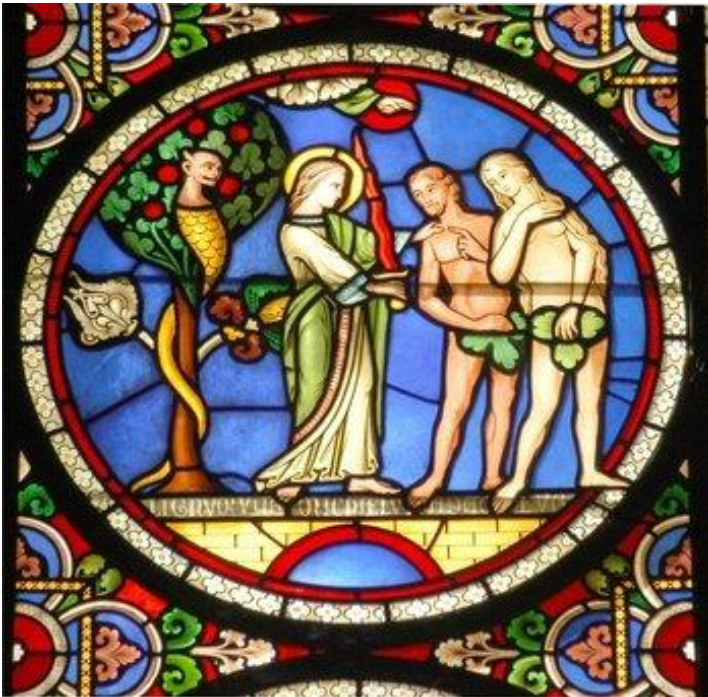


# Daylight

Origins Science for Catholics



No 43

March 2012

God has placed man in the highest place in the scale of living creatures; endowed, as he is, with a spiritual soul, the chief and the highest of all the animal kingdom. Manifold investigations in the fields of palaeontology, biology and morphology regarding other questions concerning the origin of man have thus far produced nothing clear and certain in a positive way. Therefore, we can only leave for the future the reply to the question, whether some day, science illumined and guided by revelation will offer certain and definite solutions to so serious a question.

*Pope Pius XII, address at the beginning of the year of the Pontifical Academy of Sciences, 30 November 1941*



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To inform Catholics and others of the scientific evidence supporting Special Creation as opposed to Evolution, and to show that the true discoveries of Science are in conformity with Catholic doctrines on Origins.

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**Daylight****Number 43****March 2012****CONTENTS**

The Scientific Method – <i>Martin Molloy</i>	3
The Early Church – the Greeks and Creation – <i>Dr John Donnelly</i>	7
Breaking the Anti-God Illusion – <i>Charles F. Byrne</i>	13
The Uniqueness of Man – <i>Anthony Nevard</i>	18
Pre-Socratic Greek Philosophers who exhibit similar elements to theism – <i>Gearoid Spainneach</i>	24
Genesis in the Traditional Catholic Liturgy – Season of Septuagesima	30
The First Order of Mammals: Man – <i>Baron Cuvier</i>	34
The Creation of Eve	back cover

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**EDITORIAL**

Modern biology uses the discipline of *comparative anatomy* to reveal the relationships between organisms according to the similarities and differences of their anatomy. This leads to the system of *classification* by placing them into categories based on these criteria, which are presumed to reflect their evolutionary origins. The study of *palaeontology* aims to uncover the fossilised remains of past ancestry and so produce solid evidence of prehistoric evolution.

So who laid the principles of these three sciences – was it Darwin himself, or another ardent 19<sup>th</sup>-century evolutionist? Not at all – in fact it was the distinguished French anatomist named Georges Cuvier [1769-1832], who worked at the Museum of Natural History in Paris. Isaac Asimov states, “He can thus be considered the founder of the science of comparative anatomy.” Although the ‘binomial nomenclature’ of classification had been introduced earlier by Linnaeus [1735], also a convinced believer in special creation, Cuvier extended the system to include fossils and, “He ... perfected the classificatory system of Linnaeus by grouping related classes into still broader groups called phyla ... Cuvier’s principles have guided biologists in their classifications ever since.”<sup>1</sup>

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<sup>1</sup> Asimov, I. *Biographical Encyclopaedia of Science and Technology*, Pan, 1975, p.236

As far as the living world was concerned, Cuvier's comparative studies led him to the realisation that it was not possible to represent all forms of animal life on Earth as members of single linear system, linking the so-called lower forms of life with so-called higher forms of life (with man, of course, at the top of the supposed ladder of creation). Instead, he arranged all animals into four major groups (vertebrates, molluscs, articulates and radiates), which each had its own kind of anatomy. The actual classification that Cuvier came up with is no longer used, but the fact that he made any such classification was a significant break with past thinking about zoology and pointed the way ahead.

Applying these ideas to the study of fossil remains, Cuvier reconstructed extinct species and almost single-handedly invented the science of palaeontology (along the way, he was the first person to identify the pterodactyl, which he named).<sup>2</sup>

Part of Cuvier's analysis of the unique anatomical features of the human body appears in this issue (to be concluded in the next) together with a revised version of an earlier article of my own. The foundational position in Christian faith and liturgy in the creation of Adam and Eve, and in the Fall, are expounded in an article taken from the traditional Catholic Missal.

We welcome two new writers, Charles Byrne and Martin Molloy, who show how Darwinism has been used as the favourite tool of those who espouse the cause of the 'anti-God illusion', and that the foundations of the true scientific method were by-and-large laid by Catholics, leading to most of the discoveries and inventions that underpin today's science and technology.

Two of our 'new regulars' in the revamped *Daylight* provide insights into the Greek philosophers: John Donnelly contrasts the doctrines of the early Church Fathers with the evolutionary beliefs of the Greeks, while Gearoid Spainneach looks at three philosophers who held some of the tenets of theism.

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<sup>2</sup> Gribbin, J., *Science – A History 1543 – 2001*, BCA, 2002, p.234-5.

## The Scientific Method

Martin Molloy

The scientific method brought man from darkness to light, from ignorance to knowledge, from the blind adherence to authority to the free spirit of inquiry. It liberated his mind from the chains of superstition and blind faith, and created a new enlightened man that accepts only those things that can be demonstrated with evidence.

Don't worry – I haven't changed sides – but what I have just written is more or less the narrative that we are all exposed to whenever we encounter those people who hold a view of the world diametrically opposed to ours. This narrative has been so influential among the general public that they believe that a scientist who goes to Mass is as rare as a leprechaun who works in a chemistry lab.

Now, this narrative is misleading and false on so many counts. It takes no account of the work done by generations of scientists and philosophers over the centuries who laid the foundations of our current scientific knowledge. As Isaac Newton famously said, "It is by standing on the shoulders of giants that I have been able to see further"<sup>1</sup>. Practically all of these giants were believers in the supernatural, and very many in the last 12 centuries were Catholics. This view also fails to acknowledge the simple fact that scientists themselves recognise that the scientific method has its limitations and do not rely on it exclusively themselves. In this article, I want firstly to explain what the scientific method is, and then to describe something of its history and role in science today.

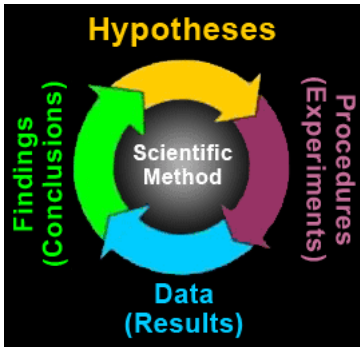
The scientific method is a way of studying and looking at the world that has existed in various forms for centuries. It has been known as the *experimental method*, the *empirical method* and *a posteriori reasoning*, among others. In its modern formulation, when we see a phenomenon in nature, we make a judgement about the cause of this effect. This judgement we call a hypothesis. Now, we design experiments to test the veracity of this hypothesis. If our hypothesis fails, we modify it (or create a completely new one) and we then test it again by experimentation. This continues in a circle (see Fig 1) until we

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<sup>1</sup> Letter to Robert Hooke February 5, 1676

manage to verify our hypothesis. Once our hypothesis is verified, we are happy to publish our findings as a theory. Our theory will be subject to peer review - i.e. other competent scientists will test our ideas. Then, and only then, does our hypothesis enter the corpus of scientific knowledge.

Fig. 1 The Scientific Method



No genuine inquirer into the working of the world could deny the merits of such a system. However, it does have some limitations. Many things which scientists hold as facts cannot be tested by this method, or can only be tested in an inadequate way. Numerous papers have been written about the first few seconds of the universe after the Big Bang, but no scientist can go back to the first day and study the events. All the experiments being conducted in the CERN institute [European laboratory for particle physics] do not give a scientific explanation that will satisfy the most honest of scientists unless they can create a universe of their own. The very reason it is called the Big Bang *Theory* and not the Big Bang *Law* is because it does not fulfil the criteria of the scientific method. Likewise, evolution has never been observed in nature or the laboratory, so it remains a theory. The theory of gravity is exactly the same. We do know in what measure objects are attracted to each other by gravity, hence we have the “Law of Universal Gravitation”. On the other hand, a scientific understanding of how gravity works is something that eludes us to this very day.

It turns out that in order to make progress in our understanding of the world there are two ways of reasoning. These are *a priori* and *a posteriori*. *A priori* means that we reason from some principle and from it deduce something of the world, and *a posteriori* means we look at the world and induce from our observations a universal principle. Raphael famously portrayed this distinction on canvas in his painting “School of Athens”. He showed Plato pointing to the heavens deducing from principles, while Aristotle directs his attention to the ground, advocating an inductive method from the observation of nature.



Fig 2 “School of Athens”

Now, with both methods we can be subject to error. If our principles are wrong *a priori* then our conclusions will be wrong. Pythagoras believed that all numbers were rational (can be written as fractions) and as a result they were lost with numbers like  $\sqrt{2}$ . On the other hand, our eyes can deceive us about a principle. Aristotle thought that heavier objects are being pulled to Earth faster than lighter ones. Galileo famously worked out that all objects fall at the same rate, *a priori*, before testing the principle.

Actually, the proper way to reason is in both directions. St Thomas succinctly said that the direction we reason depends on whether we have a better knowledge of the cause or the effect.<sup>2</sup> Listening to atheist rhetoric, they would try to convince the world that they, and all scientists, rely only on observation. Yet there would be so little scientific knowledge discovered if we had not the inspirational principles conceived by our ancestors. In fact, most concepts in particle physics have not been observed and rely totally on *a priori* reasoning.

### The Scholastics

From the days of Aristotle (4<sup>th</sup> Century BC), there have been many who have advanced the role of the scientific method. Ptolemy made his contribution along with Ibn al-Haytham. In fact, in the latter's "Book of Optics" (11<sup>th</sup> Century) we can recognise the scientific method in its modern form. From then on, we had a real enlightenment in Europe – the rise of the scholastics. These men knew how to think and reason. Roger Bacon, the English Franciscan friar, also played his part. Of course, we must mention Copernicus and Galileo, who contrary to what many people believe, remained devout Catholics till their deaths. The role of Catholics in science has been outstanding from that time. Even as late as the 18<sup>th</sup> Century, most of the men who did great original work in medicine were Catholics. The same is true for research on electricity. All the men after whom modes and units of electricity are named – Galvani, Volta, Coulomb, Ampère, Ohm – were not only members of the Church, but could even be called devout Catholics.

Francis Bacon, the English Protestant philosopher, is often credited with introducing the experimental method to the world against resistance from the refractory medieval Catholic Authority. He is spoken of as if he were a leader of the reformation. The devastation of the Reformation was already a century in full swing before he published his work. He actually did not perform any

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<sup>2</sup> *Summa Theologica* [I,Q.2,Art.2]

experiments of note but rather chronicled the scientific thought of the day. In fact William Gilbert, the Father of Electricity, conducted his experiments some 40 years before Bacon. We know that physicians applied the experimental method in its perfect form at least 300 years before Bacon's time.<sup>3</sup>

And so, after that rather cursory history, we come to the scientific method in our own day. It must be noted, in our own age, that many people have an uncritical attitude to the pronouncements of modern scientists and scientific commentators. Many look on 'Wikipedia' as a source of revelation, second only to BBC documentaries. What they lack is the ability to ask the questions that show when modern academics have strayed from the scientific method and have dived into the world of unsubstantiated supposition and blatant conjecture.

### **Young Scientist and Technology Exhibition**

To illustrate my last point, I will leave you with a true story that is only a few weeks old. I took some students to the BT Young Scientist and Technology Exhibition in Dublin. A truly wonderful event! The National Museum of Ireland had a stand there. They showed a picture of Clonycavan Man, a well-preserved Iron-Age man found in Co. Meath in 2003. A detailed reconstructed model of what the man looked like was gazed at with great amazement. We were told how this young prince was ritually slaughtered, probably by his own family, to be sacrificed as an appeasement offering to the Earth Goddess. My students asked various questions which were all answered enthusiastically. I told them that I was shocked that nobody had asked the most important question. How do you know all this? A change in the mood of our instructors was palpable. Enthusiasm turned to hesitation and panic. To put an end to this awkward silence, I asked them to tell us honestly how much of what we heard and saw was just supposition and artistic license. My students were shocked when they heard the reply: 'Ninety percent!' If only the scientific method were as common now as in the time of St Thomas.

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<sup>3</sup> *The Popes and Science* by James J. Walsh



## The Early Church, the Greeks and Creation

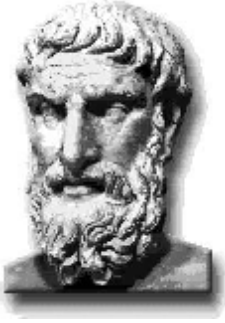
John Donnelly

The more I teach on origins, the more I hear it implied that the past was eternal. In class discussions very often my students will ask me, "If God created the world then who created God?" My response is "Who created that God?" which shows them that they are at a dead end with their question since it is assumed that there is no beginning to the causes of things and that, in turn, produces the problem of an infinite past. Concerning this I try to ask the adolescents: could one go back forever into infinity so that nothing would ever begin? Then in reply they make the mistake of trying to reduce things to "Tiny specks must have appeared" or "Maybe it just happened" or "It was always there". Of course all these responses are anticipated because they are not really explaining anything except that blind chance caused it all, or it all pre-existed in an eternal past, etc, etc. The ancient Greeks believed in an infinite past. Many philosophers believe in an infinite past because of the positions they adopt. My question is: how does one get back to the present moment if there have been an infinity of events back in the past?! Also surely things just do not pop into existence uncaused?! You must show the atheist the price he must pay for his reasoning. Accordingly for him, either things just popped into being from non-being uncaused, or they always existed. Both are untenable. The atheist is stumped and begins to spout out answers like those above which are not solutions to the problem.

Scientifically speaking, matter cannot be eternal. It also cannot have begun spontaneously by chance. Nothing is not something - it is literally 'No thing'. Something does not come from nothing spontaneously. The way out of the problem is to state that everything that begins to exist has a cause, the universe began to exist, the universe has a cause and that cause is GOD. If there is no beginning then you have metaphysical and philosophical suicide. The ancient Greeks did not see this and our kids are not seeing it now. But it is an old philosophy in a new guise, as we shall see.

As the early Church grew in the Graeco-Roman world, the Apostles and Fathers witnessed to men who believed in some form of evolution. In Athens,

Paul encountered Epicurean and Stoic philosophers.<sup>1</sup> These and other early philosophers were also scientists. They observed the world and attempted to explain its nature and origin. They had many views on origins, all evolutionary.<sup>2</sup>



### **Epicurean philosopher, Lucretius**

For example, the Epicurean Lucretius (b. 98 B.C.) wrote about origins in *On the Nature of Things*. He believed the earth had spontaneously generated all living things:

“It remains, therefore, that the earth deserves the name of mother which she possesses, since from the earth all things have been produced;” and “of herself she created the human race.”<sup>3</sup>

The Doctor, Galen (c. 170), expressed his Stoical views of creation in one of his medical works. Matter, he believed, was eternal and his god was not above the laws of nature:

“It is precisely this point in which our own opinion and that of Plato and of the other Greeks who follow the right method in natural science differ from the position taken up by Moses. For the latter it seems enough to say that God simply willed the arrangement of matter and it was presently arranged in due order; for he believes everything to be possible with God, even should he wish to make a bull or a horse out of ashes. We, however, do not hold this; we say that certain things are impossible by nature and that God does not even attempt such things at all but that he [*sic*] chooses the best out of the possibility of becoming.”<sup>4</sup>

## **THE EARLY CHURCH TEACHING**

The apostle Paul told the Athenians about “the God who made the world and everything in it” and “from one man . . . made every nations of men.” Acts 17:24-26 (NIV). He urged the Lycaonians to repent of their idolatry:

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<sup>1</sup> cf. Jerome, *Lives of Illustrious Men*, preface.

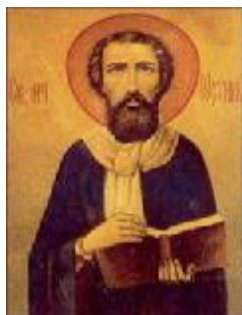
<sup>2</sup> cf. W.K.C. Guthrie, *In the Beginning: Some Greek Views on the Origins of Life and the Early State of Man* Ithaca: Cornell, 1965.

<sup>3</sup> cf. Lucretius, *On the Nature of Things*, 5.795-796, 822-823, Loeb Classical Library

<sup>4</sup> cf. Galen, *On the Usefulness of the Parts of the Body*, 11.14, in Robert L. Wilken, *The Christians as the Romans Saw Them* (New Haven: Yale, 1984), pp. 86-87.

“to the living God, who made heaven and earth and sea and everything in them.” Acts 14:15 (NIV).

Paul and the early Church Fathers taught: Christ, through whom “all things were created: things in heaven and on earth, visible and invisible.” Colossians 1:16 (NIV). New converts were warned, “See to it that no one takes you captive through hollow and deceptive philosophy, which depends on human tradition.” (Colossians 2:8).



### Justin Martyr

Converts included philosophers like Justin Martyr (b. 100). He wrote that on hearing the gospel, “a flame was kindled in my soul; and a love of the prophets, and of those men who are friends of Christ, possessed me. . . . I found this philosophy alone to be safe and profitable.” Justin Martyr, *Dialogue with Trypho*, 8, *The Ante-Nicene Fathers*, 1.198

The early Fathers, like Justin, changed their evolutionary view of origins for the Biblical one. They believed the Scriptures and that God created all things out of nothing in the space of six days only a few thousand years ago.

## CREATION OUT OF NOTHING

In Scripture, the early Fathers read about God who “gives life to the dead and calls into being that which does not exist.” Romans 4:17 (NASB). Defenders of creation *ex nihilo* included Clement of Rome, Hermas, Justin Martyr, Athenagoras, Irenaeus, Hippolytus, Clement of Alexandria, Origen, Tertullian, Eusebius, Augustine, and others.

One was a man called Theophilus, who, according to the historian Eusebius, became the well-known bishop of Antioch in 169.<sup>5</sup> Trained in Greek literature and converted to Christ as an adult, Theophilus defended the faith in an apology: *To Autolytus*. It contained an extensive treatment of creation and became a model for other Fathers.<sup>6</sup> The classical scholar and Bible translator, Jerome (b. 347), included Theophilus in his *Lives of Illustrious Men*, which

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<sup>5</sup> cf. Eusebius, *Church History*, 4.20, Nicene and Post-Nicene Fathers, 2nd series, 1:197.

<sup>6</sup> cf. Eusebius, *Church History*, 4.20, Nicene and Post-Nicene Fathers, 2nd series, 1:197.

listed “those who have published any memorable writing on the Holy Scripture.” Jerome described Theophilus’ writings as “short and elegant treatises well fitted for the edification of the church.”<sup>7</sup>

Concerning Greek views of origins, Theophilus wrote:

“Some of the Stoics absolutely deny the existence of God. . . . Others say that everything happens spontaneously, that the universe is uncreated and that nature is eternal . . . that God is only the individual’s conscience. Plato and his followers . . . say that matter is as old as God. But if God is uncreated and matter is uncreated, then according to the Platonists God is not the Maker of the universe.”<sup>8</sup>

For Theophilus, “God . . . made the existent out of the non-existent.”<sup>9</sup> He explained: “They (the Greeks) made these statements (about origins) by conjecture and by human thought, not in accordance with the truth.”<sup>10</sup>



### St. Theophilus

Theophilus knew that “the God and Father and Maker of the universe did not abandon mankind but . . . sent holy prophets to proclaim and teach the human race.”<sup>11</sup> Theophilus told Autolyucus to search the Scriptures so that he might find the truth. The harmony and agreement of all parts of Scripture concerning the origin of the world and man showed

that God was its author. The “Spirit of God . . . came down into the prophets and spoke through them about the creation of the world and all the rest.” (Theophilus, To Autolyucus, 2.10)

## SIX DAYS OF CREATION

The Ten Commandments record that “in six days the Lord made the heavens and the earth, the sea, and all that is in them.” (Ex 20:11 NIV) According to Eusebius (b. 263), several Fathers wrote commentaries about the six days of

<sup>7</sup> Theophilus, To Autolyucus, 2.4, *Oxford Early Christian Texts*

<sup>8</sup> *ibid.* 2.4

<sup>9</sup> *ibid.* 2.4

<sup>10</sup> *ibid.* 2.4

<sup>11</sup> *ibid.* 2.34

creation. Eusebius (5.13, 27; 6.22, pp. 229, 245, 270) included such a commentary in his apology to Autolycus.

Like other Fathers of this period, Theophilus saw many types and figures in Genesis 1, yet retained the literal interpretation. For example, he wrote, "On the fourth day the luminaries came into existence. Since God has foreknowledge, he understood the nonsense of the foolish philosophers who were going to say that the things produced on earth came from the stars, so that they might set God aside. In order therefore that the truth might be demonstrated, plants and seeds came into existence before the stars. For what comes into existence later cannot cause what is prior to it."<sup>12</sup>

## RECENT CREATION

In his gospel, Luke the physician recorded 75 generations from Jesus to Adam (Luke 3:23-38). Using the numbers found in the Old Testament, Theophilus, Clement of Alexandria, Julius Africanus, and Eusebius added up the number of years from the creation of the world. Theophilus concluded,

"There are not two myriads of years, even though Plato said such a period had elapsed between the deluge and his own time, . . . The world is not uncreated nor is there spontaneous production of everything, as Pythagoras and the others have babbled; instead the world is created and is providentially governed by the God who made everything. And the whole period of time and the years can be demonstrated to those who wish to learn the truth. . . . The total number of years from the creation of the world is 5,695."<sup>13</sup>

Regarding the total number of years, Theophilus says,

"If some period has escaped our notice, say 50 or 100 or even 200 years, at any rate it is not myriads, or thousands of years as it was for Plato . . . and the rest of those who wrote falsehoods. It may be that we do not know the exact total of all the years simply because the additional months and days are not recorded in the sacred books."<sup>14</sup>



Origen (b. 185), the great theologian of the Greek churches, defended "the Mosaic account of the creation,

<sup>12</sup> Theophilus, To Autolycus, 2.15, *Oxford Early Christian Texts*

<sup>13</sup> *ibid.* 3.25,28

<sup>14</sup> *ibid.* 3.29

which teaches that the world is not yet ten thousand years old, but very much under that.”<sup>15</sup>

And Augustine (b. 354), the great bishop of the Latin churches, wrote, “the Scripture . . . has paramount authority . . . to which we yield assent in all matters.”<sup>16</sup> “That God made the world, we can believe from no one more safely than from God Himself.”<sup>17</sup>

On the age of man and the earth, Augustine wrote,

“Some hold the same opinion regarding men that they hold regarding the world itself, that they have always been . . . . And when they are asked, how, . . . they reply that most, if not all lands, were so desolated at intervals by fire and flood, that men were greatly reduced in numbers, and . . . thus there was at intervals a new beginning made. . . . But they say what they think, not what they know. They are deceived . . . by those highly mendacious documents which profess to give the history of many thousand years, though reckoning by the sacred writings, we find that not 6,000 years have yet passed.”<sup>18</sup>

## CONCLUSION

Many of the pronounced and basic features of the Darwinian theory were anticipated even as far back as the seventh century B.C.<sup>19</sup> I think that the Greeks were wrong about nature being eternal, wrong about things having no starting point, wrong about spontaneous generation whereas the fathers were right about creation ex nihilo, right about a beginning point and right about the word of God which gives us the norm by which we judge everything.<sup>20</sup> We have seen how the early Christians, many educated in Greek thought, rejected evolutionary ideas after their conversion. They rejoiced at being changed into the marvellous light of God’s revelation. They then worshiped the Alpha Who had made all things out of nothing and Who was now making men new.

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<sup>15</sup> Origen, Against Celsus, 1.19, *Ante-Nicene Fathers*, 4:404

<sup>16</sup> Augustine, The City of God, 11.3, *Nicene and Post-Nicene Fathers*, 2:202

<sup>17</sup> *ibid.* 11.4

<sup>18</sup> *ibid.* 12.10

<sup>19</sup> (Henry Fairfield Osborn, *From the Greeks to Darwin* (New York: Charles Scribner's Sons, 1929), p. xi.)

<sup>20</sup> cf. the *Norma normata* of Vatican 2.

## **Breaking the Anti-God Illusion**

Charles F. Byrne

The existence of God is a fact, beyond any possible reasonable doubt. It is the most important reality we can ever know. It is the truth above all other truths – something that, ultimately, we ignore at our own peril.

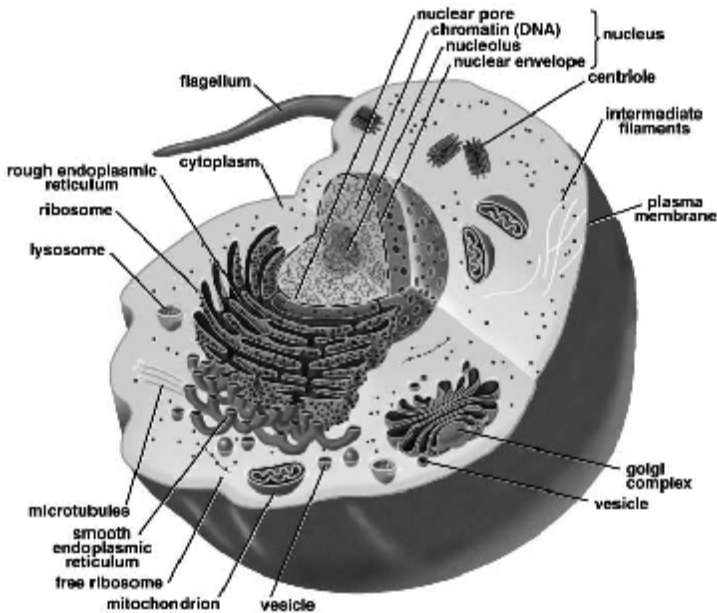
Imagine if a scientist, upon finding a super-complex microchip in a forest, exclaimed, “I conclude that this microchip made itself... First of all, it was a grain of sand, and upon rubbing up against other grains of sand, after millions, no make it billions of years, it has eventually become more and more ordered, until finally it is as we see it – the finished product, the product of chance.”

Such a proposition is, of course, utterly ridiculous. The fact is that this could never happen – ever. The probability is zero. And yet, such a notion is not nearly as preposterous as the commonly held one, that the living cells of life, which are far more complex than any technology ever made by man, have somehow come about as the result of chance processes. Now, to such logical reasoning you may likely hear the very predictable response, “Oh, but it could happen, given lots and lots of time. There may not be much of a chance, but there is ‘a’ chance, and all that has to happen is for things to fall right once in billions of years.”

This is not true.

### **The ‘simple’ cell?**

Look at living cells – their very precision of order and ingenuity in design defies the very fingerprints of disorder and chance. They are a construction – the accurate placement of material by an intelligence. The typical anti-God pseudo-scientist maintains that amino-acids (one of the key ingredients found in these super-complex living structures) somehow formed first from a ‘primordial soup.’ They will attempt to use this ‘reasoning’ vaguely to explain the formation of life. They may twitch their heads and fix their spectacles – they may articulate their point very eloquently, with the confident candour of the most learned professor – but don’t be fooled by this parroting of nonsense.



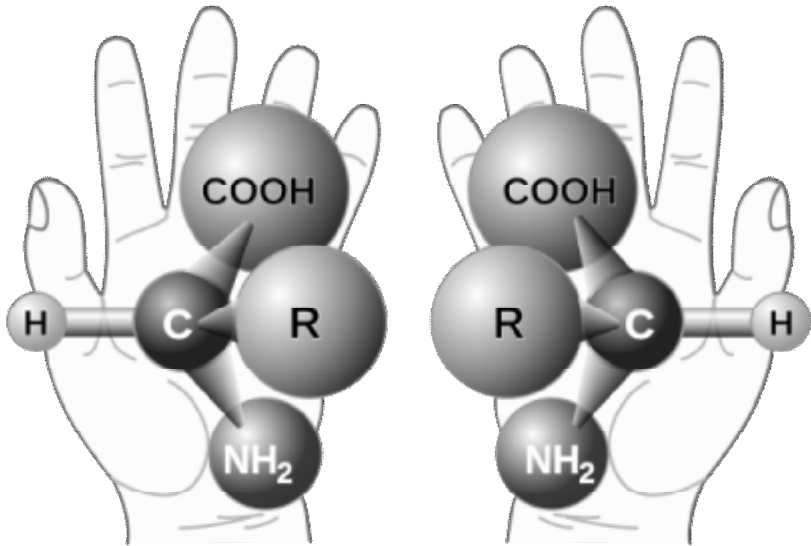
*Fig 1 The not-so-simple cell*

Even if amino-acids were formed in nature by some as yet unknown process, amino-acids are not life – just as sand is not a micro-chip or a computer program. Some scientists made a lot of noise when amino-acids were formed under contrived laboratory conditions.<sup>1</sup> The immense problems were glossed over, of course. What they had made was an unstable cocktail, with about 10% amino acids, and the other 90% chemicals poisonous to life – and the amino acids that were formed were definitely unsuitable for life – they were of unsorted “chirality.”<sup>2</sup> To put it as simply as possible, these amino-acid molecules can be left or right handed – they can look the same shape, but be in fact the mirror image of each other – and only the left-handed ones are suitable for life. Random chemical processes, however, will never produce molecules of one chirality and not the other.

1 This was the “Urey-Miller Experiment” - conducted by the American researcher Stanley Miller in 1953.

2 The term “chirality” comes from the Greek word for hand.





*Fig 2 Chirality diagram*

What we find in life is the precise and super-clever arrangement of chemicals which would not all come together and co-exist naturally. What we see in the cell is a tiny self-repairing, self-reproducing machine of a complexity that is far beyond the genius of even the greatest human intelligence.

### **Faith without reason**

It is ironic to hear self-professed ‘intellectuals’ arrogantly denying God, “all,” they would have you believe, “in the name of reason.” Yet what these ‘anti-God-ers’ propose is actually anti-intellectual – it is the notion that order and design can come without reason, without a guiding intelligence.

Those who reject God often claim that “believers are superstitious, relying chiefly on emotion.” But try asking such a hardened “atheist” to sincerely kneel down with you, to say a simple prayer. You are likely to be answered by a very emotional refusal – you will find that he simply does not want to know, or even worse, that he is very “superstitious” about not praying.

Herein lies the problem, and the solution – the illusion of atheism comes from sin. The solution to sin is prayer. The denial of God is a form of intellectual trickery designed to excuse an unsettled conscience. The “atheist” sins against faith – and from this point his reason is clouded. It then appears to him more important to keep up the illusion of disbelief than to submit to the reality of God. The denier of God knows, if he is entirely honest with himself, that deep down there is a problem in his very being – there is an obstacle which hides from him the light of God.

All the time, the atheist makes the excuse that he is merely following reason to its logical conclusion. “I am in the cold, hard business of facts”, he declares, as he scoffs at the very suggestion that there could be a God.

“Religion”, he says, “is in the realm of madness and myth... it’s for the feeble-minded, for those who are unwilling and incapable of reason.”

Those blessed with the gift of faith have to counteract this attitude by living their faith in its true sense. The common error today is a faith based on emotion, a faith willing to believe almost anything that “feels right.” That’s not the true Faith at all.

### **Authentic Catholicity**

Authentic Catholics ought to be chiefly concerned with truth. Now, we know that we are not permitted to lie, ever. But a common perception today is that many Catholics, while they may not lie, are “gullible” or “sloppy about the facts,” and this is, unfortunately, often the case. For example, how many times are spurious visions accepted almost instantly without even a hint of scepticism? We live in an age of mass ignorance of the Faith. ‘Piety’ is put before doctrine. Vagueness and pseudo-mysticism take the place of the clarity and precision of the past.

The fact that the anti-God illusion maintains a degree of respectability in today’s world is as much a result of sentimental and superstitious religiosity as it is a consequence of a secularised world that places most of the emphasis on the means and hardly any on the end. As people of true Faith, our way of thinking must shine above the murkiness of this corrupt, agenda-driven world. When people see a Catholic scientist they must always be able to say, “Well, I

know that he/she will be diligent, that he/she will not only be open to the truth, but always enthusiastic about it.”

### **Breaking the anti-God illusion**

Breaking the anti-God illusion is hardly the work of a single day. It is, for all of us, the labour of a lifetime. God has left His wonderful fingerprints all over this, our created world – “*Caeli enarrant gloriam Dei*”.<sup>3</sup> Most atheistic scientists are terrified about investigating paths that may undermine their godless world-view. In debates, how often do they resort to name-calling and emotional outbursts? We Catholics need have no similar worry about following any line of enquiry, since we are sure by Faith that whatever truth we find in science can only declare the glory of God. We, therefore, have an opportunity we can use. The world has become decadent. A great many, if not the vast majority, of schools and universities, in a pathetic quest for egalitarianism, have “dumbed down” their courses, so that “everyone” can do them (and also, so that anyone can teach them!) It’s time for a complete overhaul of the system – it’s time for Catholic centres of excellence in education at all levels. If we do this, we can be sure that exciting discoveries lie ahead and we can be certain that, among other things, the anti-God illusionists favourite tool – Darwinism – will soon be exposed to all as the outrageous fraud that it truly is.

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<sup>3</sup> The heavens shew forth the glory of God. Psalm XVIII (Latin Vulgate)

## The Uniqueness of Man

Anthony Nevard

SCIENCE shows that human beings share many physical characteristics that distinguish us from even our 'closest relatives' the higher apes. Hundreds of 'missing links' would be necessary for humans to evolve from animals, and there is neither fossil nor genetic evidence for this possibility. Man's superiority reflects his special creation in the image of God, especially through his use of reason, creativity, free will, morality, mastery of the environment and community life. Our distinctness as a species throughout all known human history gives no support for animal ancestry.



*Thus there are seen to be profound differences between man and the existing apes, and it must be remembered that we have considered mainly skeletal features and hardly touched on the details of the inner life of the animals, or their powers of communication or social organisation. [p.641]*

*... man stands farther apart from the apes in this respect [the much larger brain] than they do from other anthropoids ... The difference of behaviour between men and apes exceeds all the structural differences; our lives are so widely different from theirs that any attempt to specify the divergences in detail is apt to seem ridiculous. [p.633]*

J.Z.Young,  
*The Life of Vertebrates*, 2<sup>nd</sup> edn.,  
Oxford U.P. 1962.

## Some Unique Features of the Human Body

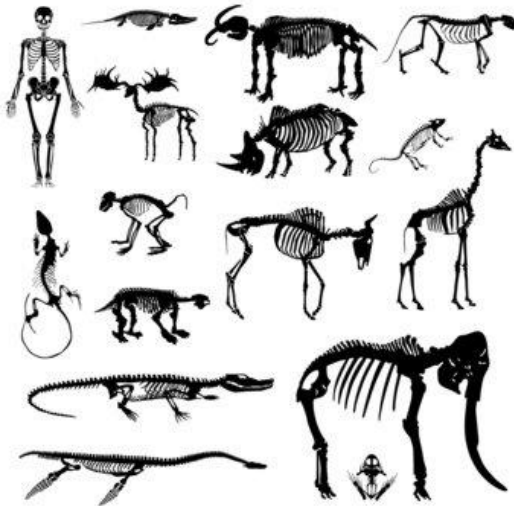
Man is classified thus:

Kingdom: Animalia Phylum: Chordata Class: Mammalia Order: Primates  
Family: Hominidae Genus: *Homo* Species: *H. sapiens* [Linnaeus 1758]

Man is zoologically an 'animal', a 'vertebrate' [chordate], a mammal and a primate, owing to his large brain, stereoscopic vision and well-adapted hands. It is generally considered that the animal he can most closely be compared with is a chimpanzee, as there are no other living members of the genus *Homo*, and other relatives claimed from ape-like fossil remains are disputable.

The human body displays numerous physical features that are unique and are not comparable in any of the great apes such as chimpanzees, gorillas or orangutans. For reasons of space, these are listed in note form below:

**SKULL.** Nearly vertical forehead and face. Brow ridges absent. Large protruding nose. Protruding chin. Smaller, lighter jaw. Parabolic dental arcades. Occipital and temporal crests absent. *Foramen magnum* beneath skull, as head is placed upright on neck. Perfectly designed for erect stance.



*Various vertebrate skeletons – human at top left.*

**BRAIN.** From 750 - 2350 cc; average male about 1500 cc. Well-developed frontal and occipital lobes.

**SPINE.** Bodies of vertebrae taper in size upwards to support weight, with well developed inter-vertebral disks. Double curvature in neck and sacrum, forming S-shaped spine, essential for upright stance and balance.

**PELVIS AND GAIT.** Shorter but broader hip-bones, for attachment of the abdominal and buttock muscles, which are well developed for upright posture, balance on one leg, and locomotion.

**LEGS AND FEET.** Large calf and anterior thigh muscles. Femur allows knees to be held together when standing. Knee and ankle joints allow upright standing, sitting and kneeling. Ankle joint at right angle to tibia. Arched sole. Short digits, with big toe the largest and longest, but not opposable.

**ARMS AND HANDS.** Much shorter arms. Far less powerful muscles. More mobile shoulder, forearm and wrist joints. Longer fingers with separate movements and fully opposable thumb. Very well developed senses in hand.

### Comparison with Features of the Chimpanzee or Gorilla

**SKULL.** Sloping forehead and face. Heavy brow ridge. Flat nose. Long canine teeth, with a gap. Receding chin, with inner 'simian shelf'. Large heavy jaw. U-shaped dental arcades. Occipital and temporal crests for attachment of large neck and jaw muscles. *Foramen magnum* angled to meet first vertebra, as skull not balanced above spine.



**BRAIN.** Volume of skull in adult male ape varies between 90 cc. and 685 cc. Gorilla: 510 cc. Chimpanzee: 410 cc.

**SPINE.** Long spines and transverse processes on cervical vertebrae for attaching large neck muscles. Cantilever spine suited for quadrupeds. No forward curvature in neck and lumbar regions.

**PELVIS AND GAIT.** Long, narrow, slanting pelvis - Muscles developed for quadrupedal gait.

**LEGS AND FEET.** Knees and ankles do not allow legs to straighten completely or body to balance upright. Foot not arched, so walks on side of foot. Ankle joint oblique, with foot turned outwards. Longer digits, with opposable 'big toe'.

**ARMS AND HANDS.** Arms relatively much longer, used to assist in 'knuckle walking' and climbing. Very large muscles all along arms. Less mobility of the hands. Shorter fingers and non-opposable thumb. Less developed sensory supply to hand.

## Further distinctive features of Man

In addition to the scores of distinct differences between the skeletons and muscles of apes and man, there are many other uniquely human physical and behavioural characteristics.

**THE FACE.** The highly variable facial features provide unique individuality (apart from identical twins), with far less relative variability of racial characteristics and size: evidence of the unity of the human species. Complex subcutaneous facial muscles at chin and forehead, and around eyes, nose and mouth, make possible a huge range of expressions. Facial communication and interaction are pre-programmed in infancy.

Only humans express joy and pleasure by smiling. The eyes respond to emotional states to be the 'windows of the soul'. The large nose, turned-out lips and earlobes provide secondary erogenous zones in love-making. Only humans can die from a bleeding nose!

**SPEECH.** Humans, unlike other mammals, utter sounds without raising the head, permitting level face-to-face conversation. The projecting chin allows more freedom for the tongue, enabling much more varied sound production. The pharynx, position of the tongue, shape of the mouth and the larynx are uniquely suited for speaking and singing. Unlike animals, we cannot drink and breathe at the same time, except in infancy (up to about two years old) to allow for breast feeding.

**SKIN.** Humans are one of only a few of the 4200 species of mammals, and the only one of 200 primates, not covered by fur or hair. This might seem a disadvantage in giving less protection and warmth, and increasing exposure to damaging ultraviolet radiation. However, it allows far greater sensitivity of the skin, and more tactile responses, needed in intimate interpersonal relationships, including neural development of the child. Skin also expresses emotions, such as reddening with anger or sweating with fear. Humans are also the only creatures who blush - or ever have the need to do so!

Human skin is a supreme thermo-regulator, by varying blood flow in the surface of the skin, and by the action of some 2 million sweat glands releasing sweat in hot conditions. There are even two types: one responds to heat, the other to emotions!

Unlike other primates, humans have a layer of fat beneath the skin to insulate them from the cold. Exposure to sun usually results in tanning, by

which dark eumelanin pigment helps to provide a protective filter from harmful radiation. Redheads have a higher proportion of pheomelanin, and often cannot get a tan.

Skin colour is determined by the genetic potential for melanin production. Noah and his family were probably a mid-brown colour. After Babel, language barriers contributed to isolation of populations and natural selection of different 'races'.

**REPRODUCTION AND DEVELOPMENT.** Humans are designed for intense personal face-to-face pair-bonding, without limitations of seasonal breeding periods. Several unique erogenous features maximise pleasurable physical experiences.

Only humans have the anatomical attributes associated with the religious practice of circumcision and the definition of female virginity. Only human females suffer pain in normal childbirth. It should be noted that the human embryo develops into the foetus without passing through an ape-like stage, so denying the theory of embryonic recapitulation. Organs like the appendix, thymus and coccyx, once thought to be useless vestiges of evolutionary ancestors, have on closer investigation been proved to be useful structures in humans.

Humans have the longest maturation span of any creature, being absolutely dependent on others for survival for many years. Most animals reach 60% of their adult size in a year - we take 14 years. The skull does not fully ossify until age nineteen, so that the brain can continue to grow. Yet the three ossicles of the middle ear do not grow at all, because they are full-sized at birth! The hand and the pelvis are very slow to develop, and maturity comes later than in even the large primates. Language and cultural development are also much slower in humans.

Yet the human life span today is typically over twice that of the large apes, contrary to predictions based on body size and metabolic rate, but consistent with having a larger brain.

**BRAIN AND BEHAVIOUR.** The human brain is only 1/4 the mass of a whale's brain, and marmoset monkeys may have a 1: 1 ratio of brain mass to body mass. Brain/body ratio in elephants is 1/1000, chimpanzees 1/150, gorilla 1/500 and man 1/50. But it is neither just the absolute mass nor the relative mass that determines intelligence. Human brains are not just bigger than ape brains - they have unique complex structures such as the following:



- Ø Frontal cortex, forming about one-half of the cerebral cortex, and concerned with complex behaviour, self-awareness, memory usage, control, planning etc.
- Ø Association areas, which serve to integrate sensory inputs from seeing, hearing and touch. Damage to these areas in humans has much more effect on self-awareness, reasoning, language and behaviour than in apes.
- Ø Hemisphere specialisation, with certain functions more involved with only one side of the brain, such as Broca's speech centre on the left side. The tendency to right-handedness (80-90%) is uniquely human. Association between hemispheres in humans comes through the large *corpus callosum*.

Specifically human behaviour includes spiritual, mental and cultural aspects, e.g. free will, imagination, abstract reasoning, moral sense, detailed memory, number, writing, language, humour, laughter, religious sense and worship, burying the dead, conscience, guilt, weeping, poetry, art, use of tools, fire, dress, weapons, etc.

*We now know, for instance, that man, in his prenatal stages, does not go through the complete evolution of life - from a single cell to a fish-like water creature to man. Today it is known that every step in the fetal development process is specifically human.*  
Dr. S. Schwabenthan. *Parents*. October 1979.

*In man is a three-pound brain which, as far as we know, is the most complex and orderly arrangement of matter in the universe.*  
I. Asimov, *In the Game of Energy and Thermodynamics You Can't Even Break Even*, Smithsonian (June 1970), p.10.

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The first version of this article appeared in Daylight No 24, 1997, pp 28-31.

### **Further Reading**

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 Burgess, S., *The Origin of Man*, Day One Publications, 2004.  
 Bonnette, D., *Origin of the Human Species*, Sapientia Press, 2<sup>nd</sup> Edn, 2003  
 Dewar, D., *Man: a Special Creation*, Evolution Protest Movement, 1975  
 Miller, J., *The Body in Question*, Jonathan Cape, 1978  
 Pitman, M., *Adam and Evolution*, Baker Book House, 1984  
 Smith, A., *The Body*, Pelican Books, 1970

N.B. These books discuss the distinct features of man, but some are by evolutionists.

## Pre-Socratic Greek Philosophers who exhibit similar elements to theism

Gearoid Spainneach

Having recently studied philosophy for two years, I was amazed to stumble across some interesting philosophical insights of some ancient Greek pre-Socratic thinkers. These philosophers preceded Socrates, who was a renowned Greek philosopher alongside his student Plato.

It is true that many ancient Greek philosophers held a concept of eternal matter and spontaneous generation (i.e. evolution). However, I would like to present three **pre-Socratic** Greek Philosophers whose philosophy exhibits some theistic tendencies as well as elements of some non-evolutionary views - namely Thales, Xenophanes & Heraclitus.



### Thales of Miletus

Thales is considered the father of Natural Philosophy. He was the first known philosopher to offer naturalistic explanations of phenomena such as earthquakes. His naturalistic reasoning is very impressive as he thought that the earth floats on water and that it sometimes rocks on the water like a boat, which sometimes gave it that earthquake-like effect as the boat rocks. <sup>1</sup> What I like

about his musing is that indeed the earth's tectonic plates do rest on a semi-liquid molten material and the plates do indeed rock (like a boat) on this fluid substance amid the friction caused by opposing plates.<sup>2</sup> So Thales was not too far off the truth, and he has been given numerous other accolades for his impressive conjectures.

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<sup>1</sup> cf. *The Presocratic Philosophers*, Kirk and Raven (Cambridge; Cambridge University Press: 2007) ch. II p. 93,94

<sup>2</sup> cf. U.S. Geological Survey, *The Earth's Crust*,  
(<http://earthquake.usgs.gov/research/structure/crust/index.php>)  
Sn. Earthquake Hazards Program

Thales was a reputed astronomer & correctly predicted an eclipse of the sun in 374 B.C.<sup>3</sup> It is reported that he was also of the opinion that everything is made of water,<sup>4</sup> and this follows closely to the creation account in Genesis: “The earth was without form and void,...and the spirit of God was moving over the face of the waters.”<sup>5</sup> Not only that but it is now known that up to 70% of our bodies is made up of water,<sup>6</sup> without which we could not function properly. Thales is credited with devising a simple method of measuring the height of Egyptian pyramids using the sun’s shadow for a guide.<sup>7</sup>

Thales was a Phoenician by ultimate descent; Phoenicia is a place name mentioned in the Bible.<sup>8</sup> Learning this, it made me wonder - did Thales have contact with a Jewish diaspora or have any knowledge of Hebrew culture and the creation account as mentioned in Genesis? In general, Greek philosophers did influence the writers of the Gospels, e.g. St John uses the word “Logos” and clearly sees God as the author of life.<sup>9</sup> The Greeks gave us the language by which the Gospel writers wrote about Christ as author and creator of Life.



### **Xenophanes of Colophon**

Another philosopher of interest is Xenophanes, for here is a man who is ‘speaking from his grave’, a man of our times, and, I reckon, a man very much in the creationist camp. At least it seems this way from this synopsis.

“Xenophanes thinks that a mixture of the land with the sea occurs, and that in time the land is dissolved by wetness. He claims he has demonstrations of the following kind; shells are found inland and in the mountains. Moreover he says that in Syracuse an impression of a fish and of seaweed has been found in the quarries; in Paros an impression of a bay-leaf in the depth of the rock; and in Malta laminae of all marine life. These came

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<sup>3</sup> cf. *The Presocratic Philosophers*, Kirk and Raven (Cambridge; Cambridge University Press: 2007) ch. II p. 81

<sup>4</sup> cf. *ibid.* ch. II p. 89

<sup>5</sup> Genesis 1:2 (RSV)

<sup>6</sup> <http://www.chemcraft.net/wbody.html>

<sup>7</sup> cf. *The Presocratic Philosophers*, Kirk and Raven (Cambridge; Cambridge University Press: 2007) ch. II p. 85

<sup>8</sup> Acts 11:19

<sup>9</sup> cf. John 1:1

into being, he says, when everything was long ago covered with mud, and the impression was dried in the mud".<sup>10</sup>

Ken Ham, a creationist and president of 'Answers in Genesis' often quotes this line at his seminars (and in Dublin 2005 it was no different):

"If there really was a global Flood, you would expect to find billions of dead things buried in rock layers laid down by water all over the earth . . . which is exactly what you do find!"<sup>11</sup>

It seems Xenophanes had really thought things through here, and today there are curious fossils found in the most unlikely of places that mystify many palaeontologists. Some sedimentology experts are beginning to realise that stratification layers are laid down rapidly with water,<sup>12</sup> and so Xenophanes seems to be vindicated here in his ponderings.



### **Heraclitus of Ephesus**

Heraclitus's philosophy has to a degree some similarity with today's Christianity. He also presents an epistemological theory of tempered empiricism, arguably much like the method of inquiry we use in science and philosophy today. This should make him an approved scientist & philosopher to the modern empiricist and or atheist.

For Heraclitus the world is ordered, guided, and unified by a rational structure, a single divine law, which he calls the "logos".<sup>13</sup> Observation coupled with an understanding of the logos yields true knowledge. The basic tenet of Heraclitus's system is the claim that there is a rational structure to the cosmos and that this rational structure orders and controls the universe. A fundamental part of understanding the logos involves seeing that all things are unified in it.

<sup>10</sup> Greek Philosopher Hippolytus, *Refutation of all Heresies*, KRS 184

<sup>11</sup> Ken Ham, Answers in Genesis article, 'They Can't Allow It!' 1<sup>st</sup> August 2005, <http://www.answersingenesis.org/articles/au/cant-allow-it>

<sup>12</sup> Guy Berthault; sedimentologist, *A New Approach: Paleohydraulic Analysis* <http://www.sedimentology.fr/>

<sup>13</sup> cf. *The Presocratic Philosophers*, Kirk and Raven (Cambridge; Cambridge University Press: 2007) ch. VI p. 187

Heraclitus often refers to the logos as the mind of God, although he does not view God in the anthropomorphic sense; it seems more pantheistic. Pantheism is not a legitimate Catholic position to hold.

However... leaving pantheism aside for the moment, Heraclitus describes the folly of those multitudes, who attempt to investigate nature without understanding the logos. Without understanding they gain access only to their own subjective worlds, not the real, objective one.<sup>14</sup> In today's world there are many scientists who investigate nature without allowing for a Creator. They deny this possibility, simply because they cannot see a Creator. This is very much the camp of Neo-Darwinists who take their springboard from Darwinists.



### **Francis Collins**

Theistic Evolutionist Francis Collins, who is former head of the human genome project, holds a concept of God, and he speaks of 'The Language of God'. Collins believes that many scientists overlook or fail to understand God's language. For Collins the moral law is the language of God.<sup>15</sup> Heraclitus too speaks of a language that many investigators don't understand. For Heraclitus, this is the logos, which is the language of nature. Notice that Heraclitus is not talking of a moral law, which is the 'language' definition for Collins. Instead, Heraclitus defines 'language' as the laws and the order that exists in the cosmos. He inadvertently speaks of a level of intelligence, which Francis Collins overlooks.

So was Heraclitus a creationist? Well, he was reputed to have called Xenophanes an ignoramus, so perhaps that rules out the possibility of there being a meeting of the minds. Is Heraclitus a theistic evolutionist like Francis Collins? Well, as we just mentioned, they both had different ideas there so perhaps that rules him out as a fellow Theistic Evolutionist. It seems then, that Heraclitus was, to a degree at least, an Intelligent Design advocate, seeing order in the cosmos. He did not proclaim the logos as the Creator God, as a creationist would do, and as we mentioned earlier, Heraclitus had a pantheistic

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<sup>14</sup> cf. Greek and Roman Philosophy, Malcolm Schofield, ch. 2 p. 59

<sup>15</sup> The Language of God, Francis Collins (London: Simon & Schuster UK Ltd; 2007) ch. 1, p.21-23

view on God. Again, this is not a tenable view for any Christian, even though his I.D. connotations are welcome.

### **Knowing God through natural reason**

Despite the fact that these Greek philosophers did not encounter Christianity, the evidence for the true God still existed for them. Xenophanes did not have Levites to preach to him, but he had fossils, “if these [disciples] were silent, the very stones would cry out”.<sup>16</sup> Thus he could see more clearly how rocks came to be. Why is it that today’s palaeontologists fail to see this obvious natural revelation?

The answer lies in Scripture...As St. Paul says:

“for although they knew God they did not honor him as God or give thanks to him, but they became futile in their thinking and their senseless minds were darkened. Claiming to be wise, they became fools, and exchanged the glory of the immortal God for images resembling mortal man or birds or animals or reptiles.”<sup>17</sup>

### **Knowledge of God**

Thales, Xenophanes and Heraclitus, while perhaps not coming to full knowledge of God, saw something of a created order and thereby gave honour and glory to the unknown true God. In the book of Wisdom it speaks of such men:

“Yet these men are little to be blamed,  
for perhaps they go astray while seeking God and desiring to find him.  
For as they live among his works they keep searching,  
and they trust in what they see, because the things  
that are seen are beautiful”.<sup>18</sup>

Again, Heraclitus did not have Levites to explain who God is, but he had the created world and cosmos to help him perceive the things that have been made

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<sup>16</sup> Luke 19:40 (RSV)

<sup>17</sup> Romans 1:21-23 (RSV)

<sup>18</sup> Wisdom 13:6,7 (RSV)

by God. Thales and Xenophanes, on the other hand, appear to be searching for truth, thus being on the road to coming to understand that an eternal power and deity exists.

“Yet again, not even they are to be excused;  
for if they had the power to know so much  
that they could investigate the world,  
how did they fail to find sooner the Lord of these things?”<sup>19</sup>

### **The verdict on theism**

Heraclitus, despite his pantheism, manifested a concept of deity, exhibiting similar elements to theism. Thales and Xenophanes display a respect for nature around them, and appear to be open to eternal truths. Heraclitus and Xenophanes do display some elements of non-evolutionary thinking, but I'm less inclined to believe this is necessarily true of Thales.

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## Editorial Policy

Please be aware that the opinions expressed in the articles published in *Daylight* are not necessarily shared by the Editor in every respect. There are different positions on various questions related to origins, science and doctrine that are open to honest discussion and debate. The writers are not necessarily Catholic themselves. Our principle is not to promote material that is clearly intended to be hostile to traditional Catholic dogmatic teachings on Creation, Scripture or other relevant doctrines, except of course when such is quoted to correct errors.

Unsolicited articles on topics that are relevant to origins issues from a Catholic perspective will be considered for publication. They should ideally be of around 1000 – 1500 words and preferably submitted as a WORD file, compatible with the 2007 edition, or PDF. Please send an s.a.e. if you would like the original copy returned.

The Editor reserves the right to decline publication if the article does not meet the expected standards or requirements.

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<sup>19</sup> Wisdom 13:6,8 (RSV)



*The Fall*  
(Septuagesima)

*The Flood*  
(Sexagesima)

*Abraham's Sacrifice*  
(Quinquagesima)

## GENESIS IN THE TRADITIONAL CATHOLIC LITURGY

### SEASON OF SEPTUAGESIMA

*From Septuagesima to Shrove Tuesday*

After the eager welcome given to the Incarnate Word, whose divine glory shines through His Humanity, the Church suddenly confronts us with the gloomy depths of the fall of man. As in the Christmas Section she returns to the Old Testament to show us all the great figures who heralded Christ's work of redemption and whose history, as types of our Lord's, is well calculated to prepare us for the great festival of Easter when we celebrate His victory. "Search the Scriptures," said our Lord, "the same are they which give testimony of Me." *Lex grava Christi*, the Old Law is 'obsessed' with the thought of the Messiah, for everything to do with God's people foretold and heralded Jesus who was to be their Saviour. The Old Testament is, so to say, an anticipation of the Gospel which throws considerable light on the whole course of our Redeemer's life. In her liturgy the Church delights to draw a parallel



between the beginning and end of the Bible. This parallelism, frequently to be found in the Missal, is particularly prominent during Septuagesima, Lent, on Holy Saturday and the first Sundays after Pentecost. [...]

The following table ... shows the order of the lessons at the divine Office during the seasons of Septuagesima and Lent, and how the Masses of these seasons should be studied in order the better to understand them.

SUNDAYS	BREVIARY LESSONS	MASS THEMES
Septuagesima	History of Adam	Christ the New Adam
Sexagesima	History of Noe [=Noah]	Christ the true Noe
Quinquagesima	History of Abraham	Christ the true Abraham
First Sunday of Lent	(Consideration of Lent supersedes that of Isaac)	Christ in the desert
Second Sunday of Lent	History of Jacob	Christ the true Jacob
Third Sunday of Lent	History of Joseph	Christ the true Joseph
Fourth Sunday of Lent	History of Moses	Christ the true Moses

Christ repairs the evil wrought by Adam; to the Church He is the true Noe, that is, the founder of a new race; far more than Abraham He is the Head of those whom God has chosen to be His people; in a better sense than Jacob He is the cherished and blessed one of God; in returning good for evil He outdid Joseph; although Moses was able to set free his people from the bondage of sin and feed them on manna in the desert, he did so only as a figure of Christ, the Saviour of His people who was Himself the true bread come down from heaven. To see thus the history of the people of God, of Christ and of His Church, as one related whole, reveals what was in the mind of the compilers of the Roman Missal, and by helping us to a better understanding of it enables us to participate more profoundly in the Paschal mystery foretold by Israel and brought to fulfilment by Christ.

During this Septuagesima season the Church dwells especially on the first three figures mentioned in the above table. There we see the fall of Adam resulting in original sin and its baneful consequences (Septuagesima); the malice of men in actual sin and the Flood which was its punishment (Sexagesima); and finally the sacrifices of Abraham and Melchisedech (Quinquagesima), which foreshadowed the sacrifice which God required from His own Son as a satisfaction for the sins of the whole human race. This assertion of the dogma of original sin and the portrayal of its lamentable results makes our blessed Lord's glorious title of Saviour stand out more clearly.

## Septuagesima Sunday

Comparison of the texts read in the Breviary this week with those of today's Mass brings out their meaning and implications very clearly.

The lessons and responsories in the night office are taken during the whole week from the book of Genesis; they relate the story of the creation of the world and of man, of our first parent's fall and the promise of a Redeemer, followed by the murder of Abel and Noe's genealogy back to Adam. "In the beginning," reads the Scripture, "God created heaven and earth, and upon the earth He made man. . . and He placed him in a garden of paradise to be mindful of it and tend it." St Gregory points out that Christ compared the kingdom of heaven to a householder who hired labourers to cultivate his vineyard. "Who could be more properly represented by the head of a household than our Creator who governs all creatures by His Providence and, just as a master has servants in his house, has His chosen ones in this world? His vineyard is His Church. All those who in the uprightness of their faith have set themselves, and urged others, to do good are the labourers in this vineyard. Those of the first hour together with those of the third, the sixth and the ninth, are the people of the Hebrews who, from the beginning of the world, striving in the person of their saints to serve God with a right faith, ceased not, so to say, to work at the cultivation of the vineyard. But at the eleventh hour the Gentiles are called, and to them are spoken the words: "Why stand ye here all the day idle?" (*3<sup>rd</sup> Nocturn, Matins*). Thus all men are called to work in the Lord's vineyard, by sanctifying themselves and their neighbour, thereby glorifying God since sanctity consists in seeking our supreme happiness in Him alone. But Adam failed in his task. "Because thou hast eaten of the tree, whereof I commanded thee that thou shouldst not eat," God said to him, "cursed is the earth in thy work; with labour and toil shalt thou eat thereof all the days of thy life ... In the sweat of thy face shalt thou eat bread till thou return to the earth out of which thou wast taken."

"After his sin the first man was exiled from Eden," St Augustine explains, "and involved all his descendants in the penalty of death and reprobation since they were corrupted in the person of him from whom they sprang. The whole mass of condemned humanity was thus plunged in misery, or rather, found itself in bondage and immersed in all sorts of evil" (*2<sup>nd</sup> Nocturn*). Today's Mass contains the same thoughts. "The sorrows of death surrounded me," runs the *Introit*; "we are justly afflicted for our sins," adds the *Collect*; in the *Epistle* St

Paul depicts Christian life as an arena where a man, to carry off the prize, must take pains and strive for the mastery. The reward of eternal life, the *Gospel* teaches us, is given only to those who work in God's vineyard, and since sin entered in the world, work there is laborious and hard.

This Septuagesima Mass, studied in this way in the light of Adam's fall, prepares us to begin this new period of the liturgical year and helps us to understand the sublimity of the Paschal mystery for which this season is a preparation. We should now have a clearer idea of all that Easter means and what the Church intends to remind us of when she tells us that God "who created man in a wonderful manner, more wonderfully redeemed him" (*Holy Saturday: Collect after 1st Prophecy*) and that "the creation of the world in the beginning was not a more excellent thing than the immolation of Christ Our Passover in the fullness of time" (*Holy Saturday: Collect after 9th Prophecy*).

*From the St Andrew Daily Missal, 1952.*

This is an expanded extract of which the first part appeared in *Daylight* No 7, March 1993. The section on Septuagesima Sunday has been added.

This commentary illustrates the contrast between what was "in the mind of the compilers of the Roman Missal" and those who compiled its replacement in the 1960s with the abolition of the Septuagesima season in preparation for Lent. Nowhere in the above passages is there the slightest hint that the Catholic Faith now interprets Genesis as other than historical fact. If the old Adam is to be consigned to the realms of myth, allegory and symbolism, what are we to make of the New Adam? The sin of Adam brought death and evil into the world, said St Augustine and St Gregory - so how can we accept an evolved pre-human bodily parentage for the first created human, who is compared with Christ Himself? The Flood was the punishment for the ante-diluvian world, from which only Noah [Noe] and his family survived to repopulate the Earth – and Genesis recounts the generations from Adam to Noah and from Noah to Abraham. Where is it now permitted to break the continuity and believe in some and disbelieve in others? These genealogies are included in the Gospels of St Matthew and St Luke, and these names and events are referred to by Christ himself and by other New Testament writers such as St Paul.

In a later issue, we shall look in more detail at the Flood and its symbolism in Catholic Doctrine.

## THE FIRST ORDER OF MAMMALIANS BIMANA, OR MAN

From *The Animal Kingdom* by Baron Cuvier [1893 Edition; pp 32-34]

Man forms but one genus, and that genus the only one of its order. As his history is more directly interesting to ourselves, and forms the standard of comparison to which we refer that of other animals, we will treat of it more in detail.

We will rapidly sketch whatever Man offers, that is peculiar in each of his organic systems, amidst all that he has in common with other mammalians; we will describe his principal races and their distinctive characters; and finally point out the natural order of the development of his faculties, both individual and social.

### PECULIAR CONFORMATION OF MAN.

The foot of Man is very different from that of Apes: it is large; the leg bears vertically upon it; the heel is expanded beneath; his toes are short, and but slightly flexible; the great toe, longer and larger than the rest, is placed on the same line with and cannot be opposed to them. This foot, then, is proper for supporting the body, but cannot be used for seizing or climbing, and as the hands are unfitted for walking, Man is the only animal truly *bimanous* [two-handed] and *biped*.

The whole body of Man is modified for the vertical position. His feet, as we have already seen, furnish him with a larger base than those of other mammalians; the muscles which retain the foot and thigh in the state of extension are more vigorous, whence results the swelling of the calf and buttock; the flexors of the leg are attached higher up, which permits of complete extension of the knee: and renders the calf more apparent. The pelvis is larger, which separates the thighs and feet, and gives to the trunk that pyramidal form favourable to equilibrium; the necks of the thigh-bones form an angle with the body of the bone, which increases still more the separation of

the feet, and augments the basis of the body. Finally, the head, in this vertical position, is in equilibrium with the trunk, because its articulation is exactly under the middle of its mass.

Were he to desire it, Man could not, with convenience, walk on all fours: his short and nearly inflexible foot, and his long thigh, would bring the knee to the ground; his widely separated shoulders and his arms, too far extended from the median line, would ill support the fore-part of his body; the great indented muscle which, in quadrupeds, suspends the trunk between the blade-bones as a girth, is smaller in Man than in any one among them; the head is heavier, on account of the magnitude of the brain, and the smallness of the sinuses or cavities of the bones; and yet the means of supporting it are weaker, for he has neither cervical ligament, nor are the vertebrae so modified as to prevent their flexure forward; he could therefore only maintain his head in the same line with the spine, and then, his eyes and mouth being directed towards the ground, he could not see before him; the position of these organs is, on the contrary, quite perfect, supposing that he walks erectly.

The arteries which supply his brain, not being subdivided as in many quadrupeds, and the blood requisite for so voluminous an organ being carried to it with too much violence, frequent apoplexies would be the consequence of a horizontal position.

Man, then, is designed to be supported by the feet only. He thus preserves the entire use of his hands for the arts, while his organs of sense are most favorably situated for observation.

These hands, which derive such advantages from their liberty, receive as many more from their structure. Their thumb, longer in proportion than in the apes, increases the facility of seizing small objects; all the fingers, except the annularis [and this to a certain extent], have separate movements, which is not the case in any other animal, not even in the apes. The nails, covering only one side of the extremities of the fingers, form a support to the touch, without in the least depriving it of its delicacy. The arms which support these hands have a solid attachment by their large blade-bone, their strong collar bone, &c.

Man, so highly favoured as to dexterity, is not so with regard to strength. His swiftness in running is much inferior to that of other animals of his size; having neither projecting jaws, nor salient canine teeth, nor crooked nails, he is

destitute of offensive armature; and the sides and upper part of his body being naked, unprovided even with hair, he is absolutely without defensive weapons: lastly, he is of all animals that which is latest to acquire the power necessary to provide for himself.

But this weakness has even been for him another advantage, in obliging him to have recourse to those internal means—to that intelligence which has been awarded to him in so high a degree. No quadruped approaches him in the magnitude and convolutions of the hemispheres of the brain, that is to say, of that part of this organ which is the principal instrument of the intellectual operations; the posterior portion of the same organ extends backwards, so as to form a second covering to the cerebellum; even the form of the cranium announces this great size of the brain, as the smallness of the face shows how slightly that portion of the nervous system which influences the external senses predominates in him.

These external senses, however, moderate as they all are in Man, are yet extremely delicate and well balanced. His two eyes are directed forwards; he does not see on two sides at once, like many quadrupeds, which produces more unity in the result of his vision, and concentrates his attention more closely on objects of this kind. The ball and iris of his eye vary but little, which restrains the activity of his sight to limited distances, and to a determined degree of light. The conch of his ear, possessing but little mobility or extent, does not increase the intensity of sounds, notwithstanding which, of all animals, he best distinguishes their intonation. His nostrils, more complicated than those of apes, are less so than those of all other genera; and yet he appears to be the only animal whose sense of smell is sufficiently delicate to be affected by unpleasant odours. Delicacy of smell must influence that of taste; and Man must have a further advantage, in this respect, at least over those animals whose tongues are covered with scales. Lastly, the nicety of his touch results, both from the delicacy of his teguments and the absence of all insensible parts, as well as from the form of his hand, which is better adapted than that of any other animal for suiting itself to all the small inequalities of surfaces.

*[This section on Man to be concluded in a later issue]*

## Blessing the Baptismal Water

(Traditional Catholic rite)

These extracts from the prayers used in the Easter Night ceremonies vividly and explicitly draw on the texts of Genesis.

“O God, whose Spirit in the very beginning of the world moved over the waters [Gen 1: 2], that even then the nature of water might receive the virtue of sanctification. O God, who by water didst wash away the crimes of the guilty world, and by the pouring out of the deluge didst give a figure of regeneration, that one and the same element might in a mystery be the end of vice and the beginning of virtue [Gen 6-8].”

“Wherefore I bless thee, O creature of water, by the living God, by the true God, by the holy God, by that God who in the beginning separated thee by His word from the dry land, and whose spirit moved over thee [Gen 1: 6-10]. Who made thee flow from the fountain of paradise and commanded thee to water the whole earth with thy four rivers [Gen 2: 10-14].”

### The Scriptures may need an interpreter

“Then He said to them: O Foolish, and slow of heart to believe in all things which the prophets have spoken... And beginning at Moses and all the prophets, He expounded to them in all the Scriptures the things that were concerning Him [Luke 24: 25,27].”

“For they that inhabited Jerusalem, and the rulers thereof, not knowing Jesus, nor the voices of the prophets which are read every Sabbath, judging Him have fulfilled them [Acts 13:27].”

“These are the words which I spoke to you while I was yet with you, that all things must needs be fulfilled which are written in the law of Moses, and in the Prophets, and in the Psalms, concerning Me. Then He opened their understanding, that they might understand the Scriptures [Luke 24: 44-45].”

“And Philip running thither, heard him reading the prophet Isaias; and he said: Thinkest thou that thou understandest what thou readest? Who said: And how can I, unless some man show me? [...] Then Philip opening his mouth, and beginning at this Scripture, preached unto him Jesus [Acts 8: 30,31,35].”

*Catholic Tradition derives its authority from the teaching of the Apostles.*



Rembrandt, The Baptism of the Eunuch, 1626; Museum Catherine Convent, Utrecht

## The Creation of Eve

“We record what is to all known, and cannot be doubted by any, that God, on the sixth day of creation, having made man from the slime of the earth, and having breathed into his face the breath of life, gave him a companion, whom he miraculously took from the side of Adam when he was locked in sleep. God thus, in His most far-reaching foresight, decreed that this husband and wife should be the natural beginning of the human race, from whom it might be propagated and preserved by an unfailing fruitfulness throughout all futurity of time.”

Pope Leo XIII, Encyclical *Arcanum Divinae Sapientiae*, 1880.



“God certainly could have created Eve directly from a bone taken from Adam, but is there a deeper explanation, involving DNA and the use of X and Y chromosomes? Perhaps God took a small portion of tissue/cell from the side of the sleeping Adam, removed the Y chromosome and duplicated the X chromosome so that the cell was now female, and then caused rapid growth to produce the body of a perfect woman, genetically compatible with Adam. [...]

“Whatever the actual details involved, it seems clear that some part of Adam’s body was definitely involved when Eve was created. We are told in Scripture that Adam was aware of this aspect: “This now is bone of my bones and flesh of my flesh; she shall be called woman, because she was taken out of Man.” (*Gen. 2:23*). Otherwise, why not create both Adam and Eve simultaneously?”

Keane, G. J. *Creation Rediscovered*, Tan Books, 1999, p.60.

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