

CLEOMEDES

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FORTUNA*

Cleomedes is known only as the author of a single treatise, an elementary introduction to astronomy written from a Stoic perspective and derived, in part at least, from the works of Posidonius. Thus in addition to the standard topics of spherical astronomy (Book I, chs. 2–11) and a discussion of the illumination, phases, and

eclipses of the moon (Book II, chs. 4–6), it includes an exposition of basic Stoic cosmology (Book I, ch. 1) and a lengthy polemic against the Epicurean belief that the sun is as large as it appears to be (Book II, ch. 1). It is particularly valuable for its accounts of the Stoic theory of the extracosmic void (Book I, ch. 1) and of Eratosthenes' method of measuring the circumference of the earth (Book I, ch. 10).

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The article was completed in 1985. My new Teubner edition of Cleomedes (*Cleomedis Caelestia*, Leipzig, 1990) is now published; it should be consulted for additional bibliography, more detailed information on manuscripts and editions, and further evidence of the Byzantine *fortuna*. The most important contributions to the interpretation of Cleomedes published in the interim are to be found in the relevant sections of I. G. Kidd, *Posidonius*, vol. II: *The Commentary* (Cambridge, 1988).

The date of the work is a matter of dispute. It shows no knowledge of Ptolemy's works but espouses Stoic doctrines that ceased to have adherents after the early second century A.D. It would therefore seem to belong to a period between Posidonius (ca. 135–ca. 50 B.C.), the latest author it mentions, and Ptolemy (second century A.D.). Even if we discount the neglect of Ptolemy, not altogether surprising in such an elementary work, the evidence of language (see Schumacher) certainly suggests a date no later than A.D. 200. There is, however, quantitative

evidence in a single passage of the work (106.28–108.5 Ziegler) that might suggest a date as late as the fourth century (see Neugebauer, pp. 960–61), but it remains arguable whether this can be used to offset other considerations (see Goulet, pp. 5–8).

The precise title of the treatise is somewhat uncertain. The conventional Latin title, *De motu circulari corporum caelestium*, goes back no further than H. Ziegler's edition of 1891 and is a rendering of a late Byzantine title, *Κυκλική θεωρία μετεώρων*. This was in turn a synthesis of two earlier titles, *Κυκλική θεωρία* and *Μετεώρα*, both of which may also have evolved in the Byzantine period. The subject is discussed by Goulet (p. 35) and Todd (1985).

There is no compelling evidence that Cleomedes' treatise, as opposed to the many commonplace ideas it contains, was known to any extant ancient author, or that it was translated into Semitic languages, or that it became available in the medieval West. The earliest references to it are to be found in two eleventh-century Byzantine authors, Michael Psellus (1018–79) and Symeon Seth (second half of the eleventh century). The former refers to Cleomedes by name with reference to the Stoic theory of extracosmic void both in his *De omni-faria doctrina* (secs. 120, 153; ed. L. G. Westerink [Nijmegen, 1948], 64, 79) and in his commentary on Aristotle's *Physics*.¹ Seth has clearly used Cleomedes in some passages in his cosmological treatises dealing with the sphericity of the earth and the habitability of the torrid zone.²

There are, however, no extant manuscripts contemporary with these two authors. Indeed, with at most two exceptions, the earliest Greek manuscripts belong to the period between roughly the last third of the thirteenth century and the first third of the fourteenth, when there was a considerable revival of interest in astron-

omy among Byzantine authors. The number of manuscripts involved (at least twelve) is considerably higher than that of the manuscripts extant for the same period of Geminus (first century A.D.), the author of a very similar elementary introduction to astronomy.³ This may imply that Cleomedes had acquired the status of a basic textbook of astronomy. Certainly the collection of scholia by John Pediasimus Pothus (b. ca. 1250)⁴ shows signs of pedagogical origins in its association of Cleomedean material with the content of such standard textbooks as Euclid's *Elements* and Theodosius' *Sphaerica* and also with Aristotelian logic. A notable use of Cleomedean material can also be detected in two elementary treatises from this period, the *Epitome physica* of Nicephorus Blemmydes (1197/9–1272)⁵ and the *Quadrivium* of George Pachymeres (1242–ca. 1310).⁶

Cleomedes also drew the attention of two significant figures in Byzantine scholarship of this period. Maximus Planudes (1255–1305) is the main scribe of a manuscript (Edinburgh, National Library of Scotland, Advocates 18.7.15, dated to the 1290s⁷) containing, inter alia, this work, and Demetrius Triclinius (ca. 1280–ca. 1340) probably used Cleomedes in his treatise on the phases of the moon.⁸ But the full extent

3. See G. Aujac, *Géminos: Introduction aux phénomènes* (Paris, 1975), Introd., xci–xcviii, which dates only three manuscripts to this period. For Cleomedes see my inventory in *Scriptorium*, XL (1986), 261–64.

4. This work is unedited. Twenty-two Greek manuscripts are listed by D. Bassi, "I manoscritti di Giovanni Pediasimo," *Reale Istituto Lombardo di scienze e lettere, Rendiconti*, Ser. II, XXXI (1898), 1415–16. I have added others in the inventory referred to in note 3 above.

5. PG, CXLII (1865), chs. 24–31 (between cols. 1213B and 1301D). Numerous parallels are gathered in the footnotes of this edition.

6. *Quadrivium de Georges Pachymère*, ed. P. Tannery, *Studi e testi*, XCIV (Vatican City, 1940), 367, line 4, and 369, line 26, where Cleomedes is named. Cf. also 378.10–26 Tannery with Cleomedes I.6, 52.4–27 Ziegler, and 389.17–28 Tannery with Cleomedes II.4, 190.17–192.4 Ziegler.

7. See I. C. Cunningham, "Greek Manuscripts in the National Library of Scotland," *Scriptorium*, XXIV (1970), 367–68, and A. Turyn, *Dated Greek Manuscripts of the Thirteenth and Fourteenth Centuries in the Libraries of Great Britain*, *Dumbarton Oaks Studies*, XVII (Washington, D.C., 1980), 57–59.

8. See A. Wasserstein, "An Unpublished Treatise by Demetrius Triclinius on Lunar Theory," *Jahrbuch der österreichischen byzantinischen Gesellschaft*, XVI (1967), 155, 170–71.

1. *Pselli philosophi sapientissimi in Physicen Aristotelis commentarii*, tr. Ioannes Baptista Camotius (Venice, 1553), fol. 23v. Professor L. Benakis (Athens University) has kindly verified the Greek of this passage from his forthcoming edition of this previously unedited work.

2. Cf. Seth, *Conspectus rerum naturalium* 20.4–10 Delatte with Cleomedes I.8, 82.27–84.3, and 84.9–14 Ziegler, and *De utilitate corporum caelestium* 111.1–4 Delatte with Cleomedes I.6, 56.27ff. Ziegler. (Seth's works were edited by A. Delatte, *Anecdota Atheniensia II* [Liège and Paris, 1939]).

of the Byzantine engagement with Cleomedes during the late thirteenth and fourteenth centuries will be appreciated only when the scholia in manuscripts of the period are fully studied. Preliminary investigations suggest that the scholia continued to evolve in this period and that Cleomedes' elementary expositions were regularly supplemented by scholia formulated in geometrical and numerical terms.

In the late fourteenth century and during the fifteenth century copies of Cleomedes continued to be made in considerable numbers; more than forty can be dated to this period. Significant scribes include Cardinal Bessarion (ca. 1395–1472), the scribe of Venice, Marc. gr. 333, and Demetrius Chalcondyles (1424–1511), the scribe of Naples, Biblioteca Nazionale, III E 19. This century also saw the first Latin translations. A Latin version of Pediasimus' scholia attributed to Pope Nicholas V's librarian Giovanni Tortelli (d. 1466) (in Vat. lat. 3122, fols. 9r–27v)⁹ preceded by some decades the versions of Cleomedes made by Carlo Valgulio (ca. 1450–1517) and Giorgio Valla (1447–1500) around the last decade of the century.

Cleomedes suffered from neglect in the sixteenth century. Any canonical status that he had acquired in Byzantine elementary astronomy was not maintained. A first edition of the Greek text (Paris, 1539), by an anonymous editor and based on an extremely corrupt manuscript, was reproduced four times during this century in company with Giorgio Valla's inherently deficient version based on a different, if better, manuscript. This edition represented book production rather than scholarship. The latter can perhaps best be charted through the manuscripts of both Cleomedes and Pediasimus that continued to be copied; at least eighteen of the former and fourteen of the latter can be dated after 1500. In the area of printed editions, however, Cleomedes faced competitors who offered more focused discussions of elementary astronomy. The late Byzantine extract from Geminus that went under the title of Proclus' *De sphaera* was extremely popular, particularly in Thomas Linacre's translation. There were altogether over sixty editions of this work published before

9. See G. Mercati, "I codici Vaticani latino 3122 e greco 1411," in *Opere minori* IV (= Studi e testi, LXXIX [Vatican City, 1937], 154–68) and also Kristeller, *Iter*, II, 358–59.

1600.¹⁰ The *Sphaera* of John of Sacrobosco (completed in 1244) also retained a canonical status and was regularly the subject of commentaries; there were hundreds of editions of this *Sphaera* before 1600. When this evidence is added to the documented bibliographical data on the vast number of treatises composed by authors of this period as introductions to spherical astronomy,¹¹ it is not too surprising that Cleomedes' work, with its Stoic bias, its paucity of geometrical theorems, and its polemical digressions, did not become established as a handbook. Thus when Robert Recorde, in *The Castle of Knowledge* (London, 1556), 98–99, recommends Cleomedes' treatise for pedagogical purposes, he includes it along with the works of Proclus (the *De sphaera*), Sacrobosco, Oronce Finé, and Johann Stöffler.

We can, however, still catalog some instances of its being known to, and used by, noted figures in contemporary intellectual history and gather some evidence of its contribution to works on elementary astronomy.

In the first category we know of manuscripts being owned by Pico della Mirandola (1463–94),¹² Andreas Coner (d. 1527), Gian Vincenzo Pinelli (1535–1601), Melchior Goldast (1576–1635), and Joseph Scaliger (1540–1609).¹³ Francesco Patrizi da Cherso (1529–97) owned a manuscript of Pediasimus' scholia. He also

10. See L. J. Rosàn, *The Philosophy of Proclus* (New York, 1949), 252–54, for an inventory. The editions of Linacre's translation are listed by G. Barber, "Thomas Linacre: A Bibliographical Survey of His Works," in *Linacre Studies: Essays on the Life and Work of Thomas Linacre c. 1480–1524*, ed. F. Maddison, M. Pelling, and C. Webster (Oxford, 1977), 290–336.

11. See J. E. Scheibel, *Astronomische Bibliographie*, I (Breslau, 1784), II (Breslau, 1786); F. Buisson, *Répertoire des ouvrages pédagogiques du XVI^e siècle* (Paris, 1886; rpt. Nieuwkoop, 1962); and J. C. Houzeau and A. Lancaster, *Bibliographie générale de l'astronomie grecque jusqu'en 1880*, rev. D. W. Dewhirst, I (London, 1964).

12. For Pico's manuscript see P. Kibre, *The Library of Pico della Mirandola* (New York, 1936), 126; I have not been able to identify it with one of the surviving manuscripts.

13. For Coner's manuscript see M. Clagett, *Archimedes in the Middle Ages*, III, pt. II (Philadelphia, 1978), 531; it has not yet been identified. Pinelli's manuscripts are Milan, Biblioteca Ambrosiana G 62 sup., and Z 130 sup. For Scaliger's notes in Leiden B.P.G. 107 see K. A. de Meyier, *Bibliothecae Universitatis Leidensis Codices manuscripti VIII, Codices Bibliothecae Publicae Graecae* (Leiden, 1965), 192–93. Goldast owned the present Bremen, Universitätsbibliothek b 16.

employed Cleomedes' discussion of the void in constructing his theory of space in his *Nova de universis philosophia* (Ferrara, 1591), as indeed did Pierre Gassendi in investigating the same area in the next century (see *Syntagma philosophicum* [Lyons, 1658], 187, col. 2; 188, col. 1; 189, col. 1).¹⁴ Giorgio Valla, in addition to translating Cleomedes, used the same discussion of the void in his *De expetendis et fugiendis rebus* (published posthumously, Venice, 1501) at Book XXIII.viii. Nicolaus Copernicus (1473–1543) may have known Valla's translation and used it as a source of information on the size of the earth.¹⁵ Later Johannes Kepler (1571–1630) made several references to Cleomedes' account of refraction in his treatise on optics, *Ad Vitellionem paralipomena, quibus astronomiae pars optica traditur* (Frankfort, 1604).¹⁶ And, finally, it has been shown that the neo-Latin poet George Buchanan (1506–82) used Cleomedes extensively in his cosmological poem *De sphaera* (Paris, 1585).¹⁷

No doubt this list of Cleomedes' distinguished readers could be extended, but it is important also to give some examples of his use in more prosaic contexts. Here we find his definition of the cosmos as a "combination of heaven and earth" (2.9–10 Ziegler) regularly cited in handbooks, partly because of its similarity to Ps.-Aristotle's definition in the *De mundo* (391b9–10).¹⁸ Extensive use was made of his discussion of the sphericity of the earth in Robert Recorde's

14. On Patrizi see my discussion in *Annals of Science*, XXXIX (1982), 311–14. For Gassendi's reception of a copy of Cleomedes (presumably a printed edition, though it is not clear which one), see *Lettres de Peiresc*, ed. Ph. Tamizey de Larroque, 7 vols. (Paris, 1888–98), IV (in *Collections de documents inédits sur l'histoire de France*, 2d ser. [Paris, 1893]), 178–80. Gassendi claims that Cleomedes' treatise offers a better introduction to astronomy than that of Sacrobosco. (I owe this reference to Professor H. Jones.)

15. See *Nicholas Copernicus: On the Revolutions*, ed. Jerzy Dobrzycki, tr. and commentary by E. Rosen (= *Nicholas Copernicus: Complete Works*, II [London and Baltimore, 1978], 368). Copernicus was at Bologna when Giorgio Valla's translation of Cleomedes was published (September 30, 1498) and may have used it in making a very brief reference (Book II, ch. 1; 52, line 22, edition cited) to the views of Eratosthenes and Posidonius on the size of the earth.

16. See the index to the edition in *Johannes Kepler: Gesammelte Werke*, vol. II (Munich, 1939).

17. See I. D. McFarlane, *Buchanan* (London, 1981), 372–73.

18. Ludovicus Caelius Rhodiginus (1453–1525), *Lectio- num antiquarum libri XXX* (Venice, 1516), I.v; William

The Castle of Knowledge (pp. 116, 124, 126), an elementary treatise written from a Ptolemaic standpoint. And in the *Volumen primum mathematicum* (Strasbourg, 1567) prepared for pedagogical use by the German scholar Conradus Dasypodius (ca. 1533–1600) we find Cleomedes' opening chapters quoted and translated (fols. 29v–32v) as part of a larger compilation.

One topic on which Cleomedes was an indispensable source of information was the measurement of the circumference of the earth; in Book I, ch. 10, he gives a full account of both Posidonius' and Eratosthenes' methods. Elie Vinet (1509–87) indeed refers to this part of Cleomedes' work in his commentary on Sacrobosco's *Sphaera* (ed. of Venice, 1574, p. 24), and presumably it was drawn on in more extensive treatments of the topic by such noted mathematicians as Francesco Maurolyco and Caspar Peucer.¹⁹

It was too late to salvage Cleomedes for pedagogical use when Robert Balfour (Robertus Balforeus, ca. 1550–ca. 1621), a successor to Vinet as principal of the Collège de Guyenne at Bordeaux, edited and translated Cleomedes and wrote an extensive commentary on the treatise. Balfour's work was published in 1605, and his interest in the teaching of elementary astronomy can be traced through surviving evidence of earlier public disputes that he conducted²⁰ and in a later (1620) manuscript of his general course on astronomy (Bibliothèque Municipale de Bordeaux, ms. 1588). His efforts, however, were to be the last spent on Cleomedes for nearly two centuries. When scholarly interest revived, editors would approach this author from a purely historical perspective.

Cunningham, *The Cosmographical Glasse* (London, 1559), fol. 9r; Rembertus Dodonaeus, *Cosmographica in astronomiam et geographiam Isagoge* (Antwerp, 1548; rpt. Louvain, 1963), fol. 7r.

19. F. Maurolycus, *Cosmographia* . . . (Venice, 1543), 68–69, and C. Peucer, *De dimensione terrae* . . . (Wittenberg, 1554). For modern discussions of this topic see Goulet, *Cléomède*, 78–79.

20. National Library of Scotland, Advocates ms. 6.16.2 (94). The category *Physica* of these *Pronunciata philosophica* (held in 1588) includes Cleomedean topics; e.g., no. 2 is the definition of the universe as a *compages ex caelo et terra coagmentata* (cf. no. 18 above) found at Cleomedes 1.9–10 Ziegler; nos. 3 and 4 refer to the central location of the earth in the cosmos and to the sphericity of the world, the themes of Cleomedes' Book I, chs. 8 and 9.

The first signs of such a renewed interest were shown by Ludwig Kulenkamp, a scholar at Göttingen, who around 1770–80 gathered information on several later manuscripts of Cleomedes, as well as transcribing Pediasimus' commentary and other scholia (Göttingen, Universitätsbibliothek, Philol. 64 and 65). A new edition, however, did not follow. In the meantime, Cleomedes was being used as a source of fragments in pioneering collections. G. C. F. Seidel's *Eratosthenis Geographicorum fragmenta* (Göttingen, 1789), 54–57, drew on Cleomedes I.10, and Jan Bake's *Posidonii Rhodii Reliquiae doctrinae* (Leiden, 1810) included several references to Cleomedes in this the first compilation of Posidonius' fragments. Bake's engagement with Cleomedes may have led him to publish a full edition and Latin translation of this author (Leiden, 1820). He used Kulenkamp's collations and had information on manuscripts at Leiden and Paris. The result was an eclectic text that was a vast improvement on Balfour's, in which many of the deficiencies of the *editio princeps* had remained. At the same time, Bake paid tribute to his predecessor by reprinting and augmenting his commentary. The edition produced by C. C. T. Schmidt (Leipzig, 1832) differed little from Bake's. The standard modern edition is by H. Ziegler (Leipzig, 1891), which has long been recognized as an eccentric piece of work (see Steinbrück and Goulet). Through an excessive reliance on a single corrupt manuscript (Florence, Biblioteca Laurenziana, 69.13) and an undue respect for Bake, the editor produced an eclectic text without any accompanying analysis of the manuscript tradition. It is perhaps significant that the quotations from Cleomedes in H. von Arnim's *Stoicorum veterum fragmenta* (all in vol. II, Leipzig, 1903) are from Bake's edition.

In the nineteenth and early twentieth centuries Cleomedes' treatise became part of a largely Germanic attempt (charted by Rehm, PW, XI, 1, 680–81) to reconstruct the doctrines of Posidonius. Because of a vague remark (228.1–5 Ziegler) it is not clear exactly how dependent Cleomedes was on this predecessor. But by the time of A. Boerick's dissertation, *Quaestiones Cleomedae* (Leipzig, 1905), it was being recognized that much of Cleomedes' Stoicism went back to the Stoa of Chrysippus. In two recent collections of Posidonius' fragments we do,

however, find a striking contrast in the quantity of material extracted from Cleomedes. L. Edelstein and I. G. Kidd (*Posidonius*, vol. I, *The Fragments* [Cambridge, 1972]) cite only passages where Posidonius is named, essentially Bake's policy. W. Theiler (*Poseidonios: Die Fragmente*, 2 vols. [Berlin and New York, 1982]), on the other hand, cites almost half of Cleomedes' treatise.

Work on the text itself of Cleomedes has not been extensive. K. Steinbrück's dissertation (1894) began an analysis of the manuscript tradition, but it was only with the recent work of R. Goulet (1980) that some new manuscript evidence was introduced. Though Goulet demonstrates very clearly the deficiencies of Ziegler's edition, he has not collated new manuscripts *in toto* and leaves a new edition as a desideratum (p. 21). Nevertheless, his French translation is a vast improvement on the German version of A. Czwalina (Leipzig, 1927) and more serviceable than Ziegler's Latin version.

But even with an improved text, Cleomedes' general status will not be greatly altered. He is an ancillary figure providing valuable evidence for the study of more important authors and of larger themes in Stoicism. Historically his treatise clearly underwent a brief renaissance in later Byzantine culture, but in sixteenth-century Europe it became a minor part of the vast body of available treatises on elementary astronomy.

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III. GENERAL

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Goulet (I above), 78–84, gives a bibliography both of specific studies on Cleomedes and of the numerous other works dealing with astronomy, Stoicism, and related authors in which Cleomedes is discussed. To this list should be added W. Schumacher, *Untersuchungen zur Datierung des Astronomen Kleomedes* (diss. Cologne, 1975); J. Mazères, "Cléomède, l'étude du mouvement circulaire," in *L'Astronomie dans l'antiquité classique*, ed. G. Aujac (Paris, 1979), 125–42; R. B. Todd, "A Note on Francesco Patrizi's Use of Cleomedes," *Annals of Science*, XXXIX (1982), 311–14; Todd,

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I. *DE MOTU CIRCULARI* *CORPORUM CAELESTIUM*

TRANSLATIONS

I. Carolus Valgulus

The translation of Cleomedes by Carolus Valgulus (Carlo Valgolio) was published only once, at Brescia in 1497, and this edition is likely to have received Valgolio's approval. Three of the four manuscripts may be based on it directly or indirectly. The fourth manuscript (Vat. lat. 4037) is the autograph copy; we can compare the signature at plates 22, 25, and 31 of M. Bertola, *I due primi registri di prestito della Biblioteca Apostolica Vaticana. Codici Vaticani latini 3964, 3966* (Vatican City, 1942). Bertola's edition also shows that Valgolio used the Biblioteca Vaticana between 1481 and 1498. During this period he was successively secretary to Falco Sinibaldi, the papal treasurer, and to Cesare Borgia while he was Cardinal Valentino. The dedicatory letter to the volume containing the translation of Cleomedes suggests that he may have worked on it between Sinibaldi's death (August 1492) and his becoming Cesare Borgia's secretary. It was no doubt based on a Vatican manuscript, although the only record of Valgolio's having borrowed a manuscript of Cleomedes is for May 4, 1483, when he did so "pro domino Io(anne) Argyropylo". On both internal and historical grounds a possible candidate is the present Vat. gr. 1053, but if Valgolio did use this manuscript he must have corrected it from another source. Unlike Valgolio's translations of Plutarch, that of Cleomedes was never reprinted, regrettably, because it is more accurate and based on a better manuscript than the more widely diffused version of Giorgio Valla.

Dedication (ed. of Brescia, 1497). Ad reverendissimum et clarissimum Caesarem Borgiam sanctae Romanae ecclesiae Cardinalem Valentium Charoli Valgulii Brixiani ipsius secretarii. [*Inc.*]: Cum in rebus humanis atque divinis nihil

est veritate beatius et nihil praestabilius, tum hac ipsa nil est magis abstrusum generi mortalium magisque reconditum. Quare, clarissime et excelsae Caesar Borgia, a deo summo deprecandum est ut compotes simus veritatis . . . / . . . [Expl.]: Ego vero qui post mortem clarissimi et optimi viri Falconis Sinibaldi a negotiis vacuus et liber fui, cum nulla mihi esset facultas prae me ferendi fructum aliquem meae erga sanctitatem Alex. VI servitutis, de tuenda corporis valetudine et philosophia morum libellos duos e Plutarcho in orationem latinam a me conversos illius sanctitati dedicavi. Cleomedem autem veterem philosophum de orbe terrarum, de sole atque luna, ac de rebus de quibus et docti pariter et indocti magnopere loquuntur, accuratissime et eruditissime scribentem, in linguam, ut puto, romanam verti et amplitudini splendorique tuo dedicavi, ut et illum et me humanitate ac gratia, quibus es ornatissimus, amplectens utriusque aliquam lucem afferres, meque, quem tibi et mea voluntas et clementia Alex. VI Borgiae iandiu consecravit, intelligeres summo animi ardore cup[e]re amplitudinem tuam omni genere laudis et gloriae cunctis praestare mortalibus.

Cleomedis De contemplatione orbium excelsum, Carolo Valgulo Brixiano interprete, liber primus. [Inc.]: Cum varia mundus significatione dicatur, de eo nobis suscepta oratio est qui ab ornamento atque ordine nuncupatur. Cuius definitio est huiusmodi. Mundus est constitutio caeli et terrae et naturae rerum quae intra concluduntur. . . . / . . . [Expl.]: Sed de his rebus in praesentia haec dicta sufficiant. Modo has non esse opiniones scribentis, sed tum de veterum atque iuniorum scriptis haec esse collecta, tum pleraque a Possidonio sumpta esse, intelligatur. Finis.

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(micro.) Berlin, Deutsche Staatsbibliothek, ms. Hamilton 182. Dedication copy (H. Boese, *Die lateinischen Handschriften der Sammlung Hamilton zu Berlin* [Wiesbaden, 1966], 96–97; Kristeller, *Iter*, III, 364).

(micro.) Florence, Biblioteca Nazionale Centrale, Magl. XI 10 (Kristeller, *Iter*, I, 118).

(photo.) Philadelphia, University of Pennsylvania, Van Pelt Library, Latin 13, fols. 277–338 (Bond and Faye, *Supplement*, 487; N. P. Zacour and R. Hirsch, *Catalogue of the Manuscripts in the Libraries of the University of Pennsylvania to 1800* [Philadelphia, 1965], 4).

(photo.) Vatican City, Biblioteca Apostolica Vaticana, Vat. lat. 4037, vol. II, fols. 130–153. Autograph copy (Kristeller, *Iter*, II, 366).

Edition:

1497, Brixiae (Brescia): per Bernardinum Minsintam. Also in this edition are translations of orations by Aelius Aristides and Dion of Prusa (= Dio Chrysostomus) and of two works by Plutarch. GW 7122; HC 5450; BMC VII, 911; Pell. 3847; Klebs 280.1; Flodr 130–31; Goff C-741; NUC. BL; BN; Bodleian; (MH; DLC).

Biography:

See CTC, III, 14. Add to the *Bibliography*: C. V. Palisca, *The Florentine Camerata: Documentary Studies and Translations* (New Haven and London, 1989), ch. 2 (study and English translation of the preface to Valgulo's translation of Plutarch's *De musica*).

2. Georgius Valla

Valla translated some passages from Cleomedes in the section of his encyclopedic work *De expetendis et fugiendis rebus* entitled *Physiologia*; see p. 4 above. This section was completed by 1492 (see Ruffo), though the entire work was published only posthumously at Venice in 1501. It is not known whether Valla had also completed the translation of Cleomedes by 1492, or whether it was done between that date and its publication in a composite volume of translations in 1498. It was dedicated to his adopted son Joannes Petrus Valla (later the editor of the *De expetendis*), who was at that time in the service of the duke of Ferrara.

The Greek manuscript used for most of the translation was the present Modena, Biblioteca Estense ms. α .W.3.17 (Gr. 215). This was one of Valla's manuscripts that was subsequently acquired by Alberto Pio of Carpi; it is no. 88 in the inventory of the latter's manuscripts in Vat. Barb. lat. 3108 (see J. Heiberg, *Beiträge zur Geschichte Georg Vallas und seiner Bibliothek*, Beihefte zum Centralblatt für Bibliothekswesen, XVI [Leipzig, 1896], 123, and G. Mercati, *Codici latini Pico Grimani Pio*, Studi e testi, LXXV [Vatican City, 1938], 229, and 212 n. 65). One folio (44v) of this manuscript is in Valla's hand; see V. Puntoni, "Indice dei codici greci della Biblioteca Estense di Modena," *Studi italiani di filologia classica*, IV (1896), 510–11. Since this manuscript omits 104.27–108.8

Ziegler, and since this passage appears in the translation, Valla must have consulted another manuscript; indeed, in the Modena manuscript (fol. 16r) this omission is explicitly noted by a scribe.

Valla's translation had an unfortunate publishing history, being frequently reprinted with the text of the *editio princeps* of 1539 that was based on a different manuscript. This, along with the errors reproduced from the Greek manuscript and Valla's own inadequacies as a translator, inevitably led to criticism; see R. Recorde, *The Castle of Knowledge* (London, 1556), 98, and the preface to Robert Balfour's edition of Cleomedes (Bordeaux, 1605) (p. 9 below).

Dedication (ed. of Venice, 1498). Georgius Valla Placentinus clarissimo iurisconsulto ducis Ferrariae purpurato ac praelecto iudiciorum arbitro Iohanni Vallae salutem dicit aeternam. [*Inc.*]: Cupienti mihi, Iohannes Valla doctissime iurisconsulte, nomen tuum apud inclytos principes insigne munere aliquo prosequi . . . / . . . [*Expl.*]: Age itaque et utrumque facere ne detractes, et [ut *ed.*] Cleomedem, quem tibi hospitem doctissimum conciliavi ne contempseris, et nos gentiles tuos amore prosequare.

Cleomedis Circularis inspectionis meteororum liber primus. De meteoris: Georgio Valla Placentino interprete. [*Inc.*]: Cum mundus multis dicatur modis, de mundana elegantia nunc omnis nostra futura est oratio. Mundus est ex caelo terraque necnon naturis quae eis comprehenduntur opificium . . . / . . . [*Expl.*]: Ac de his quidem in praesentia satis. Sunt vero huiusmodi exercitationes non ad gloriam aliquam comparandam traditae, sed congestae ex eis quae nonnulli prisci ac iuniores memoriae prodiderunt, plura vero ex iis quae diximus ex Posidonio huic operi ascivimus. Cleomedes de mundo feliciter explicit.

Editions:

1498, Venetiis (Venice): per Simonem Papiensem dictum Bevilacqua. Cleomedes' treatise is one of twenty Greek works translated in this volume. HC 11748; BMC V. 523; Klebs 1012.1; Polain 2800; Goff N-44; Flodr 218; NUC (under Nicephorus Blemmydes). BL; BN; (DLC; MBCo; PPC; DNLM; MiU; Cty-M; ICN).

1533, Basileae (Basel): apud Ioannem Valderum. With Guillaume Budé's translations of Aristotle, *De mundo*, and Philo, *De mundo*.

Panzer, VI, 297, No. 940; Index Aureliensis *107.936. BL; Biblioteca Nazionale Centrale, Florence; Bayerische Staatsbibliothek, Munich.

1547, Parisiis (Paris): apud Thomam Richardum. Valla's translation is the only work. Fabricius, BG, IV, 39; NUC. BL; Biblioteca Apostolica Vaticana; (N).

1547, Basileae (Basel): per Henricum Petri. Dedicatory letter omitted; Valla's translation faces the Greek text of the *editio princeps* of 1539; also includes Greek texts and Latin translations of (Ps.-) Proclus, *De sphaera*, Aratus, and Dionysius Periegetes. Graesse, V, 453; Adams P-2132; NUC (under Proclus). BL; BN; (DLC; WU; OkU; ICU; CtY).

1553, Antwerpiae (Antwerp): ex officina Ioannis Loei. Same as preceding. Graesse, II, 200; Adams P-2133; NUC (under Proclus). BL; Biblioteca Nazionale Marciana, Venice; (IaU; FU).

1561, Basileae (Basel): per Henricum Petri. Same as preceding with the addition of Ioannes Honter Coronensis, *De cosmographiae rudimentis* (see CTC, III, 39). Adams P-2134; NUC (under Proclus). BL; BN; (DLC; MiU-C; RPJCB; NNH; NN; MoSW; DFo).

1585, Basileae (Basel): per Henricum Petri. Same as preceding. *Short-Title Catalogue of German Books, 1455-1600*, 716; Adams P-2135; NUC (under Proclus). BL; Bayerische Staatsbibliothek, Munich; (DLC; Cty; NNH; NN; NcD; ScU).

Biography:

See CTC, I, 126, 224; IV, 351. Add to the *Bibliography*: Cosenza, VI, 285-86; V. Branca, ed., *Giorgio Valla: Tra scienza e sapienza* (Florence, 1981); M. Clagett, *Archimedes in the Middle Ages*, IV, pt. I (Philadelphia, 1980), 236-50; J. Mogenet, *Autolycus de Pitane* (Louvain, 1950), 22-30; P. L. Rose, "Bartolomeo Zamberti's Funeral Oration for the Humanist Encyclopaedist Giorgio Valla," in *Cultural Aspects of the Italian Renaissance: Essays in Honour of Paul Oskar Kristeller*, ed. C. H. Clough (Manchester and New York, 1976), 299-310; P. L. Ruffo, "Note sulla *Physiologia* di Giorgio Valla," *Physis*, XIII (1971), 13-21; M. Verhelst, "Le *Περὶ Ψυχῆς* de Nicéphore Blemmyde: préliminaires à une édition critique," *Byzantinische Forschungen*, IV (1972), 218-19.

3. Robertus Balforeus

The translation of Cleomedes by Robertus Balforeus (Robert Balfour) published in 1605 accompanies his edition of the Greek text, and is followed by a commentary (see below). The translation was preceded by some polemical remarks on the deficiencies of Giorgio Valla's translation, and several examples of this are given in the commentary. The edition was essentially a revision of the *editio princeps* of 1539. The information reportedly gleaned from a manuscript in Toulouse, and from adversaria in Elie Vinet's copy of the *editio princeps* (neither of which it has proved possible to trace), was not sufficient to allow Balfour to remove many of the blemishes of that earlier edition. His work nonetheless received the approbation of both Isaac Casaubon (*Epistolae* [Rotterdam, 1709], Ep. 476, p. 254) and Joseph Scaliger (*Epistolae* [Leiden, 1627], Ep. 357, p. 687).

Balfour's preface to the "Iuventus Aquitana" makes clear the pedagogical origins of this edition. As we have seen, "Astrologia" was an important element in the curriculum of the Collège de Guyenne at Bordeaux, where he had taught for well over a decade before its publication. The dedication of the translation to Guillaume Daffis, the first president of the Parlement of Bordeaux, reflects Balfour's social position as principal of the college at the time of its publication.

Balfour planned a second edition of his work in which he hoped to include a text and translation of the Byzantine commentary on Cleomedes by John Pediasimus. He corresponded on the matter with Federicus Morellus (Fédéric Morel), professor of Latin at the Collège Royal in Paris (Biography at CTC I, 162; V, 107; VI, 68), who had translated the commentary into Latin (see the letters preserved in a copy of Balfour's edition at Leiden, Bibliothek der Rijksuniversiteit, 758 C 28). Nothing came of this project.

Dedication (ed. of Bordeaux, 1605). Clarissimo amplissimoque viro Guilielmo Dafisio equiti, senatus Burdig. principi praesidi, et consistoriano comiti S.D. Robertus Balforeus. [*Inc.*]: Cleomedis Meteora, in quibus de caelo et sideribus disputatur, mea iamdudum opera non solum in nitorem aliquem repurgata verum etiam in Latinum conversa, et perpetuo commentario illustrata, ad te (Praeses ampliss.) multis de causis mittere volui . . . / . . . [*Expl.*]:

volui simul publica studia iuvare et aliquod observantiae meae perpetuique officii monumentum nominis tui memoriae sacrare. Salve Praeses C(larissime) et quod commune est bonorum omnium votum, diu multumque vale.

Preface. Iuventutem Aquitanicam et lectorem salvere iubet Robertus Balforeus. [*Inc.*]: Inter erudita antiquae Graeciae monumenta est opus hoc Περὶ κυκλικῆς θεωρίας μετεώρων a summo scriptore Cleomede nobis relictum. Quod praeter accuratissimam caelorum et siderum descriptionem, tanta doctrina tamque multiplici theorematum geometricorum varietate instructum et ornatum est ut, si in hoc genere unius Ptolemaei e veteribus scripta excipias, nihil plane in omni vetustate reperias cum eo comparandum. Quo magis dolendum id tam mala alite ex Graecia in Latium immigrasse, et tot annos una cum auctore suo ignotum iacuisse et inglorium. Sed ducis et interpretis socordia id accidisse ei scimus. Nam Georgius Valla Placentinus, qui primus illud in Latias sedes transferre et Latinae consuetudini tradere aggressus, libere dicam, tam pueriliter toto opere ineptit, et interpretatione prava tam multa saepe vana, saepe falsa, illi affingit, ut non tam illud vertere quam pervertere, nec tam Cleomedem in Latium ducere quam inde eiicere, et aeterni exilii infortunio mulcare voluisse videatur . . . nolui iuventutem astrologiae studiosam tanto studiorum adiumento diutius carere. Nec enim ex omni antiquitate alium ad astronomiae elementa recte percipienda vel domi privatim legi vel in scholis publice doceri maiori cum fructu posse spero. Quae res una effecit ut quicquid temporis succisivi mihi habui, id omne Cleomedi recensendo et [in] Latinum vertendo dudum impenderem . . . Ab initio duo solum exemplaria habui quorum alterum Parisiis omnium primum, ut puto, anno 1539 cusum est, alterum Basileae anno 1561, ambo parili errorum numero mendosa et plane gemina ut commissa in uno peccata ex altero transfusa et descripta facile iudicares . . . misi exemplar meum Tholosam ad D. Cadanum ut illud cum manuscripto eo [sc. in divite illa bibliotheca illustrissimi Cardinalis Ioyosii] conferret . . . et si exemplar illud integrum fuisset et non aliquot foliis in fine defectum, plane me et Cleomedem meum beasset. Accessit etiam praeter expectationem aliud a Ioanne Voysino, viro graece iuxta et latine docto, auxilium. Ille, qua est humanitate et in me amore, librum suum

benigne utendum mihi dedit, in cuius ora olim eruditus ille senex Elias Vinetus, ex nescio quo veteri exemplari, variantes omnes lectiones sua manu notavit . . . / . . . [Expl.]: doctis candidisque lectoribus aestimandum relinquimus, quos salvere iubeo et vos etiam, tenelli Aquitaniae surculi, valere multum admodum cupio et in virtute ad gloriam crescere.

Cleomedis De contemplatione orbium coelestium libri duo. [Inc.]: (p. 1) Cum mundus multis modis dicatur, de eo qui ab ornatu ita appellatur, nunc nobis instituta oratio est, quem ita definiunt. Mundus est qui ex coelo terraque constat, et naturis quae intra ea continentur . . . / . . . [Expl.]: (p. 126) Ac lucubrationes quidem hae non ipsius scriptoris opiniones complectuntur, sed ex commentariis tam veterum quam recentiorum collectae sunt. Multa vero eorum quae diximus ex Posidonio decerpta sunt. Finis.

Edition:

1605, Burdigalae (Bordeaux): apud Simonem Milangium. NUC. BL; BN; (CtY; CtY-M; DLC; DWB; MH; OCU; PPL; PPULC; WU).

Biography:

Robertus Balforeus (Robert Balfour) matriculatus at the University of St. Andrews in his native Fifeshire, Scotland, in 1571; the date of his birth is not known. He later taught at St. Andrews before, like numerous other Catholic Scots of the period, emigrating to France. After some time in Paris, he moved to Bordeaux to teach at that city's prestigious Collège de Guyenne, where he spent the remainder of his career. He held a chair in philosophy and after 1592 a special chair in mathematics that had been endowed by the noted mathematician and student of Hermeticism, François Foix de la Candale. Balfour became principal of the Collège de Guyenne in 1602 and held this position until 1621. The exact date of his death is not known.

As professor of philosophy Balfour gave courses principally on Aristotle. His lectures for 1587–89 survive in manuscript (Edinburgh, National Library of Scotland, ms. 2236), and he subsequently published two volumes of commentary on the *Organon* and *Nicomachean Ethics* (Bordeaux, 1618–20). His more general courses survive in a manuscript dated to 1620 (Bordeaux, Bibliothèque Municipale, ms. 1588) and include an *Epitome Astrologiae*. His Catholicism is reflected in an edition of works dealing

with the Council of Nicea by Gelasius and Theodore (Paris, 1599; Heidelberg, 1604).

Bibliography:

C. H. Lohr, *Studies in the Renaissance*, XXI (1974), 259; to the references given there should be added DNB, I, 977–78; D. Buchanan, *De scriptoribus Scotis libri duo* (a seventeenth-century manuscript first printed at Edinburgh, 1837), 129–30; T. Dempster, *Historia ecclesiastica gentis Scotorum libri XXX* (Bologna, 1627), 119; A. I. Dunlop, ed., *Acta Facultatis Artium Universitatis Sanctiandree, 1413–1588* (Edinburgh and London, 1964), 438, 441, 443, 445; E. Gaullieur, *Histoire du Collège de Guyenne* (Paris, 1874), ch. XXIV; Francisque-Michel, *Les Écossais en France, les Français en Écosse*, 2 vols. (London, 1862), II, 196–203.

COMMENTARY

a. Robertus Balforeus

Balfour's commentary was published along with the text and translation described above. It is remarkably erudite, demonstrating acquaintance not only with ancient, medieval, and contemporary astronomical literature but also with a wide variety of ancient literature and its later exegesis. Copernicus' *De revolutionibus* is referred to (pp. 175, 278), though without any influence on Balfour's Ptolemaic orthodoxy. It was probably the erudition of this commentary that won Balfour the praise of Joseph Scaliger and Isaac Casaubon; see, for example, I. Casaubon, *Epistolae* (Rotterdam, 1709), Ep. 490. Its republication with some additions by J. Bake in his edition of 1820 was a genuine indication of its quality.

As with the translation and text, the dedicatee is a prominent public figure, in this case Jacobus Montanus (Jacques de Mons), the royal *conseiller* in the court of the parlement of Bordeaux.

Dedication (ed. of Bordeaux, 1605). Viro clarissimo Iacobo Montano in curia Burdigalensi consiliario regio Robertus Balforeus S.D. [Inc.]: (p. 130) In astrologicis hisce scriptis (clarissime Montane) amicam me tui et gratam mentionem facere Gratiae ipsae iuebant . . . / . . . [Expl.]: (p. 130) ut Gratiae ipsae, quae in sinu tuo suaviter cubant, me gratissimum erga te et tui observantissimum esse cognoscerent. Vale, vir clarissime, et Balforeum tuum amare porro perge.

Roberti Balforei Scoti in Cleomedis Meteora

commentarius. [Inc.]: (p. 131) Pag. I. Κλεομήδους [2.1 Ziegler]. De Cleomede pauca admodum quae dicam habeo. Patria, parentes, genus, incerta mihi omnia . . . / . . . [Expl.]: (p. 284) In coniunctione sua cum sole summam epicycli sui absidem tenent, sed in oppositione imam. Vers. 16. π ς η [226.23 Ziegler]. Error in hac numeri nota est, scribe τ ς η. Finis.

Editions:

1605, Burdigalae (Bordeaux). See under translation.

1820, Lugduni Batavorum (Leiden): apud S. et J. Luchtmans. In J. Bake, ed., *Cleomedis Circularis doctrinae de sublimibus libri duo*, with some additions.

ADDENDA

p. 3a29.

The first edition of the Greek text of Cleomedes is described in P. Renouard, *Imprimeurs & libraires parisiens du XVI^e siècle*, V (Paris, 1991), 101–2.

p. 3b, n. 11.

See also F. R. Johnson, “Astronomical Textbooks in the Sixteenth Century,” in *Science, Medicine and History*, ed. E. A. Underwood, I (Oxford, 1953), 285–302; at p. 3b4–5 above, I follow Johnson’s estimate (pp. 293–94) of sixteenth-century editions of Sacrobosco.

p. 3b, n. 13.

To the list of Pinelli’s manuscripts add Milan, Biblioteca Ambrosiana D 54 sup.; see M. Grendler, “A Greek Collection in Padua: The Library of Gian Vincenzo Pinelli (1535–1601),” *Renaissance Quarterly*, XXXIII (1980), 386–416 at 413–14.

p. 4a, n. 15.

On Copernicus’ use of Giorgio Valla’s translation of Cleomedes see E. Rosen, “Nicholas Copernicus and Giorgio Valla,” *Physis*, XXIII (1981), 449–57 at 452–55.

p. 5b, Bibliography, I.

R. B. Todd, “Physics and Astronomy in post-Posidonian Stoicism,” *Aufstieg und Niedergang der römischen Welt*, II.37.4 (in press), where modern scholarship on Cleomedes is discussed in more detail, and existing bibliographies are augmented.

p. 7b34ff.

On Valla’s manuscript of Cleomedes see Rosen (cited above in the Addenda to p. 4a, n. 15), 454–55.

p. 10a21.

The Bordeaux edition of 1605 is described in L. Desgraves, *Bibliographie des ouvrages imprimés par Simon Milanges 1572 à 1623* (Bordeaux, 1951), 91–92.