

## *Chapter 7*

### *The Early Church and Science*

Before we complete our survey of the teachings of the early church on the early chapters of Genesis it is necessary to discuss a number of general scientific issues that often crop up. One of the most frequent criticisms of the church fathers is made about their anti-intellectualism. Tertullian is the church father who more than any other has been taken to epitomise this view.

Tertullian wrote:

For philosophy is the material of the world's wisdom, the rash interpreter of the nature and dispensation of God. Indeed heresies are themselves instigated by philosophy... What indeed has Athens to do with Jerusalem? What has the Academy to do with the Church? What have heretics to do with Christians? Our instruction comes from the porch of Solomon, who had himself taught that the Lord should be sought in simplicity of heart. Away with all attempts to produce a Stoic, Platonic, and dialectic Christianity! We want no curious disputation after possessing Christ Jesus, no inquisition after receiving the gospel! When we believe, we desire no further belief. For this is our first article of faith, that there is nothing which we ought to believe besides.(1)

Three facts that lie behind Tertullian's rhetoric that are seldom considered:

1. Greek philosophy was “an amalgam of rival world-views, based on premises that are very different from the biblical revelation.”(2) Their failure to establish any means of accountability to allow the resolution of disputes was already appreciated by Diodorus (c.90-21 BC), Galen (c.130-200 AD) and Claudius Ptolemy (2nd cent. AD) (and other leading thinkers of the 2nd century).(3)
2. Tertullian believed that “heresies are themselves instigated by philosophy,”(4) Plato and Aristotle being responsible for Valentinian Gnosticism.(5) David Lindberg argues that “what he therefore opposed was not philosophy generally, but heresy or the philosophy that gave rise to it.”(6)
3. Tertullian himself made use of philosophical (particularly Stoic) ideas in his writings.(7) He agreed with Plato on the matter of the immortality of the soul.(8) He even claimed (as Philo and Justin Martyr had before him) that the philosophers borrowed from the Jewish Scriptures.(9) Like all writers, he assumed that he was able to write theology without incorporating his own presuppositions.(10)

The statement cited above must be viewed in the context of his other works:

Elsewhere Tertullian does not always speak in such robust terms of an unbridgeable chasm separating

Athens and Jerusalem. He was as well educated as anyone of his time: a competent lawyer, able to publish his writings in both Latin and Greek with equal facility, acquainted with the current arguments of the Platonic, Stoic and Aristotelian schools and also possessing some knowledge of medicine.(11)

Finally, Tertullian's argument "I believe it because it is absurd"(12) has been shown to be a misquotation, but more importantly it is an example of a standard Aristotelian argumentative form. Put simply what Tertullian is actually saying is that

...the more improbable an event, the less likely is anyone to believe, without compelling evidence, that it has occurred; therefore, the very improbability of an alleged event, such as Christ's resurrection, is evidence in its favour. Thus far from seeking the abolition of reason, Tertullian must be seen as appropriating Aristotelian rational techniques and putting them to apologetic use.(13)

Indeed, in his *Apology* he demonstrated his familiarity with at least thirty literary authorities, which he probably had read first hand, rather than by referring to a handbook of quotations.(14)

The modern idea that science and religion are contradictory has its origins in the work of John William Draper (1811-1882), especially his *History of the Conflict Between Religion and Science*, published in 1874.(15) A participant in the debates in the British Association and a witness of the confrontation between Thomas Huxley and Bishop Samuel Wilberforce, Draper attempted to read that debate and his own evolutionary presuppositions back into history. Draper's revisionist interpretation was followed by that of Andrew Dickson White (1832-1918) who produced a two volume work on the same theme.(16) White pictured the Greek philosophers as forerunners of evolutionary theory,(17) an argument which has been repeated many times since by both evolutionists(18) and creationists.(19) He popularised the idea that Christianity and science have been locked in conflict since the dawn of civilisation, claiming that the rise of Christianity was responsible for the demise of Greek science.(20)

Contrary to the views of White and his followers, most the 'science' practised by ancient Greeks has little in common with what we would call science today. It was not based on deductive reasoning, but on guesswork and often on alleged revelations from the 'gods'.(21) In fact

...there was nothing in antiquity corresponding to modern science as a whole or to such branches of modern science as physics, chemistry, geology, zoology, and psychology. The subject matters of these modern disciplines all belonged to natural philosophy and thus to the larger philosophical enterprise.(22)

So while the Greek scientific theories concerning origins were a step forward from the myths they replaced, there is a vast gulf between them and modern science. Robert M. Grant,(23) David C. Lindberg(24) and D.S. Wallace-Hadrill(25) all provide a more balanced view of the early church's treatment of scientific matters. The situation is not a simple as the followers of Draper and White would have us believe. Several points should concerning the early church fathers' attitude to the physical world:

- The early church writers were not scientists in the sense that the term could be used of Aristotle, Theophrastus or Galen.(26)
- The early church fathers differed greatly in their attitude to Greek philosophy and

science.(27) Some (such as Tatian) rejected the study of nature completely when it descended to the level of unverifiable speculation(28) or when it became trivial and irrelevant.(29) However, that did not prevent them recounting popular fables as fact.(30) Others (such as Basil of Caesarea) sought to incorporate knowledge from the natural world with biblical revelation.

- Christians of the Neoplatonist school (Clement of Alexandria and Origen) downplayed the value of science, because it related only to the physical world and not to higher realm of the spirit.(31)
- Almost all of the fathers drew examples from the science of their day in their preaching and teaching.(32) Following the principle of Psalm 19:1 that “The heavens declare the glory of God...” each looked on the natural world as a vast repository of illustrations and examples.(33) Their goal was to communicate the faith, not to teach science, but science could be used as a tool to teach the faith.
- None of the fathers saw contemporary science as a threat to the faith.(34) They felt free to reject what they thought was false teaching.(35)
- The church fathers’ references to nature were derived from accepted thinking and folklore of their day.(36) The accuracy of their statements had more to do with their sources than the individual writer’s spirituality or quality of biblical exegesis.
- It was the doctrine of creation as the work of God that guaranteed that the understanding of the natural world would remain of some, if only of minor, importance to Christian theology.(37)

From the above it is clear that is an oversimplification to blame the church for the decline of Greek science. The evidence is that the decline was due to variety of causes, including Neoplatonism with its emphasis on the unseen world.(38) Scientific pursuits were the domain of those who could afford to spend time in speculation,(39) offering little practical benefit to society as a whole. As the Roman empire declined economically the number of people who could afford to pursue scientific endeavours shrank.(40) Greek science failed because it ceased to meet the psychological needs of the majority: a vacuum that Christianity filled.(41) Seen as part of a range of causes for the demise of Greek science it is less easy to make sweeping accusations. It could even be argued that Christianity did more for the study of nature than the prevailing Platonic philosophy.(42)

## *The Early Church & The Flat Earth*

The vast majority of the church fathers accepted without question the commonly accepted belief that the world was spherical in shape which had been maintained by the Greeks since the fourth century BC.(43) Basil of Caesarea wrote that the shape of the earth was of no great importance

compared with other things that the Scriptures are clear about.(44) Even if such matters were of no importance to him, he seems to have accepted the generally held view that the universe consisted of a series of concentric circles, which the spherical earth lying at the centre.(45)

Only Lactantius explicitly rejected sphericity, although there is some indirect evidence from later writers that Theodore of Mopseustia (c. 350 - 430) and Diodore of Tarsus (d. 394) may also have done so.(46) The surviving works of Lactantius have played an important part in the development of what J.B. Russell calls “the flat error” - the false idea that the early and mediaeval church taught that the earth is flat.(47) The reason for this was because he linked the a rejection of belief in *antipodes* (the existence of a country on the other side of the world) with the shape of the earth.(48) The question of the existence of the *antipodes*(49) had posed a problem for all Christian theologians. Russell, who has researched the “flat error” in some detail, explains:

Christian doctrine affirmed that all humans must be of one origin, descended from Adam and Eve and redeemable by Christ, “the Second Adam.” The Bible was silent as to whether antipodeans existed, but natural philosophy had demonstrated that if they did, they could have no connection with the known part of the globe, either because the sea was too wide to sail across or because the equatorial zones were too hot to sail through. There could be no genetic connection between the antipodeans and us. Therefore any alleged antipodeans could not be descended from Adam and therefore could not exist.(50)

Clement of Rome alluded to the antipodes when he wrote: “The ocean - impassable by men - and the world beyond it are directed by the same ordinances of the Master.”(51) He clearly believed that even though it was impossible to reach the antipodes from where he lived the people shared a common Lord.(52) Lactantius, however, ridiculed the idea of people living on the other side of the earth and (perhaps reacting against his pagan background) went on to reject the idea that the earth could be spherical. In a famous passage in *Divine Institutes* he asks:

...is there any who are so senseless as to believe that there are men whose footsteps are higher than their heads? or that the things which with us are in a recumbent position, with them hang in an inverted direction? that the crops and trees grow downwards? that the rains, and snow, and hail fall upwards to the earth?(53)

On the existence of the *antipodes* Augustine was also sceptical, but his doubts did not lead him to the extreme of dismissing the idea of a spherical earth. Indeed, he specifically referred to it as a globe,(54) but found no evidence in Scripture for a race of men living on the other side of the world. The journey to that region, even if there is land there, would prove to be too great.(55) Russell demonstrates convincingly that although much has been made of Lactantius’ statements, he was virtually ignored by later writers and suspected of heresy in regards to his Christology. It was only his “excellent Latin style” that caused interest in his to be revived during the Renaissance.(56)

## *The Earth Church and Spontaneous Generation*

**Table 7.1: Early Church Writers Who Accepted Spontaneous Generation**

Date	Name	Reference
185-253	Origen	<i>Celsus</i> 4.57
329-379	Basil of Caesarea	<i>Hexameron</i> , 7.1; 9.2
354-430	Augustine	<i>City</i> 15.27; 16.7

Apparently following the generally accepted opinion, held also by Pliny the Elder (AD 23 -79), Ovid (43 BC - c. AD 17) and Aelian (AD 170-235), Origen accepted that certain animals are spontaneously generated from dead bodies:

...it is not wonderful that at the present time a snake should be found out of a dead man, growing out of the marrow of his back,(57) and that a bee should spring from an ox,(58) and a wasp from a horse,(59) and a beetle from an ass, and, generally, worms from the most of bodies.(60)

He even appears to suggest that the first men might have been spontaneously generated, citing the beliefs of the Greeks as support for his view. However, the reference is unclear and his acceptance of the view appears to have been tentative.(61)

As far as we can tell, the majority of the people of the ancient world believed in spontaneous generation, including some of the early church fathers (to a limited degree). See Table 7.1. However, the assumption that they were therefore evolutionists in the modern sense is unwarranted.(62) Rather, it is the result of reading back todays popular idea of a scientist as a totally objective white-coated empiricist into the ancient world. Such a person is as much a caricature today as he or she would have been 2,500 years ago. We have seen how the father's derived their scientific views from the works of natural history of their day, particularly those of Aristotle. Aristotle taught spontaneous generation, but also believed in the fixity of species and did not conceive of any development from one species to another during spontaneous generation.(63)

Interestingly Eusebius of Caesarea specifically rejected the idea of spontaneous generation because he saw it as incompatible with the Hebrew account of the creation of man by God - an event which did not take place by chance.(64)

## References

- (1) Tertullian, *Heretics*, 7 (Stevenson, 166-167).
- (2) Colin Brown, *Christianity & Western Thought*, Vol. 1. (Leicester: Apollos, 1990), 91.
- (3) Christopher B. Kaiser, *Creation & The History of Science*. (London: Marshall Pickering, 1991), 4. Kaiser continues: “The long-range welfare of natural science depended on the development of an ecumenical community of scholars dedicated to the pursuit of truth. This ideal was appreciated by the leading thinkers of antiquity, but the needed substructure was not available... the ecumenical foundation of modern science was to be provided by the monastic movement of the Middle Ages, a movement based on the very discipline that was advocated by Irenaeus and Tertullian. Such are the ironies of history.” See further 34-51.
- (4) Tertullian, *Heretics*, 7 (ANF, Vol. 3, 246).
- (5) Brown, 91.
- (6) David C. Lindberg, “Science and the Early Church,” David C. Lindberg & Ronald L. Numbers, eds. *God & Nature: Historical Essays on the Encounter Between Christianity and Science*. (Berkeley & Los Angeles: University of California Press, 1986), 26.
- (7) Brown, 91.
- (8) Tertullian, *Resurrection* 3.2 (ANF, Vol. 3, 547); Richard A. Norris, *God and World in Early Christian Theology: A Study in Justin Martyr, Irenaeus, Tertullian and Origen*. (London: Adam & Charles Black, 1966), 86.
- (9) Tertullian, *Apology* 47.1; *Flesh* 9.2 (ANF, Vol. 3, 51-52, 531-532). Norris, 86.
- (10) Stuart G. Hall, *Doctrine and Practice in the Early Church*. (London, SPCK, 1991) 69. For a full discussion of Tertullian’s use of Stoic arguments see: Jean Daniélou, *The Origins Of Latin Christianity*. (Philadelphia: Westminster Press, 1980), 209-223.
- (11) Henry Chadwick, *Early Christian Thought and the Classical Tradition*. (Oxford: Clarendon Press, 1966), 2.
- (12) Tertullian, *Flesh*, 5 (ANF, Vol. 3, 525). The same idea recurs several times in his writings.
- (13) Lindberg, 26.
- (14) T. D. Barnes, *Tertullian: A Historical and Literary Study*. (Oxford: Clarendon Press, 1971), 196-199. The full list of authorities used in Tertullian’s *Apology* is: “Pliny the Younger, Herodotus, Ctesias, Diodorus and Thallus, Cassius Severus and Cornelius Nepos, Pythagoras and Plato, Pindar, the Cynics Diogenes and Varro, Cornelius Tacitus, Aristeas, Manetho the Egyptian, Berossus the Chaldean, Hiram of Tyre, Ptolemy of Mende, Menander of Ephesus, Demetrius of Phalerum, King Juba of Mauretania, Apion and his adversary Josephus, the stoics Zeno and Cleanthes, Plato again and again, Epicurus, Hostilius, Laberius and Lentulus (three writers of mimes), Cicero and Seneca, Pyrrhon and Callincus.”
- (15) John W. Draper, *The History of the Conflict Between Religion and Science*. (London: Henry S. King & Co., 1875). Russell, Jeffrey Burton *Inventing the Flat Earth: Columbus and Modern Historians*. (New York: Praeger, 1991), 41: “Draper’s *Conflict* was the best selling volume of the International Scientific Series; in the United States it had fifty printings in fifty years, in the United Kingdom twenty-one in fifteen years; and it was translated worldwide.” Italics in original.
- (16) Andrew Dickson White, *A History of the Warfare of Science With Theology in Christendom*, 2 Vols. (London:

MacMillan & Co., Ltd., 1896).

(17) White, *Warfare*, Vol. 1, 14: "Striking, also, was the effect of this idea [of Evolution] as rewrought by the early Ionian Philosophers, to whom it was probably transmitted from the Chaldeans through the Phoenicians. In the minds of Ionians like Anaximander and Anaximenes it is most clearly developed: the first of these conceiving of the visible universe as the result of processes of evolution and the latter pressing further the same mode of reasoning.,, and dwelling on agencies in cosmic development recognised in modern science. This general idea of evolution in Nature thus took strong hold upon Greek thought and was developed in many ways, some ingenious, some perverse. Plato, indeed, withheld it; but Aristotle sometimes developed it in a manner which reminds us of modern views."

(18) Henry Fairfield Osborn, *From The Greeks to Darwin: An Outline of the Development of the Evolution Idea*. (London: Charles Scribner's Sons, 1927); Sir William Cecil Dampier, *A History of Science and its Relations With Philosophy and Religion*. (Cambridge: CUP, 1966); Ernest L. Abel, *Ancient Views on the Origins of Life*. (Rutherford, New Jersey: Fairleigh Dickinson University Press, 1973).

(19) Malcolm Bowden, *The Rise of the Evolution Fraud*. (Bromley: Sovereign Publications, 1982), 4-5; N.J. Mitchell, *Evolution and the Emperor's New Clothes*. (Diss: Roydon Publications, 1983), 17-18; Louis Lavallee, "The Early Church Defended Creation Science," *ICR Impact*, No. 160. (1986): i; John V. Collyer, "Early Roots of the Theory of Evolution," *Creation: The Journal of the Creation Science Movement*, Vol. 6.8 (1991): 4-5.

(20) For an illuminating discussion see: David C. Lindberg & Ronald L. Numbers, *God & Nature*. (Berkeley: University of California Press, 1986), 1-18.

(21) Lindberg, 21.

(22) Lindberg, 21.

(23) Robert M. Grant, *Miracle and Natural Law in Graeco-Roman and Early Christian Thought*. (Amsterdam: North-Holland Publishing Co., 1952).

(24) Lindberg, 19-48

(25) D.S. Wallace-Hadrill, *The Greek Patristic View of Nature*. (Manchester: Manchester University Press, 1968).

(26) Wallace-Hadrill, 3.

(27) Grant, *Miracle*, 90: "On the one hand, we find militant attacks upon science and philosophy, usually based on Academic scepticism and ringing no changes on the old themes. On the other hand, we find enthusiastic support for science which usually reflects stoic philosophy."

(28) Tatian, *Address 26*.

(29) Tatian, *Address 27*. Wallace-Hadrill, 5.

(30) Tatian, *Address 20*.

(31) Wallace-Hadrill, 7-8.

(32) Augustine, *The Literal Meaning of Genesis* 1.19.39, trans. John H. Taylor, "St Augustine, The Literal Meaning of Genesis," Johannes Quasten, Walter J. Burghardt & Thomas C. Lawler, eds. *Ancient Christian Writers: The Works of the Fathers in Translation*, No. 41. (New York: Newman Press, 1982), 42-43.

(33) Wallace-Hadrill, 8-9.

(34) Wallace-Hadrill, 4.

(35) For example, Theophilus of Antioch rejected the Chronology of Apollonius the Egyptian because it conflicted with biblical revelation. *Autolycus* 3.16 (*ANF*, Vol. 2, 116). Wallace-Hadrill, 17.

(36) Wallace-Hadrill, 8-9, 34-36.

(37) Lindberg, 32.

(38) Lindberg, 30-31.

(39) Benjamin Farrington, *Greek Science*, 2nd edn. (London, 1949), 302, cited in Wallace-Hadrill, 4.

(40) Lindberg, 33: “The study of nature held a very precarious position in ancient societies; with the exception of medicine and a little astronomy, it served no practical function and was rarely seen as a socially useful activity.”

(41) Grant, *Miracle*, 120.

(42) Lindberg, 33, n.58.

(43) Jeffrey Burton Russell, *Inventing the Flat Earth: Columbus and Modern Historians*. (New York: Praeger, 1991), 24, 70.

(44) Basil of Caesarea, *Hexameron*, 9.1 (*NPNF*, 2nd series, Vol. 8, 101-102).

(45) Basil of Caesarea, *Hexameron*, 1.10; 3.4 (*NPNF*, 2nd series, Vol. 8, 55, 67).

(46) Russell, *Inventing*, 23.

(47) Russell, *Inventing*, 32.

(48) Pliny the Elder (23-79 AD) notes that it was the common belief in his day that the world was a globe. Pliny, *Natural History* 2.2.5; 2.65.161-166; trans. H. Rackham, *LCL*, Vol. 1. (London: William Heinemann Ltd., 1988), 173, 297-301.

(49) Russell, *Inventing*, 20: “...land on the opposite side of the planet or, more commonly, *human inhabitants* of lands on the other side of the planet.”

(50) Russell, *Inventing*, 20.

(51) Clement of Rome, *1 Clement* 20.8; J.B. Lightfoot, translator, *The Apostolic Fathers*, Edited & Revised by Michael W. Holmes, 1989. (Leicester: Apollos, 1996), 40.

(52) Harold P. Nebelsick, *Circles of God: Theology and Science from the Greeks to Copernicus*. (Edinburgh: Scottish Academic Press, 1985), 90.

(53) Lactantius, *Institutes*, 2.24; *Epitome*, 39 (*ANF*, Vol. 7, 94, 237).

(54) Augustine, *Literal* 2.13.27 (Taylor, No. 41, 64).

(55) Augustine, *City*, 16.9 (Bettenson, 664).

(56) Russell, *Inventing*, 32.

(57) Pliny the Elder, *Natural History* 10.86: “We have it from many authorities that a snake may be born from the

spinal marrow of a human being.”; Ovid, *Metamorphoses* 25 (385-390); Aelian, *CA*, 1.51 (Trans. A.L. Scholfield, *LCL*, Vol. 1. [London: William Heinemann Ltd., 1971], 71)

(58) Ovid, *Metamorphoses* 25 (365-375); Aelian, *CA*, 2.57 (Scholfield, 155).

(59) Ovid, *Metamorphoses* 25 (360-370); Aelian, *CA*, 1.28 (Scholfield, 47)..

(60) Origen, *Celsus*, 4.57 (*ANF*, Vol. 4, 524).

(61) Origen, *Celsus*, 1.37 (*ANF*, Vol. 4, 412); Robert M. Grant, *Miracle and Natural Law in Graeco-Roman and Early Christian Thought*. (Amsterdam: North-Holland Publishing Co., 1952), 108.

(62) For an illuminating discussion see: David C. Lindberg & Ronald L. Numbers, *God & Nature*. (Berkeley: University of California Press, 1986), 1-18.

(63) Lindberg, 21.

(64) Eusebius, *Preparation*, 7.17 (Gifford, Part 1, 358).

