80–1, 242n17, 257n58
- Telesio, Bernardino of Cosenza, xxxiii, 241–2n15, 268n8, 276n21
- Tessicini, Dario, 227n6
- Thames (river), xxvi, 58–9, 62–3, 202–3, 251n6, 254n32, 280n51
- Thebes (Greece: Theban Manto), 26–7, 58–9
- Thule (island of), 32–3, 246n43
- Thyestes, 6–7, 235n5

- Tiphys (ancient helmsman), 32–3, 245n42
- Tiresias (Greek prophet), 26–7
- Tirinnanzi, Nicoletta, lix–lx, 233n9
- Tissoni, Roberto, lviii–lix, 233n5
- Tocco, Felice, xli, 232n74, 262n31, 268n8
- trepidation, xlviii, 1, liv, 192–3, 198–9, 277n33
- Trismegistus, Hermes, 248–9n60
- Ubal dini, Pietro, 242n20
- Underhill, John, xvii–xviii
- Vedrine, Hélène, 231nn53,55
- Venice (Italy), xv, 76–7, 216–17, 256n54, 282n20
- Vergil, Polydore, 240n4
- Vickers, Brian, 229n28
- Vienna (National Library of Austria), lx
- Virgil (Publius Vergilius Maro; *Aeneid, Eclogues*), 243n23, 250n71, 251–2n8, 252n10, 253nn23,29, 254nn35,39,40, 272n43, 280nn53,1,2
- Virgin Mary: *see* Mary, Virgin
- Vitelli, Cornelio, 240n4
- Wallace, William A., 231n61
- Walsingham, Sir Francis, xvi–xvii, 72–3, 210–11, 228nn19,22, 234n4, 240n25, 255n45, 281n6
- Warburg Institute (London), xi, 249n60, 254n34, 255n43, 281n4
- Westman, Robert, xxxiii, 227n8, 230nn49–51, 231n52, 232nn67,80, 258n8, 259n11
- Whitehall (London), xvi, xxi, xxiii, xxvi, 237n14, 251n6, 254n32, 283n26
- Wittenberg (Germany), xv, 258n8
- Wrightsman, Bruce, 230n49
- Yates, Frances, xi, xx, xxxiv–xxxv, xli–xlii, 227n3, 228nn19–20, 229n29, 231n58, 232nn68,75, 240n25, 244n32, 255n43, 281n4

## THE LORENZO DA PONTE ITALIAN LIBRARY

General Editors: Luigi Ballerini and Massimo Ciavolella

Pellegrino Artusi, *Science in the Kitchen and the Art of Eating Well* (2003).

Edited and translated by Luigi Ballerini and Murtha Baca.

Lauro Martines, *An Italian Renaissance Sextet: Six Tales in Historical Context* (2004). Translated by Murtha Baca.

*Aretino's Dialogues* (2005). Translated by Margaret Rosenthal and Raymond Rosenthal.

Aldo Palazzeschi, *A Tournament of Misfits: Tall Tales and Short* (2005). Translated by Nicolas J. Perella.

Carlo Cattaneo, *Civilization and Democracy: The Salvemini Anthology of Cattaneo's Writings* (2006). Edited and introduced by Carlo G. Lacaita and Filippo Sabetti. Translated by David Gibbons.

Benedetto Croce, *Breviary of Aesthetics: Four Lectures* (2007). Translated by Hiroko Fudemoto, Introduction by Remo Bodei.

Antonio Pigafetta, *First Voyage around the World (1519-1522): An Account of Magellan's Expedition* (2007). Edited and translated by Theodore J. Cachey Jr.

Raffaello Borghini, *Il Riposo* (2008). Translated by Lloyd H. Ellis Jr.

Paolo Mantegazza, *Physiology of Love and Other Writings* (2008). Edited and translated by Nicoletta Pireddu.

*Renaissance Comedy: The Italian Masters* (2008). Edited and translated by Donald Beecher.

Cesare Beccaria, *On Crimes and Punishments and Other Writings* (2008).

Edited by Aaron Thomas; Translated by Aaron Thomas and Jeremy Parzen; Foreword by Bryan Stevenson; Introduction by Alberto Burgio.

Leone Ebreo, *Dialogues of Love* (2009). Edited and translated by Cosmos Damian Bacich and Rossella Pescatori.

*Boccaccio's Expositions on Dante's Comedy* (2009). Translated by Michael Papio.

*My Muse Will Have a Story to Paint: Selected Prose of Ludovico Ariosto* (2010). Translated with an Introduction by Dennis Looney.

*The Opera of Bartolomeo Scappi (1570): L'arte et prudenza d'un maestro Cuoco (The Art and Craft of a Master Cook)* (2011). Translated with commentary by Terence Scully.

- Pirandello's Theatre of Living Masks: New Translations of Six Major Plays* (2011). Translated by Umberto Mariani and Alice Gladstone Mariani.
- From Kant to Croce: Modern Philosophy in Italy, 1800-1950* (2012). Edited and translated with an introduction by Brian P. Copenhaver and Rebecca Copenhaver.
- Giovan Francesco Straparola, *The Pleasant Nights*, Volume 2 (2012). Edited with an Introduction by Donald Beecher.
- Giovan Francesco Straparola, *The Pleasant Nights*, Volume 1 (2012). Edited with an Introduction by Donald Beecher.
- Giovanni Botero, *On the Causes of the Greatness and Magnificence of Cities* (2012). Translated and with an introduction by Geoffrey W. Symcox.
- John Florio, *A Worlde of Wordes* (2013). A Critical Edition with an Introduction by Hermann W. Haller.
- Giordano Bruno, *On the Heroic Frenzies* (2013). A Translation of *De gli eroici furori* by Ingrid D. Rowland; Text edited by Eugenio Canone.
- Alvise Cornaro, *Writings on the Sober Life: The Art and Grace of Living Long* (2014). Translated by Hiroko Fudemoto; Introduction by Marisa Milani; Foreword by Greg Critser.
- Dante Alighieri. *Dante's Lyric Poetry: Poems of Youth and of the Vita Nuova* (1283-1292). (2014) Edited, with a general introduction and introductory essays by Teodolinda Barolini. With new verse translations by Richard Lansing. Commentary translated into English by Andrew Frisardi.
- Vincenzo Cuoco, *Historical Essay on the Neapolitan Revolution of 1799* (2014). Edited and Introduced by Bruce Haddock and Filippo Sabetti. Translated by David Gibbons.
- Vittore Branca, *Merchant Writers: Florentine Memoirs from the Middle Ages and Renaissance*. (2015) Translated by Murtha Baca.
- Carlo Goldoni, *Five Comedies* (2016) Edited by Michael Hackett and Gianluca Rizzo. With an Introduction by Michael Hackett and an essay by Cesare De Michelis.
- Those Who from Afar Look Like Flies: An Anthology of Italian Poetry from Officina to the Present* (2016). Edited by Luigi Ballerini and Beppe Cavatorta. With a Foreword by Marjorie Perloff.
- Guittone d'Arezzo, *Selected Poems and Prose* (2017). Selected, translated, and with an introduction by Antonello Borra.
- Giordano Bruno, *The Ash Wednesday Supper* (2018). A new translation of *La cena de le ceneri* with the Italian text annotated and introduced by Hilary Gatti.
- Remo Bodei, *Geometry of the Passions: Fear, Hope, Happiness: Philosophy and Political Use* (2018). Translated by Gianpiero W. Doeblér.

Scipio Sighele, *The Criminal Crowd and Other Writings on Mass Society*.  
Edited, with an Introduction and Notes, by Nicoletta Pireddu.  
Translated by Nicoletta Pireddu and Andrew Robbins. With a  
Foreword by Tom Huhn.