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Thomas W. Africa

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Copernicus' Relation to Aristarchus and Pythagoras

By Thomas W. Africa*

FEW would question the existence of the Copernican Revolution for good or ill, but Copernicus was no revolutionary¹ and fancied himself the restorer of ancient wisdom, rather than the discoverer of a new astronomy. Whatever his thesis meant to others, he saw it as the foundation of a Pythagorean Restoration. In this spirit, Kepler alluded to Pythagoras as "the grandfather of all Copernicans;"² and Galileo remarked that the Papal Edict of 1616 had imposed "a seasonable silence upon the Pythagorean opinion of the mobility of the earth."³

Proud of his humanist training, Copernicus could turn Greek into Latin verse,⁴ and even advise on currency reform.⁵ His hesitation in publishing *De Revolutionibus (orbium coelestium)*⁶ has often been ascribed to fear of ecclesiastical opposition, but the theme of sacerdotal oppression is difficult to maintain in view of demonstrated papal favor. In 1536 Pope Paul III extended encouragement to Copernicus through Cardinal von Schönberg, whose communication was included in the first edition of *De Revolutionibus*.⁷ Copernicus' imperious *Letter Against Werner* (1524)⁸ and the early revelation of his unorthodox views in the *Commentariolus* (perhaps before 1514)⁹ belie any suspicion of timidity at the professional opposition of rival astronomers. The tone of Rheticus' *Narratio Prima* suggests that Copernicus' attitude toward other scientists was generally one, not of fear, but contempt.

An undistinguished observer, Copernicus lacked the concern for data and

* Louisiana State University in New Orleans.

¹ Written before the appearance of *The Sleepwalkers*, this paper is not a rebuttal, but its content should cast doubt on Koestler's view of Copernicus as a timid "moral dwarf."

² J. Kepler, letter to Michael Mästlin, 11 June 1598, *Gesammelte Werke*, ed. Max Caspar (Munich: Beck'sche, 1955), XIII, 219.

³ G. Galilei, *Dialogue on the Great World Systems*, ed. Giorgio de Santillana (Chicago: University of Chicago Press, 1953), p. 5.

⁴ His Latin rendition of Theophylactus Simocatta is reproduced by Leopold Prowe, *Nicolaus Copernicus* (Berlin: Weidmannsche, 1884), II (*Urkunden*), 45-127.

⁵ J. Taylor, "Copernicus on the Evils of Inflation and the Establishment of a Sound Currency," *Journal of the History of Ideas*, 1955, 16: 540-547.

⁶ The original title is uncertain. See E.

Rosen, "The Authentic Title of Copernicus' Major Work," *Journal of the History of Ideas*, 1943, 4: 457-474.

⁷ Prowe, I (pt. 2), 273-276. Cf. N. Koper-nikus, *Gesamtausgabe*, (Munich: Oldenbourg, 1949), II (Critical text of *De Revolutionibus*, ed. Franz and Carl Zeller), 404.

⁸ Edward Rosen's critical translation of Copernicus' *Commentariolus* and *Letter Against Werner* and Rheticus' *Narratio Prima* in *Three Copernican Treatises* (New York: Columbia University Press, 1939), is quoted in citations below. Corresponding references are made to Prowe's texts (Vol. II).

⁹ Birkenmajer noted in a 1514 inventory of the library of a Cracow doctor the remark: "a pamphlet with the view set forth that the earth moves while the sun stands still." William J. Rose, review of Birkenmajer's *Stromata Copernicana*, *Isis*, 1931, 16: 136-138.

method which partly prevented Tycho Brahe from accepting the Copernican system and permitted Kepler to transcend it. Kepler was justified in commenting that Copernicus interpreted Ptolemy rather than nature.¹⁰ Like Ptolemy, Copernicus sought to save the phenomena by divining from the errant paths of the planets the mathematical perfection which, he was convinced, was inherent in their nature; but he criticized Ptolemy for constructing a system which, while admittedly agreeing with observed data, was "neither sufficiently absolute nor pleasing to the mind."¹¹ Planetary motion in the Aristotelian scheme of interacting homocentric spheres was "perfect" (i.e., uniform, circular, and eternal), but physical and impossible to maintain against increasingly more accurate observations.¹² The Ptolemaic universe was mathematical but imperfect: planetary orbits were circular and eternal, but, lacking a common pivot, required separate centers for each orbit.¹³ The universe of Copernicus was also mathematical, built with Ptolemaic epicycles, but satisfied Aristotelian concepts of celestial motion, for all planetary orbits were ultimately based on the center of the earth's orbit (which in turn epicyclically circled the sun).¹⁴ Confined both by the Hellenic sense of limit and the Christian concept of finite creation, his universe was immense but not infinite.¹⁵ "It was enough," as Koyré remarks, "for one man to move the earth and to enlarge the world so as to make it immeasurable—*immensum*; to ask him to make it infinite is obviously asking too much."¹⁶ Inherently conservative,¹⁷ Copernicus insisted that his system was no rash innovation, but the revival of a view predating both Ptolemy and Aristotle, the lost doctrine of Pythagoras to which Plato supposedly subscribed in his old age.¹⁸

Diurnal rotation of the earth was the key to Copernicanism; he may have discussed it with Caelio Calcagnini at Ferrara.¹⁹ "He saw," according to Rheticus, "that when one motion is assigned to the earth, it may properly have other motions by analogy with the planets."²⁰ The realization that celestial motion was partly an illusion caused by a moving world had apparently provided the mental impulse which allowed Heracleides and Aristarchus to reconstruct the universe.²¹ Diurnal rotation was part of the intellectual climate in the Italian universities where Copernicus studied. At Padua, he had

¹⁰ J. Kepler, *De Motibus Stellae Martis*, II, xiv (*Gesammelte Werke*, III, 141).

¹¹ Copernicus, *Commentariolus*, (Rosen, p. 57; Prowe, II, 185).

¹² In 1538, however, Copernicus' schoolmate at Padua, Girolamo Fracastoro, attempted to revive concentric spheres, as did al-Bitruji in the twelfth century; J. L. Dreyer, *A History of Astronomy from Thales to Kepler* (New York: Dover, 1953), pp. 296-297.

¹³ See William Stahlman, "Astronomical Note on the Two Systems," appendix to Santillana's edition of Galileo's *Dialogue on the Great World Systems*, pp. 475-496.

¹⁴ Copernicus maintained that the mind "abhors" irregular planetary motion. *De Revolutionibus*, I, iv (Zeller, p. 13).

¹⁵ Grant McColley, "The Universe of *De Revolutionibus*," *Isis*, 1939, 30: 452-472, is self-refuting.

¹⁶ Alexandre Koyré, *From the Closed World to the Infinite Universe* (Baltimore: John Hopkins Press, 1957), pp. 33-34.

¹⁷ Edgar Zilsel, "Copernicus and Mechanics," *Journal of the History of Ideas*, 1940, 1: 113-118, detailed Copernicus' animistic and teleological devices, sympathetic influences, and Aristotelian motion.

¹⁸ Plutarch, *Numa*, 11.2; *Platonicae Quaestiones*, VIII, 1006C. This paper is not concerned with the vexed problem of actual Pythagorean astronomy but only with Copernicus' notions about it.

¹⁹ Grant McColley, "The Theory of the Diurnal Rotation of the Earth," *Isis*, 1936, 26:398.

²⁰ Rheticus, *Narratio Prima*, (Rosen, p. 148; Prowe, II, 330).

²¹ George Burch, "The Counter Earth," *Osiris*, 1954, 11:267-294, emphasized the imag-

attended "the leading scientific school in Europe, the stronghold of Aristotelian qualitative physics, and the trainer even of those who were to break with it."²² At Bologna he was the protégé of Domenico Maria da Novara. By 1500 Copernicus had sufficient prestige to lecture at Rome.²³ He had absorbed the scientific acumen of the Italian astronomers and the humanist conviction of an intellectual elite, which in his case was heightened by Neo-Pythagorean enthusiasms. His free-thinking Greek professor, Cordus Urceo, despised popular belief,²⁴ while his colleague at Ferrara, Pietro Pomponazzi, openly ridiculed Christianity. Copernicus was unaffected by their religious skepticism, but not immune to the humanist disdain for the multitude, epitomized in Agostino Nifo's epigram: "Loquendum est ut plures, sentiendum ut pauci."²⁵

Faithful to his humanist training, when facing the problem of increased discrepancies in the Ptolemaic system, Copernicus did not amend the established order with additional epicycles, but turned dutifully to the ancients. He was not attracted to the plural worlds of Nicholas of Cusa, whose philosophic relativism "denied the very possibility of the mathematical treatment of nature."²⁶ In his dedication to Pope Paul III, Copernicus wrote:

I carefully reread the works of all the philosophers I could obtain to see if any had ever conceived of motions of the spheres other than the conventional ones of the Schools. First I found in Cicero that Hicetas had realized that the Earth moved, and later in Plutarch that others had held the same view. I think it is appropriate to quote Plutarch here . . . : "The rest believe the Earth is stationary, but Philolaus the Pythagorean says that it moves around the Fire on an oblique circle like the Sun and Moon. Heracleides Ponticus and the Pythagorean Ecphantus also make the Earth move, not through space, but rotating about its own center like a wheel on an axis from West to East." I profited from this and also began to think of a mobile Earth.²⁷

Copernicus was not entirely frank, for his obligation to the ancients included more than simple suggestions of the earth's mobility. The nineteenth century, however, felt Copernicus to be little in "debt to the inert speculators of the classic age,"²⁸ and Dilthey saw Copernicanism as the intellectual extension of the new horizons revealed by circumnavigation of the globe.²⁹ With greater discernment, Heath took Copernicus at his word, but added that his debt was chiefly to Aristarchus of Samos, arguing from the suppressed reference in *De Revolutionibus* (I, xi, *fnis*).³⁰

Copernicus had ready access to Aristarchus' heliocentric views through

inative value of the Pythagorean mobile earth as an insight into the relativity of motion.

²² John H. Randall Jr., "Development of Scientific Method in the School of Padua," *Journal of the History of Ideas*, 1940, 1:184.

²³ Rheticus, *Narratio Prima*, (Rosen, p. 111; Prowe, II, 297; cf. Prowe, I [pt. 1], 213-289, 294-330).

²⁴ Jacob Burckhardt, *The Civilization of the Renaissance in Italy* (London: Phaidon Press, 1944), pp. 310-311.

²⁵ Quoted by John M. Robertson, *A Short History of Free Thought* (New York: G. P. Putnam, 1906), I, 360.

²⁶ Koyré, *From the Closed World to the*

Infinite Universe, p. 19.

²⁷ Copernicus, *De Revolutionibus*, *epistula dedicatoria*, (Zeller, p. 5).

²⁸ John A. Symonds, *Renaissance in Italy* (New York: Modern Library, no date), I, 339. Cf. Dreyer, *History of Astronomy from Thales to Kepler*, p. 314.

²⁹ Wilhelm Dilthey, *Weltanschauung und Analyse des Menschen seit Renaissance und Reformation*, *Gesammelte Schriften* (Leipzig, 1914), II, 258.

³⁰ Sir Thomas Heath, *Aristarchus of Samos, the Ancient Copernicus* (Oxford: Oxford University Press, 1913), p. 301.

Archimedes, Plutarch, and Aetius (Pseudo-Plutarch). Manuscripts of Archimedes' *Sand-Reckoner* circulated widely in fifteenth-century Italy,³¹ and were used by Nicholas of Cusa and Regiomontanus; the latter made marginal notes on Archimedes' discussion of Aristarchus and probably referred to it in conversations with Da Novara.³² Archimedes had cited Aristarchus' hypothesis that the earth moves in a circle about the sun, which is stationary like the fixed stars,³³ and, in the *Commentariolus* and *De Revolutionibus*, Copernicus seems to echo Archimedes' exposition of the consequent incalculable ratio between the earth's orbit and the distance to the fixed stars.³⁴ Plutarch referred twice to Aristarchus, once as "assuming that the heavens are at rest while the earth revolves along the ecliptic, simultaneously rotating about its own axis,"³⁵ and again as suggesting that the earth "spins and turns, which Seleucus afterwards advanced as an established opinion."³⁶ Both passages were familiar to any Greek scholar, and Copernicus owned George Valla's *Outline of Knowledge* (Aldus 1501) which included a translation of Plutarch's references to Aristarchus.³⁷ In the Dedication of *De Revolutionibus*, his source for the quotation on Philolaus and Ecphantus was Aetius' (Pseudo-Plutarch) *Placita Philosophorum*, which also credits Aristarchus with the view that the sun is a fixed star circled by the earth.³⁸ Copernicus knew of Aristarchus' heliocentrism but consistently concealed this knowledge, and finally deleted his one passing reference to it, from either vanity, "Pythagorean" scruples, or both.³⁹ To Copernicus, however, Aristarchus was no radical innovator, but a link with the supposed master of all true astronomy, Pythagoras of Samos. Kepler reflected this view of the apostolic succession in science when he described the Copernican system as "a new song but tuned to the ancient and still fresh lyre of Samian philosophy."⁴⁰

In the manuscript of *De Revolutionibus*, Copernicus frankly professed Pythagoreanism as he conceived it, but deleted the passage (I, xi, *finis*) from the first edition. He nevertheless considered the apocryphal *Letter of Lysis* significant enough to commend to the Pope in his Dedication, but pointedly omitted any reference to Aristarchus' hypothesis. Copernicus wrote in the suppressed passage:

³¹ George Sarton, *The Appreciation of Ancient and Medieval Science during the Renaissance* (Philadelphia: University of Pennsylvania Press, 1955), p. 141.

³² A surmise of Ernst Zinner cited by Dana Durand, "Tradition and Innovation in Fourteenth Century Italy," *Journal of the History of Ideas*, 1943, 4:9, n.19.

³³ Archimedes, *Arenarius*, 4-6 (*Opera*, ed. J. Heiberg [Leipzig: Teubner, 1913], p. 219). Melanchthon was familiar with the passage: see E. Rosen, "Galileo's Misstatements about Copernicus," *Isis*, 1958, 49: 324.

³⁴ R. von Erhardt, "Archimedes' Sand-Reckoner," *Isis*, 1942, 33: 599. Cf. Copernicus, *Commentariolus* (Rosen, p. 58; Prowe, II, 186), and *De Revolutionibus*, I, vi (Zeller, p. 16).

³⁵ Plutarch, *De facie in orbe lunae*, 923A.

³⁶ Plutarch, *Plantonicae quaestiones*, VIII,

1006C.

³⁷ Rose, review of Birkenmajer's *Stromata Copernicana*, *Isis*, 1931, 16: 138.

³⁸ Aetius (Pseudo-Plutarch), *Placita Philosophorum*, II, 24.8 (Aristarchus), III, 13.2 (Philolaus), in Hermann Diels, *Doxographi Graeci*, (Berlin: de Gruyter, 1929), p. 355, 378. Cf. Diogenes Laertius, VIII, 85.

³⁹ Copernicus cited Aristarchus on the obliquity of the ecliptic and the length of the solar year, *De Revolutionibus*, III, ii; III, vi; III, viii (Zeller, pp. 147-148, 155, 173). These references are orthodoxly geostatic, though it might be noted that Aetius had credited Pythagoras with the discovery of the obliquity of the ecliptic (Pseudo-Plutarch, *Placita Philosophorum*, II, 12.2, [Diels, pp. 340-341]).

⁴⁰ J. Kepler, *Epitome Astronomiae Copernicanae*, (*Gesammelte Werke*, VII, 9).

Though the courses of the Sun and Moon can surely be demonstrated on the assumption that the earth does not move, it does not work so well with the other planets. Probably for this and other reasons, Philolaus perceived the mobility of the earth, a view also shared by Aristarchus of Samos, so some say, not impressed by that reasoning which Aristotle cites and refutes. (*Credibile est hisce similibusque causis Philolaum mobilitatem terrae sensisse, quod etiam nonnulli Aristarchum Samium ferunt in eadem fuisse sententia, non illa ratione moti, quam allegat reprobaturque Aristoteles.*)

Copernicus associated Aristarchus and Philolaus with a view of the earth's motion other than the traditional Pythagorean scheme, ridiculed by Aristotle, with its central fire and counter-earth.⁴¹ He continued:

Yet, since only keen wits and long effort can probe such things, it was then hidden from most philosophers, and, as Plato said, only a few grasped the real cause of planetary motion.

Copernicus drew an unwarranted assumption from Plato's notion that "true" astronomy rested on intuitive reason.⁴² Aristotle had credited Plato with advocating motion of the earth about its axis,⁴³ which was not expressed in *Timaeus*, 40B, but was easily credible to Copernicus, who believed that Plato had been enlightened by Philolaus.⁴⁴ Copernicus continued:

But, if Philolaus or some Pythagorean knew, they were not likely to let posterity know, for it was not the Pythagorean way to write and reveal the philosophic arcana, but to disclose it only to true friends and thus hand it on to kindred spirits. I will here add the Letter of Lysis to prove this, and also because of its memorable sentiments. I translate it truly from the Greek: "Lysis to Hipparchus, greetings. After the death of Pythagoras, I would never have thought that the society of disciples would disband itself. Since, however, contrary to our hopes, we have dispersed as after a shipwreck, one here and one there, it is nothing less than a sacred duty to guard his divine precepts, and to communicate none of the treasures of philosophy to those who have not been regenerated by purification of the spirit. It is not fit to hand over to them what we have achieved with such great effort. Just as it is not permitted to divulge the arcana of the Goddesses at Eleusis to the profane, those who do the one or the other must be held equally impious and sinful. . . . Because he did not peddle his doctrines, (Pythagoras) never wrapped the truth in those subterfuges with which sophists muddle young minds; he was the master of all things, human and divine. Some imitators of his doctrine do impressive things, but not in the right way or as is proper for the guidance of the young, which is why they turn out impudent and boorish students. For they soil with impurity and vulgarity the pure doctrines of philosophy. It is as if one might pour pure water into a pit of muck: it disturbs the mud, and ruins the water."⁴⁵

This extraordinary passage, so incongruous in an astronomical tract, revealed Copernicus' conviction that Aristarchus and Plato shared the scientific

⁴¹ Aristotle, *De caelo*, II, xiii, 293A.

⁴² Plato, *Republic*, VII, 529D.

⁴³ Aristotle, *De caelo*, II, xiii, 293B. Cf. Plato, *Timaeus*, 40B.

⁴⁴ Copernicus, *De Revolutionibus*, I, v, (Zeller, p. 15). Cf. Plutarch *Numa*, 11.2 and Aetius (Pseudo-Plutarch) *Placita Philosophorum*, III, 13.2 (Diels, p. 378).

⁴⁵ The deleted passage is printed in Zeller's text of *De Revolutionibus*, pp. 30-31. It is also available with a French translation in Alexandre Koyré's edition of Book I of *De Revolutionibus* (Paris: Alcan, 1934), pp. 129-135. The *Letter of Lysis* digressed on the sins of the unpurified and ended damning Hipparchus for publishing Pythagorean secrets.

views of Philolaus, which were obviously not the public teachings of the Pythagorean Brotherhood, but the imagined secret doctrines of the Master, available only to the elect. In reviving the heliostatic system of Aristarchus with improved mathematical embellishments, he felt that he was restoring the Pythagorean astronomy in its purity. "My master thought," Rheticus reported, "that in order to determine the cause of the phenomena, circular motions must be ascribed to the spherical earth, following Plato and Pythagoras."⁴⁶ Kepler reminded Galileo of the injunction of "our genuine masters, Plato and Pythagoras," to avoid rash exposure of truth to vulgar scholars.⁴⁷

Copernicus took solemnly the mandate of the *Letter of Lysis* to preserve the secret doctrine in Hermetic isolation from the muddled gaze of the ignorant and unpurified. His citation of the *Letter* was no chance allusion; it was one of the school texts, from which the humanist Urceo taught him Greek and the concept of an intellectual elite.⁴⁸ It was part of the Neoplatonist apocrypha of Iamblichus, whose mystic veneration of the Sun as the visible manifestation of the supreme Helios may be reflected in the Copernican encomium:

The Sun sits enthroned in the midst of all. In this surpassingly lovely temple, could this luminary be placed in any position which would better illuminate all at once. He is justly called the Lamp, the Mind, the Ruler of the Universe.⁴⁹ Hermes Trismegistus named him the Visible God; Sophocles' Electra called him the All-Seeing. So the Sun sits as upon a royal throne, ruling the planets, his children, who circle about him.⁵⁰

The Canon of Thorn respectfully quoted the thrice-great Hermes as another custodian of ancient wisdom accessible only to the initiate.⁵¹ Rheticus recorded Copernicus' Hermetic role in his account of the master's opposition to Bishop Giese's plea to share his discovery with the world:

[He wished to] imitate the Alphonsine Tables rather than Ptolemy, and compose tables with accurate rules but no proofs. . . . True scholars, upon whom Jupiter had looked with unusually favorable eyes, would easily arrive, from the numbers set forth, at the principles and sources from which everything was deduced. . . . The ordinary astronomer would not be deprived of the use of the tables, . . . and the Pythagorean principle would be observed that philosophy must be pursued in such a way that its inner secrets are reserved for learned men, trained in mathematics.⁵²

The inner secrets, at least for Rheticus, included the questionable insight

⁴⁶ Rheticus, *Narratio Prima*, (Rosen, pp. 147-148; Prowe, II, 329-330).

⁴⁷ J. Kepler, letter to Galileo, 13 October 1597, *Gesammelte Werke*, XIII, 145.

⁴⁸ Prowe, I (pt. 1), 260; II, 129.

⁴⁹ *Luceram mundi, alii mentem (mundi), alii rectorem (mundi)* are Latin paraphrases of expressions of Hermes Trismegistus, available to Copernicus through Stobaeus, (Zeller, p. 442, Notes).

⁵⁰ Copernicus, *De Revolutionibus*, I, x, (Zeller, p. 26). "Neoplatonism is explicit in Copernicus' attitude toward both the sun and mathematical simplicity. It is an essential element in the intellectual climate that gave birth to his

vision of the universe." Thomas S. Kuhn, *The Copernican Revolution* (Cambridge, Mass.: Harvard University Press, 1957), p. 130.

⁵¹ Hermetic texts were widely circulated and translated by men of the stature of Ficino. See Paul Kristeller, *The Classics and Renaissance Thought* (Cambridge, Mass.: Harvard University Press, 1955), p. 21, and pp. 48-69. Matteo Palmieri linked Hermes with Plato, the "Attic Moses," as precursors of Christianity: Necca A. Robb, *Neoplatonism of the Italian Renaissance* (London: Allen & Unwin, 1935), p. 52.

⁵² Rheticus, *Narratio Prima* (Rosen, pp. 192-193; Prowe, II, 373).

that the course of world history was determined by the position of the solar apogee, with the fall of the Turk scheduled for 1600 and the Second Coming about 2400. Copernicus neither affirmed nor repudiated this astrologic fancy, but permitted its inclusion in Rheticus' popular summary of Copernicanism in 1540.⁵³ Jean Bodin ascribed the astrological determinism of history to Copernicus,⁵⁴ and "the Copernican system was first publically announced, if not precisely under astrologic auspices, at least to an astrological accompaniment, and . . . was for long after associated with it in many men's minds."⁵⁵

The Copernican Revolution, to which Copernicus was not party, had far-reaching philosophic and religious effects. In contrast to the medieval view that "the visible universe itself was infinitely smaller than the realm of man, . . . man begins to appear for the first time in the history of thought as an irrelevant spectator and insignificant effect of the great mathematical system which is the substance of reality."⁵⁶ As a member of a spiritual corporation committed to the salvation of men, Copernicus could not accept the doctrine of the inconsequence of man. He was not only convinced of his worth as a Christian; he felt that his status as a scientist was sacred and unique, and that scientific discoverers should heed the Platonic injunction:

I do not think that a statement of what has been attempted in this field is a good thing for man, unless it be for the very few who can be enabled, by a slight indication, to make the discovery for themselves. Of the rest, some would be puffed up with an entirely offensive spirit of false superiority; others, with a lofty and presumptuous conceit of understanding some great matter.⁵⁷

Copernicus hoarded his vision and only reluctantly released it, not through fear of rack or polemic, but because he dreaded that its "Pythagorean" purity would be contaminated by contact with lesser vulgar minds. "It is as if one might pour pure water into a pit of muck: it disturbs the mud, and ruins the water."

⁵³ Rheticus, *Narratio Prima* (Rosen, pp. 121-122; Prowe, II, 305). Rosen (p. 123, n.57) denies Copernicus' support for this idea, but Dreyer (*History of Astronomy*, p. 333) argued that Rheticus would not have included it without his master's approval.

⁵⁴ Lynn Thorndike, *A History of Magic and Experimental Science* (New York: Columbia University Press, 1941), V, 418, n.48.

⁵⁵ *Ibid.*, p. 414.

⁵⁶ Edwin A. Burt, *The Metaphysical Foundations of Modern Physical Science* (London: Routledge & Kegan Paul, 1951), p. 6 and p. 80.

⁵⁷ Plato, *Epistle*, VII, 341E, in *The Platonic Epistles*, ed. J. Harward (Cambridge: Cambridge University Press, 1932), p. 135.