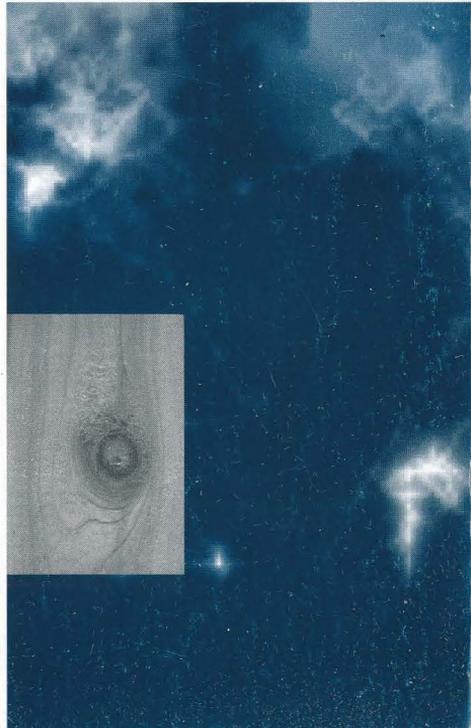
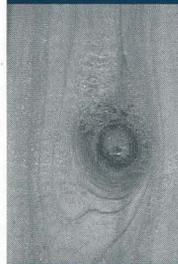




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Faith and Thought



FAITH and THOUGHT

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Editorial

With this issue of the *Faith and Thought Bulletin*, now returning to the title *Faith and Thought*, Dr. A.B. Robins hands over the editorship entirely to the Assistant Editor, Mr. R.S. Luhman. Dr. Robins became Editor of the journal *Faith and Thought* (which had replaced the *Journal of the Transactions of the Victoria Institute [JVTI]* in 1957) at the end of 1985, following, after a short interim, the tenure of Dr. R.E.D. Clark, who died in November 1984. Under Dr. Robins' guidance, we went to co-publication with Christians in Science of the other journal *Science and Christian Belief*, and of this he was for many years Reviews Editor. It was in tandem with this that he developed first the *Faith and Thought Newsletter* and then the enlarged *Faith and Thought Bulletin*, and he has presided over this in an exemplary manner for nearly twenty years. The Institute owes him a great debt of gratitude for his long valuable contribution, and at the Council Meeting when the hand-over was approved, he received a unanimous vote of thanks.

The new Editor would welcome the submission of manuscripts relevant to the aims of the Institute for possible publication and he would be glad to receive short notes on individual points as well as correspondence relating to articles, which have appeared in the journal.

T.C. Mitchell (Chairman of Council)

Faith and Thought Prize Essay Competition

A prize of £500 is offered for the best essay on the subject:

Is God to Blame for Human Suffering?

CLOSING DATE: 31 January 2006

Competition Conditions:

1. Faith and Thought will own the copyright of the essay, though the author will normally be permitted to embody it in a later, more comprehensive work.
2. It should not exceed 7,000 words, excluding documentation, typewritten, with double spacing and 2 cm margins.
3. It should be submitted to the Honorary Secretary's address, accompanied by a brief synopsis of 200 words setting out which parts are claimed to be original, along with a sealed envelope with a motto outside and the author's name and address inside.
4. As an encouragement to younger writers, candidates, where applicable, may add to their motto the words, 'Under 25' or state their date of birth: neither is published.
5. Entries will be professionally refereed and if the referees consider the prize should be divided between two authors, the trustees' decision will be final.
6. If no submissions are deemed worthy, the right to withhold the prize and to publicise another competition thereafter will be exercised.
7. The prize is normally announced at the subsequent AGM.
8. Officers of the Victoria Institute may not participate.
9. Submission of an entry will indicate candidates' assent to all these conditions.

ADVANCE NOTICE:

Joint Symposium on 'A Christian Framework for Sustainability'

(Victoria Institute, Christians in Science and John Ray Initiative)

- Date:** Saturday October 1st 2005
- Place:** St. Paul's Church, Robert Adam Street, London W1
- Speakers:** Sir John Houghton FRS, Sir Ghillean Prance FRS and Sir Brian Heap FRS (scientists)
Donald Hay (economist)
David Bookless of A'Rocha UK (theologian)

There will be small group discussions on practical topics.

- Further details will be given at a later date •

Did Christ Die For E.T. As Well As For *Homo Sapiens*?

Tom Hartman

Synopsis

This is an original work and attempts to explore the following issues:

Are there limits to God's love and His saving grace?

Can there be life and intelligence aside from on Earth?

What criteria must be fulfilled for God to introduce His image on a species?

What must I be to be saved?

Is the Earth a closed system for sin?

While the essay title asks an imaginative question that goes to the very root of our beliefs it has many repercussions for contemporary topics such as the relationship between God and other animals, God and people who are, for whatever reason (injury, genetic abnormality, mental disability), unable to relate to themselves and others and, perhaps the advent of machine intelligence. We are also invited to imagine a world without sin and reconsider the redemptive action of Christ. To consider these things is to be reinvigorated for service and mission, to cherish the Earth and the 'fulness thereof' but also to be prepared for the possibility of first contact.

The author believes this exploration of humanity to be entirely original, but gladly acknowledges the influence of many others in a bibliography attached at the end.

Introduction and presuppositions

To answer the question 'did Christ die for ET as well as *Homo sapiens*?' we must explore several key issues, ones that explore key foundational truths about the nature of God, the universe, intelligence and being.

The Bible is quite clear, from its opening statements at the beginning of Genesis to the close of Revelations, that the Lord is God of the entire universe and not in any way restricted to time or space. As creator, He brought all things, matter and energy, into being from nothing and, as our current understanding of physics and cosmology indicate, these must include space-time and all the eleven (or more) dimensions too. The grandeur of the universe bears witness to a God who creates and sustains the universe in all its complexity from the interactions of sub-atomic particles to galaxies and beyond. The majesty of God as creator and the intricacy of creation are one aspect of the scale upon which God operates. Yet despite such awe-inspiring majesty when recognising the immensity of the

universe, the revelation of God, both in creation and the Bible, also witnesses to His care of and interest in organic life and, in particular, human beings, creatures that inhabit a planet unique in the solar system as being filled with life in myriad forms.

The Bible, also, is unambiguous about God's interest and love of His creation even to the extent that the second member of the Trinity became flesh, embodied so that by His death and resurrection, human beings may be restored to their correct relationship with God and their lives redeemed. The outworking of this sacrifice, however, is not limited to the humans that inhabit the earth but also to the rest of creation (Romans 8). Indeed, in one of the most dramatic statements in the Bible, often dimmed through its familiarity, John writes that 'God so loved *the world* that He gave His only son' and in that demonstrates that His concern is much wider than the personal salvation emphasised often in the west today.

This establishes the prime notion; that God is in control and that while natural revelation can illuminate some aspects of His character, special revelation is needed in order to provide the incentive for a personal response.

The question, however, 'Did Christ die for ET as well as for *Homo sapiens*?' begs for further analysis and to answer this question other matters must be considered.

The questions that arise are:

1. Are there limits to God's love and His saving grace?
2. Can there be life and intelligence aside from on Earth?
3. What criteria must be fulfilled for God to stamp His image on a species?
4. What must I *be* to be saved?
5. Is the Earth a closed system for sin?

To answer these we must establish whether or not there are constant laws or rules that operate throughout the universe in order to enable predictions to be made and tested. Some of these questions are entirely hypothetical and many cannot be answered without extraterrestrial contact, but they can prepare us for such an event (however unlikely), but they also have relevance to other pertinent issues such as:

- Estimating the intelligence of other earthly species and whether, as some have suggested, they have a different kind of spirituality.
- What sort of spirituality is experienced by people with mental health problems or disabilities, genetic disorders or persistent vegetative states? How can the church fulfil their needs?

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- What is it to be human? Is humanity imprinted on a person at conception or at birth? Should it be considered as a process that develops and changes over time and that the process must be respected as being changeable and age-appropriate? The concept of the soul as defined by pre-modern (and many modern) theologians and philosophers is important here. The soul was not some nebulous entity attached to a person, but was seen as relating to someone in much the same way as an expression is related to a face. Human-ness is a matter of the entirety of a being and we are not distinguished from other animals by God through a particular anatomical behavioural trait.
- One lesson from history is that technological superiority is not an indicator of God's special blessing as it was perceived not so long ago. Furthermore, there were debates being held as to whether various aboriginal races or women had souls. This question leads us to examine the use and abuse of power.
- There are also those who believe that we will soon be faced with a new intelligence on our planet: non-biological intelligence. This question has a bearing on whether machines can have metaphysical demands.
- We are also invited to examine what we are: people caught in the tension between good and evil and the shades of grey in-between. This question asks us to consider a view of the universe that we can barely conceive, a view of reality that we can only know hypothetically, a society without sin.

Question 1. Are there limits to God's love and His saving grace?

As intimated in the introduction, God's creative actions (however you interpret the opening chapters of Genesis) are extravagant and enthusiastic. The Lord takes pleasure in creation and proclaims it to be good. This culminates in the creation of a creature upon whom the Lord invests His breath, something unique among all the animals, but which also engenders special responsibilities. While the Bible witnesses to this special relationship between God and humanity there are plenty of references to the relationship between God and the Earth and, indeed, God and other species. The final chapters of Job, the longest reported speech by God in the Bible, are a hymn of God's delight in His creation, listing astronomical phenomena, geological processes, animal shape and prowess time and time again.

Genesis also reports the fall where human disobedience fractures that relationship and sets the stage for Christ's redemption. The fall alters relationships between humanity and God, between people, between people and the Earth and the internal conflicts of a person ill at ease with themselves. Despite this, even a

fallen creation has much to delight its Creator's eye (the events of Job are described after the fall). God's positive attitude to creation is corroborated time and time again in the teaching of Jesus who constantly refers to natural phenomena, beauty and everyday activities as a way to give his lessons relevance and make them memorable to his audience.

From this we can deduce that there are universal constants about the Lord. First, that He cannot be untrue to Himself. This is an axiom testified to by our experience, but also by the nature of the universe which, as far as it can be known, is constant and without contradiction in the way that it behaves. Though it may be argued that God may change His mind in response to prayer, e.g. the pleading of Abraham to spare Sodom, it is also a theme running throughout scripture that God is constant and without contradiction. Such consistency is implicit in scriptures like 1 John 1:5 'God is light and in him there is no darkness at all'. Thus it is reasonable to extrapolate that the universe, too, is of one character throughout even though this may be very strange and even incomprehensible to human beings (either completely or just at this time) because in this way it reflects its creator. This argument may be circular, to a degree, but it does deal with premises that are infinite or nearly infinite to our perspective.

Secondly we can assert that scripture bears witness to the fact that a loving God created the universe. Love is God's character and that this is worked out through the act of creation with justice and mercy and that His grace is also found throughout the universe because there is nowhere in the universe that is outside of God's jurisdiction. The theologian Moltmann suggested that the universe is a part of totality from which God has partially withdrawn in order to allow the possibility of (and through rebellion, actual) evil. Others contest this on the grounds that it makes the fall inevitable. They maintain that God's perfection would be compromised by a withdrawal and that rebellion must be a matter of choice not destiny. Thus a good, loving and merciful God can be present in a fallen and sinful world. This can be attested to through the witness of the Bible and also through the experience of people throughout history irrespective of geography or culture. Without God nothing exists that does exist and so despite the reality of evil and decay the prospect of change is also infused with opportunity and goodness.

Thirdly, we must also note that it is in God's character to communicate. The Bible testifies that there may be great periods of silence, but these are interspersed with periods of monologue and dialogue. The opening chapters of Genesis start with a word being spoken and action following. Indeed, Jesus himself identifies as the 'word of God' who became human. God's spoken words are authoritative, creative, restorative and good.

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So the first constant is that God is creator, the second is that He is sustainer and the third is that He is communicator. These properties are held to be true throughout the whole universe and that His character remains constant despite geography, scale or time. These are statements of faith untestable by science but attested to by history and experience. They are recorded in the Bible and, despite various exegetes depending on differing theological persuasions; they rely on faith in special revelation; that God chose to reveal Himself in various ways to various people and they recorded what they saw and heard. These documents have been handed down from generation to generation and, through the work of the Holy Spirit, are relevant and vital to today.

These characteristics are held to be true throughout the Bible and testify to God's intrinsic qualities. It is reasonable to suppose that the creatures into whom God has breathed the 'breath of life' were able to respond in an appropriate fashion. On Earth it was us, on other planets it may be creatures that are vastly different in biology, but with similar qualities.

The second series of universals are revealed from the 'witness of creation' by the activities of science. Scientific activity is itself founded on the untestable statements of faith. Scientists assume that the universe should be comprehensible, that it has a logical structure amenable to empirical investigation and that they, with hominid brains honed by their evolutionary past (with or without divine intervention) should be capable of unravelling and understanding this complexity. These assumptions are taken as true even though they have no basis other than faith. This is important to understand as these assumptions undergird modern (and post-modern) society. As Lesslie Newbigin commented, 'in the act of criticism we rely on assumptions that, at that moment, are held uncritically'. The claims of science are held to be true because they provide a model of reality that has a predictive component, that there are universals that can be deduced by the study of nature and that these, if they are correct, will be applicable throughout the universe. Science does not (or should not) claim to hold absolute truth, but to approach it by the systematic formulation and testing (and discarding) of hypotheses within its operating remit. Science can test cause and effect, but not purpose: this is excluded.

What can be concluded, however, is that there is a confluence between the universals derived from God's revelation through nature (and revealed by science) and through the Bible (revealed through careful interpretation and the ministry of the Holy Spirit). These are that God's character is constant and the universe obeys particular laws. With these corner-stones firmly in place we can address the next question.

2. Can there be life and intelligence aside from on Earth?

The title of this essay invites speculation about the universe that is based on

extrapolation from a series of scientifically determined facts i.e. ones that have been tested empirically to formulate theories. The Bible itself restricts itself to Earth based information concerning life though it is taken as read that in an essay of this sort there exists, unbound by the constraints of the universe, a creative intelligence that is God who exists in a Trinitarian state and who has created a host (angels, archangels, etc.) that also have intelligence. Similarly Jesus identified himself as 'the life' as well as 'the way and the truth', which can be interpreted as the dynamic nature of faith when he calls us to 'follow Him'. But this can also remind us of God's role as sustainer, that nothing happens without the divine will.

What of the rest of the universe, created by God with certain physical properties? Scientific studies reveal that there is a great measure of self-organisation within organic chemistry so that amino acids and nucleotides can form in space and complex molecules assemble where certain conditions are met. While our sample size of life bearing planets is one, there are two other locations within our solar system where life may occur, namely Mars (where if it ever did occur it is now almost certainly extinct) and Europa, the moon of Jupiter, where water and geothermal heating may provide conditions similar to Earth's deep ocean 'black-smoker' vents. If it is discovered that life exists or ever existed on either of these worlds (and originated there as opposed to colonising from meteorites originating from Earth) then the likelihood of life being common throughout the universe is greatly bolstered.

In general, we remain fairly committed to life developing in an Earth-type way, but this is not necessarily the only way that may be feasible and several people (mainly, but not exclusively science fiction writers) have considered more 'unearthly' life forms in, say, the clouds of Jupiter or on other moons of either Jupiter or Saturn. These may give rise to life systems but it is difficult to imagine how intelligence can evolve in such a volatile environment. This may be a failure in imagination. Certainly on Earth, once life is established then it becomes quite hard to annihilate as there are always some species that live in 'protected' niches that survive catastrophes. During the Permian extinction 95% of species became extinct, but the survivors radiated to fill the empty environments remarkably quickly. In the past few million years vegetation cover on the Earth has changed markedly during periods of glaciation. Tropical rainforests, for instance, diminished into small pockets, but swiftly re-established themselves to dominate huge areas of land when conditions changed. Lovelock proposed the theory that the biosphere becomes locked into the geology of a planet so it becomes one self-regulating unit (termed geophysiology before it was given its populist title Gaia). While there is some contention about the scale of such a homeostatic interaction there is plenty of evidence that in some parts of the biosphere life modifies the environment to make it more hospitable, regulating rainfall, affecting nutrient flow etc.

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What the initial conditions are to start life is unknown and, again, are untestable, but many theories abound and other planets will need to be explored before the competing hypotheses can be evaluated. Even so, it may well be that the conditions on Earth were unique, but that life based on nucleotide/protein biochemistry is not.

The notion of life on other worlds and its theological ramifications is not new and there was even debate among the Greeks in the 5th century BC concerning their 'plurality of worlds'. In modern times Drake focused the debate in 1960 when he produced an equation to estimate the number of technological civilizations there could be for our galaxy. This depended on positing figures for a number of variables:

- the rate of formation of stars
- the total number of stars
- the number of stars with planets
- the number of those planets capable of supporting life
- the number of those where life evolved
- the number of life systems that gave rise to intelligence
- the number of those that gave rise to technological civilisations capable of interstellar communication and
- the lifetime of such a civilization before it expires (through war, pollution or some other catastrophe).

With estimates of many of these numbers varying widely giving a range of numbers that can vary by 14 orders of magnitude! That could mean that, for our galaxy, as many as one in thirty stars could harbour planets on which civilization thrives to nearly none. This clearly needs serious refining, but makes the point that our understanding of the universe is still rudimentary. The enticing feature of the Drake equation is that it replaces a lot of complex interactions with a ballpark figure (this is 'mean field theory' widely used by population geneticists to evaluate gene flow). One interesting notion is that life, once established, would also follow the 'universal' that is evolution. Once a mutable system of heredity and a life cycle that includes reproduction occurs then competition would drive life into a 'descent with modification'. This is considered by many biologists to be the only way complex life can arise.

For our theological argument we are interested in alien beings that are sufficiently responsive to be able to interact with God in relationship rather than have invented mathematics and radio telescopes, but the key question of intelligence or the ability to make response is one that we must turn to next.

For biological systems (such as ourselves) questions of the occurrence of intelligence can be answered in two ways. First, that it may be a feature that is added by God and extrinsic to biology and, if this is the case, then there is little more to be said. It is a matter of faith and cannot be investigated by scientific means. This would be a statement that many special (or six-day) creationists would be able to support as such an assertion would state that there is a qualitative difference between other animals and human beings rather than a quantitative one. Similarly this would fit in with some of Descartes' views that non-human animals are merely machines, without comparable drives or demands or, indeed, rights.

Most biologists, certainly those involved with comparative ethology and behavioural ecology would reject such a notion. Their view would be that intelligence is a product of evolutionary selection and, indeed, many theories as to the selective pressures that would promote intelligence have been proposed. They would also suggest that the evolution of intelligence is a continuum and that different species may show different levels. This is not to fall into the trap of saying that there is a directed progress towards, say, human intelligence, which is perfect, but that there is a continuum upon Earth where similar selective pressures have acted on an assortment of animals to produce an internalised mental environment in which they have a sense of self, a means of distinguishing self from non-self and the capacity to prepare for impending action to expedite the attainment of a particular goal which is not part of its general behavioural repertoire (such as gathering twigs to build a nest in anticipation of laying eggs, for example). Such capacities have been noted in a number of mammals apart from the primates (dogs and pigs), several bird species (mainly from the crow and parrot family) and intimated in some others such as octopi (the only invertebrate) and crocodiles. One feature that has been closely linked with intelligence (rudimentary and complex) has been the phenomenon of play where young animals socialise or learn skills for later life by playing with each other, other animals (generally unwilling participants) or inanimate objects. With this factor, many other animals can be added to the continuum including terrapins and turtles and possibly even frogs.

Many of these 'natural' traits are enhanced by contact with humans. chimpanzees and gorillas have been taught sign language and they teach this richer form of communication to their offspring. Dogs are certainly very different to their wild relatives and birds, once relieved from the pressures of their habitat fill the time that would be spent foraging and socialising by investigating their environments and interacting with their owners.

So far we have evaded any attempt to define intelligence, a pursuit fraught with difficulties especially when, in an attempt to appear objective, scientists use terms that attempt to remove anthropocentrism. Perhaps one way is to consider a

definition and then add caveats to exclude certain creatures. If intelligence is to be motivated to solve problems involving referral to an 'inner sense of self' and formulate a plan (i.e. solve problems) to achieve a goal then this, at least, excludes the social insects. This may involve ingenuity to use tools as seen in chimps and sea otters and Egyptian vultures, but then do we have to add another level for the New Caledonian Crow which manufactures different tools to achieve different aims? It may involve intrigue and deception as shown by gorillas and the delayed implementation of a particular behaviour to maximise advantage. From the analysis of life on Earth, we can conclude that intelligence has evolved several times in various non-connected organisms. But in the end we are left with questions that are, at least to many philosophers, unanswerable.

Do they know who they are? Can they think? Can they make choices? Is there a possibility of meaningful communication?

Perhaps more germane to our argument is another question: Can they love? If the primary defining character of God is love and it is this that demands a response then what love is (apart from mapping out what part of the brain is involved) must be included in our enquiries about E.T. This leads us to the next issue.

3. What criteria must be fulfilled for God to stamp His image on a species?

For humans, however, the current scientific hypothesis is that intelligence is an epiphenomenon, an emergent property developed from a complex interplay between genetics, environment and development. Some environmental factors, such as exposure to lead, or some genetic factors, such as an extra chromosome 21, markedly affect intelligence. In play and through observation many animals learn to adopt behaviours that serve their parents well and indeed cultural transmission of new behaviours have been well documented such as, in the UK, songbirds learning to peck open milk bottle tops to drink milk and, in Japan, macaque monkeys learning from a single female that washing their food in water removes particles of sand. This adaptability and sociability is extremely well developed in humans and must be an important component of what selected them to be bearers of God's image.

What does an organism need if it is to interact with God? It is easy to make big assumptions here. It would be easy to suggest that there must be some common terms of reference and that these centre around recognising the self in order to communicate with the non-self i.e. to be in relationship with others, God included. This is but one suggestion and it may be that there are more metaphysical traits involved here. Perhaps the capacity to love and live in submission to God, characters that are not amenable to scientific definition are the key to this issue. This would certainly allow for more latitude in accounting for the relationship between God and those who, for reason of injury or mental disability, are unable

to respond to God (or do not have the ability to recognise themselves or communicate) with the means available to most or through deliberate choice. We cannot suppose that a relationship with God is only dependent on intelligence.

The confluence of these tangible and less tangible characters, seen in human beings, lead us to the next section where we consider whether this collection of linked, but distinctive factors may, at a certain level of complexity, create a cut-off point and whether these are exclusive to people (at least on this world).

4. What must I be to be saved?

What is it that distinguishes our (more remote) ancestors from other species? Take the dinosaur *Troodon* for instance. It was bipedal, it had manipulative, grasping hands, stereoscopic vision and a complex brain. These animals may have had extensive parental care of the young, they were probably social and may well have been cooperative hunters with a behavioural repertoire that was learned as well as innate. Could they have been candidates for God's favour had they survived and continued to develop? Would they have had scripture revealed to them? Would they have fallen and God's anointed one become incarnate as a dinosaur? What capacities make humans special? How do these translate as properties that must be imbued in other species for an E.T. to be in a position to have a relationship with God: to be in His image?

Humans are self-aware. We have a complex internal model of the world through which we can make predictions about possible outcomes and rehearse them. Through our mental workings we can plan, design and build. All of these, as noted above, have rudimentary parallels in the non-human world. Furthermore, we have idealistic hopes and desires that come from knowledge of good and evil (something that some anthropologists suspect in chimpanzees). Humans love and again there are possible parallels of love found in other animals when linked to other emotions. Elephants appear to grieve when members of their herd die, dolphins support injured members of their school and chimpanzees may have as rich an emotional life as any human. Ultimately, however, it is an extrinsic factor that defines our humanness in ultimate terms: that of bearers of God's image, something that is added externally to a suitable candidate and involves relationship and embodies responsibility to act as God's vice-regents, stewards over His creation (as much of it as we can influence).

Perhaps the capacity to visualise an ideal state and recognition of how far from that state we are determines both the need for salvation and the possibility of accepting forgiveness from a merciful God. Without these mental constructs, without imaginative perception (which enables technology to develop and, indeed, science to be pursued) there can be no recognition of grace, repentance and redemption. But there again there is another baseline below these cranial capacities. They must be underpinned by a capacity for love and a need to be

loved. Then, perhaps, aliens, some of whom may have no sense of self (like some people), can know the love and compassion of God. For an E.T. to be saved they must know their need of God or be able to make some response or enter some sacred communion.

This leads us to a further question. When humanity fell from grace, did they drag every piece of matter in the universe with them? Are all (any) alien races awaiting humanity in its entirety to be restored to God before creation ceases to groan? Are there alien races awaiting our contact with the good news to be restored?

5. Is the Earth a closed system for sin?

The second of the two creation narratives found in Genesis chapters 2 and 3 is very specific about the sequence of events in terms of human innocence and the rebellion inspired by temptation. Again, this passage may not necessarily be written as history, but embody a truth of experience cloaked within a story that can be universally understood.

The cause of the rebellion was inspired by temptation offered by a fallen angel. Jesus records that He saw Satan fall from heaven, cast out from God's presence and able to disrupt God's good creation. This implies that the tempter is abroad in the universe and temptation is everywhere. The Bible describes original sin as being the desire for unrestrained knowledge, a practical understanding of good and evil rather than a theoretical one, to be as God is (but without His goodness, power and holiness). This was sin and it tainted human relationships at every level. They were disrupted between humans and God, between the genders, between humanity and the Earth and within the human self. Nothing was untouched and, while the goodness of creation is still there and acknowledged by God as witnessed in the closing chapters of Job and in the psalms, it is marked by sin requiring God to send His only son, Jesus Christ, to redeem the situation and reconcile all things to God.

But is the fall as described in the Bible restricted to humanity and the environment that humans affect? Could an E.T., also inspired with the image of God, suddenly find their relationship tarnished by the events of humanity on a distant planet?

Is the distance between stars a way of isolating different sentient species so they cannot contaminate one another? This would seem unlikely. The way back to Eden may be guarded by an angel with a flaming sword, but the geography of the galaxy results from known laws of physics. The question of the fallen state of other civilisations does raise interesting issues that may, indeed, inform our own sense of destiny and mission.

What would society be like if the world was sinless and not influenced by the fall, where humanity was not banished from God's presence, where life and purpose

was not detached? Could an unfallen E.T. show us what a true relationship with God is like? How Christ-like would an alien be? These issues may be theoretical but they do have parallels with the incarnation. What was it like to be with Jesus Christ, to walk and talk and eat with Him? While Jesus Christ was fully human He was also fully divine and his example teaches us about how to live within the frailty of our humanity, all our subconscious passions and desires, all the behaviours honed by our evolutionary past.

What did Christ have extra to humanity and would contact with an unfallen E.T. result in their being persecuted by humanity? Christ was both God and man and He lived His life as a human, eating and drinking, being with His friends, getting angry and frustrated and even committing premeditated violence (cleansing the temple) without committing a sin or compromising His holiness. The spiritual lives of aliens may be utterly different to anything that we can imagine, but through the lens of Jesus Christ we have an example of conduct and compassion that should enlighten us if the opportunity ever presents itself.

Did Christ die for ET as well as *Homo sapiens*?

We have established that the likelihood of other civilisations existing in space as high given the enormous number of planets that exist, the tenacious grip that life exerts once it exists and the universality of natural selection once heredity and mutable genetic codes are established. We have also noted that the uniqueness of humans is not restricted by anatomy or behavioural intelligence or tool use or language, all of which have other examples in nature albeit more rudimentary. Instead the Bible offers us a less tangible factor concerning the inhalation of God's image and implicit in that is relationship, but one that has responsibility embossed in it, responsibility to God, one another and creation. The question of whether the fall of humanity, linked with that of creation is limited to the Earth or involves the rest of the universe is unresolved as we have limited data to interpret revolving around a few verses of scripture concerning the ultimate fate of the universe and no other data. However, when we are specific and take into account the 'universal constants' concerning the character of God and the nature of the universe then we can make the following statements:

1. God's holy nature is love tempered with justice.
2. That all creation will be reconciled to Him through that love and justice in the fullness of time.
3. That life (as we know) is tenacious, resilient and likely to be an emergent property where the correct conditions are met.
4. That consciousness, intelligence and concomitant internal, mental constructs concerning self and others are not an unlikely product of natural selection as they have evolved in many different animals (to various degrees).

5. That relationship is crucial to God imparting His image to a creature and thereby making it special (as He has chosen to do with humanity) and that, at least for humanity, is dependent on love and submission.
6. That the fall is a result of deliberate choice to reject God's will and prefer self.
7. That redemption is through the selfless act of Christ, God's anointed one, overcoming death through which He reconciles, not only humanity to God but all things (Col. 1:20).

What we cannot infer is that the biblical writers were in mind to include other alien races in their narrative or whether their redemption is assured by the actions of a first century Jew on planet Earth. Here we meet the paradox of the 'historical Jesus' and the 'cosmic Christ': the former an incarnation to the intelligent, mammalian bipeds restricted to planet Earth, and the latter seated at the right hand of the Father with complete knowledge and complete control. Was the single incarnation on Earth enough to redeem E.T. or would He be incarnate on other worlds and in other forms? Only contact with extra-terrestrials will settle this debate.

Perhaps it is as the songwriter Larry Norman wrote in the 1970s:

"And if there's life on other planets
And I'm sure that He must know
And He's been there once already
And has died to save their souls."

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New Light on the Siloam Tunnel Inscription

T.C. Mitchell

Recent physical analysis of materials has thrown new light on one of the best known ancient Hebrew inscriptions. The Siloam Inscription was located in a water tunnel which runs south-westwards from a spring ('Ain Sitti Maryam, known as the Virgin's Spring probably the Gihon Spring mentioned in 2 Chronicles 32:30) at the northeast corner of the most ancient part, the Ophel Hill, of Jerusalem. The tunnel follows a somewhat irregular course from the spring to the southwest corner of Ophel Hill where it debouches into the Pool of Siloam¹. This inscription, which was situated on the east wall of the tunnel about 19 feet in from the lower pool, was first noticed in 1880 when, according to Conrad Schick (known particularly for his model of the Temple in the time of Herod), one of his pupils fell into the water. Schick promptly entered the tunnel to inspect the inscription and found that the lower part was below the water line, so debris had to be cleared from the bottom to lower the level. He found also that, as he put it, "a deposit of silicate" had covered the inscription, making it very difficult to take a paper squeeze (*papier-mâché* impression). He published an announcement of the discovery in the *Quarterly Statement of the Palestine Exploration Fund* in 1880². In the *Quarterly Statement* for the following year Lieutenant Claude Conder of the Royal Engineers, who was on detachment to the Palestine Exploration Fund to work on the Western Survey, reported that Hermann Güthe, of the German Palestine Society *Deutscher Palästina Verein*), had succeeded in taking several paper squeezes and a gypsum cast of the inscription³. In the same volume Archibald Henry Sayce, who was very prominent at the time in expounding discoveries of this kind, published a preliminary translation.⁴ In 1890 the inscription was hacked out of the rock wall, and, since at that time Palestine formed part of the Ottoman Empire, it was taken to Istanbul where it is now held in the collections of The Museum of the Ancient Orient (formerly Imperial Ottoman Museum). Parts of the inscription are damaged but, as a tracing made in 1881 by Lieutenants Conder and Mantell of what could be made out of the inscription *in situ* shows,⁵ it was already in this damaged condition before it was removed. They had found it difficult to discern the details because of a layer of lime (calcite) which had formed over it, but they cleared some of this off with hydrochloric acid.

The language of the inscription was recognized as Hebrew by Sayce and others, and seen to be of great interest. It has been familiar to generations of English-speaking students of Hebrew since a copy and a transcription into the Square Hebrew script were included in the English edition published in 1910 of the

Hebrew Grammar of the great German Hebraist Wilhelm Gesenius, for long the standard reference grammar,⁶ and three years later a photograph, a transcription into the square Hebrew script, a translation together with philological notes on it were provided by S.R. Driver, with characteristic thoroughness, in his standard commentary on the Hebrew text of the books of Samuel.⁷ He noted that "The Hebrew is as idiomatic, and flowing, as a passage from the Old Testament",⁸ but while he commented that it had generally been assigned to the time of Hezekiah, he referred to other options put forward at the time that it was actually to be dated in the period of Simon son of Onias in about 220 B.C. or even by some to the time of Herod.

The inscription describes the cutting of the tunnel and since, unlike many monumental inscriptions of this type, it does not name any king,⁹ its dating has depended on the palaeography of the script and on its presumed connection with references in the Old Testament to the cutting of a water channel in the time of Hezekiah (2 Kings 20:20; 2 Chronicles 32:3-4, 30). On these bases, it has been generally agreed that it should be dated to about 700 B.C.¹⁰

The new physical evidence makes use of two techniques: radiocarbon dating of organic material, and radioactive thorium and uranium dating of calcite speleotherms¹¹ formed by water seeping through the rock.¹²

The organic matter, notably a fragment of wood and part of a plant, was found in borings into the floor of the tunnel, which had been plastered over in antiquity to counter the seepage away of water through fissures in the rock. Radiocarbon dating of these samples gave a figure of 2620 ± 35 years BP (Before the Present) = 822 - 796 B.C. for the wood and 2505 ± 35 years BP = a range between 790 - 760 and 690 - 540 B.C. for the plant fragment.

Samples from the speleotherms which had formed on the walls and ceiling of the tunnel as a result of water percolating through fissures in the limestone were tested for radioactive thorium and uranium, giving dates of 2317 ± 18 years B.P. = 332 - 286 B.C.

The radiocarbon date of about 800 B.C. for the fragment of wood might show only that the tunnel had been cut at some time after that date but, as the authors of the article point out, trees more than a hundred years old are rare in Palestine, so a date a little before or around 700 B.C. is likely, and this conclusion is supported by the broad range of dates between 790 and 540 B.C. for the plant fragment. The formation of speleotherms would probably have taken many years after the cutting of the tunnel so the range of thorium-uranium dates in about 332 - 286 B.C. would not clash with a date around 700 B.C.

With this confirmation of what has long been assumed to be the actual date of the inscription, it is worth having a look at some points in it. It indicates that two

teams of workmen cut their way through the rock from opposite ends, finally meeting more or less in the middle. In the last stages, when, as the inscription says, they were three cubits (*šš. 'mt*) apart, the voice of each calling to his fellow (*ql. 'š. qr. 'l. r'w* [literally “voice of (*ql*) man (*'š*) calling (*qr*) to (*'l*) his companion (*r'w*)”]) could be heard and when they finally met it was implement against implement (*grzn. 'l'grzn*) and the water flowed from the source (*muš*) to the pool (*brkh*), 1200 cubits (*bm'tym. w'mt'lp. 'mt* [literally “in” (*b-*) + “hundred” (*m't*) + “two” (*-ym* (dual termination)) “and” (*w*) + “thousand” (*'lp*) “cubits” (*'mt*)].

This last details provides a useful clue to the value of the cubit in ancient Israel. The word *'mḥ* is found many times in the Old Testament (vocalised as *'ammāh*) with the meaning “cubit”, mostly in descriptions of the making of the tabernacle, the temple, and Ezekiel’s temple in Exodus 25 - 38, 1 Kings 6 - 7, 2 Chronicles 3 - 4 and Ezekiel 40 -43. This is the only rendering of *'ammāh* in most English versions, but usage in other languages makes it clear that its primary meaning was “forearm”,¹³ and it has been suggested that an instance of this meaning is found in Psalm 91:4, where the consonants *'mtw* could be read with the vowels *'ammātō*, “his arm”, instead of *'āmmittō* “his truth (AV) / faithfulness (NIV)” which appears in the Masoretic text.¹⁴ This remains a speculation, but it is reasonable, and has been adopted for instance in *The Revised Psalter* (London, 1964).

Hebrew *'ammāh* has a clear cognate in Akkadian (Babylonian-Assyrian) *ammatu* which has the meaning “cubit” in most contexts. In a limited number of instances it is clear that the correct rendering is “forearm”,¹⁵ and, further, in Ugaritic there is a rare occurrence of *ʾamt* in a context where it is reasonable to translate it “forearm”.¹⁶ The English word “cubit” is itself appropriate for this unit of measurement, since it derives from Latin *cubitus*, “arm; distance from the elbow to the middle finger”.

While a cubit was the length of a man’s forearm, men come in various sizes so this can indicate only a general not a precise value. The length of a Babylonian cubit (*ammatu*) in about 2000 B.C. (at that time Sumerian *kūš*)¹⁷ is known from a statue of the ruler Gudea who is shown seated with a flat space on his knees prepared for the plan of a building, but with a graduated builder’s rule already carved on it measuring a total of 27 cm (10.64 inches), or 26.5 cm (10.44 inches) to the marked graduation.¹⁸ This presumably represents half a cubit of 54 or 53 cm (21.28 or 20.88 inches), and this value of the cubit is also evident in the cuneiform texts during the second millennium B.C. In the Neo-Babylonian period (mid- to late first millennium B.C.) the length of the *ammatu* stood at only about 40 cm (15.76 inches), the longer standard being referred to at that time as *ammatu rabītu*, “great cubit”.¹⁹

There is good evidence for the value of the cubit in Egypt from actual builders’

rules, an average measurement of which gives a length of 52.3 cm (20.6 inches),²⁰ but another interesting indication is found in a papyrus giving details, including dimensions, of a royal tomb which was almost certainly that of Ramesses IV. Matching the dimensions on the papyrus with the corresponding measurements in the actual tomb of Ramesses IV gives a value of 52.3 or 52.31 cm (20.60 or 20.61 inches).²¹ The Egyptian cubit (*mḥ*)²² was reckoned to consist of seven palms (or handbreadths).²³

The measured length of the Siloam tunnel is 533 metres,²⁴ so $53300 \div 1200 = 44.41$ cm (17.50 inches). This is rather smaller than the lengths mentioned above from Babylonia and Egypt but, bearing in mind the likelihood that 1200 is an approximation rather than an exact figure and that it would have been difficult to obtain an accurate measurement through the twisting course of the tunnel, precise accuracy is not to be expected. The difference between the Siloam cubit and the Babylonian and Egyptian dimensions amounts, however, to something like $1/6$ of the lesser figure, that is to say $44.41 \div 6 = 7.4$, while $7.4 \times 7 = 51.8$, a figure not far from those of the Babylonian and Egyptian cubits. This numerical relationship corresponds to that found in Babylonia in Neo-Babylonian times, and there may be reference to it in Ezekiel's vision of a new temple, where a measuring rod is referred to as, literally, "of six cubits in the cubit and the handbreadth" (*šēš- 'ammôṭ bā'ammāh wāṭōpaḥ*), i.e. indicating a cubit longer by one handbreadth, or palm, (*ṭōpaḥ*) than the standard (Ezekiel 40:5), a passage rendered by the NIV, "six long cubits, each of which was a cubit and a handbreadth". That is to say, if the Babylonian and Egyptian dimensions suggest a common international standard of seven handbreadths, the cubit used to measure the Siloam tunnel may represent a cubit of six, i.e. shorter by one handbreadth, and the one referred to by Ezekiel the longer international standard.

The word *grzn* in the inscription, tentatively translated "implement" above, raises some questions. It occurs four times (vocalised *garzen*) in the Old Testament (Deuteronomy 19:5; 20:19; 1 Kings 6:7; Isaiah 10:15). It has a clear Semitic etymology in the verb *grz*, "to cut",²⁵ and the references in Deuteronomy show that it could be used to cut down trees, while the passage in Kings, like the inscription, refers to working stone. The passage in Isaiah does not add further to the definition. It is probable that the noun is found as a Semitic loanword *qrḏn* (in which *ḏ* = *dj*) in Egyptian,²⁶ where one reference indicates that it was a tool used in making a tomb, presumably indicating again that it could work stone.²⁷ The Old Testament references and the extra-Biblical sources thus show that it was a chopping or hacking implement which could be used for working either wood or stone. This may indicate that it was a generic rather than a specific term. Artefacts from Palestinian excavations show that by the 8th century B.C. iron weapons and implements were outnumbering bronze, and this situation is

reflected in references in the Old Testament.²⁸ Two instances relating to the 9th (2 Kings 6:5-6) and 8th (Isaiah 10:34) centuries refer to an implement or implements described only by the word "iron" (*barzel*), used for cutting down trees, and therefore usually translated "axe". The question arises therefore, whether the implements used for the tunnel were of bronze or iron. A possible indication may be found in a reference to the making of the tunnel in the apocryphal book of Ecclesiasticus (Sirach) (48:17), where one Hebrew manuscript mentions the use of a bronze tool (*nḥšt*), while the Greek version refers to one of iron (*sidēriōn*), in each case the word for the kind of tool being understood but not stated.²⁹ The Hebrew text of this book was probably written in the early second century B.C., so it cannot be counted as a reliable source concerning the time of Hezekiah, but it could be that it points to a tradition that the tools were bronze, and the scribe who made the Greek translation altered the material to that most likely in his own time, either inadvertently or because he assumed it to be correct. This, of course, is only speculation. Limestone, though it occurs in different forms, measures only about 3 on the Mohs scale of hardness and could probably have been worked with bronze implements. Bronze can be a very tough material, especially when hammered,³⁰ and as the working edges wore down they could have been reground or replaced.

Representations of Egyptian woodworking axes in tomb paintings show that for that purpose the blade, probably of bronze, mounted on a wooden shaft, was shaped like a half-circle, the cutting edge being curved.³¹ It seems clear, however, that when it came to detailed work on a stone statue, a chisel was used with a club-shaped mallet.³² Similar evidence comes from Assyria, where a representation on the bronze gates from Balawat depicting a man carving a relief of Shalmaneser III celebrating his campaign to the source of the Tigris in 853 B.C., shows the sculptor using a chisel and a club-shaped mallet.³³ This evidence applies to the carving of statues or reliefs, the mallet and chisel being appropriate to this kind of work,³⁴ but the references to the use of the *garzen* in the texts make it unlikely that it was a chisel, and since it was apparently used to cut down trees (Isaiah 10:15), it is likely that it was some kind of axe rather than an adze.

Axes are depicted in the Assyrian bas-reliefs but they are shown in scenes of war or ceremonial,³⁵ and do not give much indication of the activities of everyday life.

It is often instructive to examine the semantic field of a word in a language, bearing in mind that the evidence is limited. In the Old Testament there are three other words, *qardōm*, *kaššil* and *magzērâ*, which appear to refer to similar implements. *Qardōm* occurs five times in contexts which show that it was used mainly for cutting trees (Jeremiah 46:22; Psalm 74:5) or branches from trees

(Judges 9:48), indicating some kind of axe, and there is an interesting passage making clear that it needed to be sharpened (1 Samuel 13:19-21)³⁶. The other two words occur each only once: *kāššîl* in Psalm 74:6 where it is represented (together with another implement of uncertain meaning) as suitable for destroying carvings in a sanctuary, suggesting some kind of pick; and *magzêrâ* in 2 Samuel 12:31 where it is defined as made of iron and the context seems to indicate an agricultural implement of some kind.³⁷ The Old Testament only uses vocabulary of this kind incidentally, and none of these words are found in the inscriptions, so this evidence is too limited to help to define *garzen*.

More distant evidence from the classical world may give some idea of what a tool used for cutting into rock might have been like in Palestine. Painted scenes of the 6th century B.C. from Corinth show miners hacking into what is probably rock with what look like picks,³⁸ and actual examples of a type which would have been mounted on a wooden handle include a Greek miner's pick of the 4th-3rd century B.C. from Corinth, and a Roman example of the Roman period from the area of Rio Tinto in southern Spain.³⁹

Many examples of axes are known from throughout then ancient Near East,⁴⁰ and it may be that among them there is a type appropriate to the present text, but the context does not give sufficient evidence for a clear choice. This is an instance of a common situation in the study of antiquity, that many questions remain open.

References

- 1 George Adam Smith gives a description of the water system in *The Topography, Economics and Historical Geography of Jerusalem* (London, 1907), pp. 87-98; and J. Wilkinson gives a convenient account of the pool in New Testament times with reference to its earlier history in *Jerusalem as Jesus knew it. Archaeology as Evidence* (London, 1978), pp. 104-108; a modern report on the tunnel is given by D. Gill in *Qedem 35* (Jerusalem, 1966), pp. 18-22, in the course of his more general article "Geology of the City of David and its Ancient Subterranean Waterworks", in *ibid.*, pp. 1-28.
- 2 C. Schick, "Phoenician Inscription in the Pool of Siloam", *PEFQS* 12 (1880), pp. 238-39.
- 3 "Siloam2, *PEFQS* 13 (1881), pp. 197-99.
- 4 A.H. Sayce, "The Ancient Hebrew Inscription in the Pool of Siloam", *PEFQS* 13 (1881), pp. 282-85.
- 5 *PEFQS* 13 (1881), pp. 285-87, the tracing following p. 286. Sayce reproduced this tracing in his popular book *Fresh Light from the Ancient Monuments* [By-paths of Bible Knowledge II] (Religious Tract Society; London 1883), facing p. 87, with accompanying text, pp. 82-91; the copy also appears embossed in gold on the front cover.
- 6 *Gesenius' Hebrew Grammar*, ed. and enlarged by E. Kautsch, 2nd English edition by A.E. Cowley (Oxford, 1910), between pp. xvi and 1, and the script included in a Table of Alphabets which precedes it, also described on pp. 9-10 with bibliography. The inscription has been published frequently since, e.g. translations with introductory notes by W.F. Albright in J. B. Pritchard (ed.), *Ancient Near East Texts relating to the Old Testament* (2nd ed.; Princeton, 1955), p. 321 and by N.H. Snaith in ("the poor man's Pritchard") D.W. Thomas (ed.),

Documents from Old Testament Times (London, 1958), pp. 209-11; and the text is given conveniently with translation and philological notes in J.C.L. Gibson, *Syrian Semitic Inscriptions*, 1, *Hebrew and Moabite Inscriptions* (Oxford, 1971), pp.21-23; and recently with a thorough treatment in J. Renz & W. Röllig, *Handbuch der Althebräischen Epigraphie*, I, Renz, *Die Althebräischen Inschriften*, 1, *Text und Kommentar* (Darmstadt, 1995), pp.178-189.

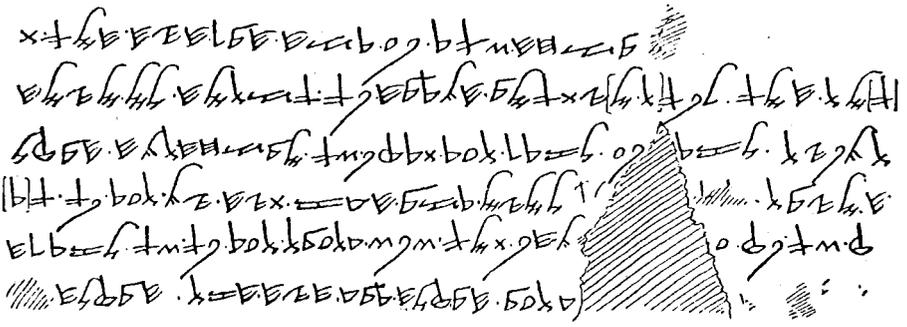
- ⁷ S.R. Driver, *Notes on the Hebrew Text and Topography of the Books of Samuel with an Introduction on Hebrew Paleography and the Ancient Versions and Facsimiles of Inscriptions and Maps* (Oxford, 1913), pp. viii-xi. (S.R. Driver played a major part in the translation of the RV Old Testament, just as his son G.R. Driver was greatly involved in the preparation of the NEB).
- ⁸ Driver, *Samuel*, p. x.
- ⁹ The inscription occupied the lower part of a rectangular space measuring a little over 2 feet square which had been smoothed and polished to receive it. The upper part, which was blank, may have been intended for an historical introduction naming the king in question, but warlike conditions at the time perhaps prevented its completion.
- ¹⁰ On the historical background see T.C. Mitchell in *Cambridge Ancient History* (rev. ed.), III, 2 (Cambridge, 1991), pp. 356-359.
- ¹¹ A speleothem is defined as "a naturally formed, unitary, coherent body of mineral matter which has been deposited within a cavern or cavern space subsequently to the development of such space, and at least a portion of the substance of which has been precipitated from solution ..." (A. Wyatt, (ed.), *Challinor's Dictionary of Geology* (6th ed., Cardiff, 1986), p. 294).
- ¹² A. Frumkin, A. Shimron and J. Rosenblum, "Radiometric dating of the Siloam Tunnel, Jerusalem", *Nature* 425 (11 September, 2003), pp. 169-71; a report noted in the *Biblical Archaeology Review* 29/6 (November/December 2003), p. 18.
- ¹³ See e.g. E. Dhorme, *L'emploi métaphorique des noms de parties du corps en Hébreu et en Akkadien* (Paris, 1963), p. 143.
- ¹⁴ See e.g. M. Dahood, *Psalms*, II, 51-100 [Anchor Bible Dictionary 17] (Garden City, New York, 1968), p. 331, with other suggestions.
- ¹⁵ A.L. Oppenheim et al. eds., *The Chicago Assyrian Dictionary*, 1 A, II (Gluckstadt, 1968), pp. 70-75.
- ¹⁶ E.g. in a passage in the Epic of Keret where the hero is told by the god El to wash his hands to the *amt*, probably the elbow; J.C.L. Gibson, *Canaanite Myths and Legends* (2nd ed., Edinburgh, 1978), p. 83, line 63.
- ¹⁷ See R. Borger, *Assyrisch-babylonische Zeichenliste* [Alter Orieten und Altes Testament 33] (Neukirchen-Vluyn, 1978), sign no. 38 with bibliography; and in his extended edition, *Mesopotamisches Zeichenlexikon* [AOAT 305] (Münster, 2003), sign no. 490.
- ¹⁸ E. de Sarzec et al. *Découvertes en Chaldée* (Paris, 1884-1912), I, pp. 136-38, II, pl. 15.2 and 3; and A. Parrot, *Tello. Vingt campagnes de fouilles (1877-1933)* (Paris, 1948), p. 163 no. 6; pl. XIV. b and d lower.
- ¹⁹ Oppenheim, *Assyrian Dictionary*, 1, A, II, P. 75; Borger, *Assyrisch-babylonische Zeichenliste*, p. 342.
- ²⁰ H. Carter and A.H. Gardiner, "The Tomb of Ramesses IV and the Turin Plan of a Royal Tomb" *Journal of Egyptian Archaeology* 4 (1917), pp. 130-58, where (pp. 135-36) Carter refers to graduated rules measured by him,.
- ²¹ Carter and Gardiner, *Journal of Egyptian Archaeology* 4 (1917), pp. 130-58, where (pp.

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149-156) the actual measurements made by Carter are arranged in columns opposite papyrus measurements. This tomb was used as a billet by Champollion (the decipherer of Egyptian hieroglyphics) and his colleagues when they were examining the tombs in the Valley of the Kings in 1829 (popular account of this in L. and R. Adkins, *The Keys of Egypt. The Race to Read the Hieroglyphs* (London, 2000), pp. 265-68.

- ²² *Mh* also had the meaning "forearm", the hieroglyph being a picture of a human forearm.
- ²³ R.O. Faulkner, *A Concise Dictionary of Middle Egyptian* (Oxford, 1962), p. 113; see also A. Gardiner, *Egyptian Grammar* (3rd ed.; Oxford, 1957), p. 199, § 266.2.
- ²⁴ Gill, *Qedem* 35 (1996), pp. 18-19; Adam Smith (*Jerusalem*, p. 93) cites measurements made before his time varying between 518 and 535 metres. According to Sayce (*Fresh Light*, p. 84), Conder measured the length of the tunnel at 1708 yards, actually 1708 feet — a mistake corrected in his well-known book *The "Higher Criticism" and the Verdict of the Monuments* (London, 1893), p. 377 — giving a cubit of $520.94 \div 1200 = 0.4341$ metres, i.e. 43.41 cm.
- ²⁵ Found also in the metathesised form *grz*, "to cut".
- ²⁶ J. E. Hoch, *Semitic Words in Egyptian Texts of the New Kingdom Period* (Princeton, 1994), pp. 303-4 no. 438.
- ²⁷ J. Černý, *Journal of Egyptian Archaeology* 15 (1929), pp. 245 (referring to recto page 2, line 9 of a papyrus) and 249, nn. 31 and 32 (where *qr̄n* is given as the equivalent of "hoe", suggesting that the two words have been reversed).
- ²⁸ T. C. Mitchell in *Cambridge Ancient History*, III.1 (Cambridge, 1982), pp. 449-50.
- ²⁹ The Hebrew and Greek texts are given conveniently e.g. in F. Vattioni, *Ecclesiastico Testo ebraico con apparato critico e versioni greca, latina e siriana* (Naples, 1968), pp. 262-63; see also P.W. Skehan and A.A. di Lella, *The Wisdom of Ben Sira* [Anchor Bible 39] (New York, 1987), pp. 537-38.
- ³⁰ R.F. Tylecote, *A History of Metallurgy* (London, 1976), p. 167; and (p. 9) citing examples from Egypt, hardened as a result of working (HB scale explained on p. 167).
- ³¹ Killen, *Egyptian Wood Working*, fig. 6 (felling a tree, early 2nd millennium); Scheel, *Egyptian Metalwork*, fig. 52 (cutting a tree).
- ³² M. Bierbrier, *The Tomb Builders of the Pharaohs* (London, 1982) fig. 28 (late 2nd millennium B.C.); Scheel, *Egyptian Metalwork*, figs 43, 44, 57, with p. 53; A. Lucas, *Ancient Egyptian Materials and Industries* (4th ed. rev. and enlarged by J. R. Harris; London, 1962), pp. 63-68.
- ³³ L.W. King, *Bronze Reliefs from the Gates of Shalmaneser King of Assyria B.C. 860-825* (London 1915), pl. LIX, pp. 30-31.
- ²⁴ A useful account of the tools and methods used for stone working in the Achaemenian period in Iran is given in C. Nylander, *Ionians at Pasargadae* [Acta Universitatis Upsaliensis 1] (Uppsala, 1970), pp. 20-30 with bibliography concerning the classical world, Egypt and other areas nn. 46-47; see also on ancient Greece, with some reference to Egypt S. Casson, *The Techniques of Early Greek Sculpture* (Oxford, 1933), pp. 168-222.
- ³⁵ See e.g. B. Hrouda, *Die Kuturgeschichte des assyrischen Flachbildes* (Bonn, 1965), pla. 18.14, 15, 16; 26.3, with p.88.
- ³⁶ On this passage see K. McCarter, *I Samuel* [Anchor Bible 8] (Garden City, New York, 1980), p. 238.
- ³⁷ See McCarter, *II Samuel* [Anchor Bible 9] (1984), p. 311 for the general sense, but with questioning of the inclusion of "mgzrh of iron" in the original text.

- 38 J. F. Healy, *Mining and Metallurgy in the Greek and Roman World* (London, 1978), pls. 8, 17, with p. 84.
- 39 Healy, *Mining and Metallurgy*, pls 16a and 30 with pp. 84 and 100.
- 40 A large selection of early bronze examples is included in J. Deshayes, *Les outils de bronze de l'Indus au Danube (IV^e au II^e millenaire)*, I-II (Paris, 1960); and some selected examples can be seen, e.g. from Palestine: A.G. Barrois, *Manuel d'archéologie biblique*, I (Paris, 1939), fig. 134 with pp. 374-78 (an old book but giving a useful though limited selection); and from Egypt, B. Scheel, *Egyptian Metalwork and Tools*, (Shire, Princes Risborough, 1989), fig. 51 (p. 48), with p. 53; G. Killen, *Egyptian Wood Working and Furniture* (Shire; Princes Risborough, 1994), fig. 50 (actual tools, late 2nd millennium B.C.).



Correspondence

From Brian Weller:

Dear Sir,

Did Christ die for E.T. as well as for Homo Sapiens?

Professor Montgomery's comprehensive essay concentrates upon the mystery of God's love and grace and how it might relate to other creations, including E.T. What follows majors upon the revelation that humanity is the object of God's love. Christians understand this, but often take it for granted. Giving this truth the weight it deserves may convince the reader of a different conclusion from that reached by others.

Jesus came specifically to deal with sin, the devil and death in the arena of manhood because God so ordained it from before creation, as part of His eternal plan. However this does not exclude consequences of which at present we have no knowledge.

The scriptures reveal that mankind was in God's heart and purposes before Homo Sapiens appeared on this planet¹. That we are more than just another product of divine creativity. Mankind represents God here on earth. We have been endowed with divine breath, *spirit*, and given global dominion. Consequently, slaying a man offends and insults the One whose image man bears; in whose shoes he stands².

Too easily we become over familiar with the patience of God in His plan of salvation. It ought to blow our minds, ignite our hearts and render us prostrate at Jesus' feet. Two sentences penned by the author of the Epistle to the Hebrews bring out the context of what is here under consideration, NEB 1:3 & 4: ... *The Son who is the effulgence of God's splendour and the stamp of God's very being, and sustains the universe by his word of power. **When he had brought about the purgation of sins, he took his seat at the right hand of Majesty on high.*** God from eternity THROUGH MANHOOD to all eternity; the same manhood which suffered death and the curse in Adam^{3,4}, but of which E.T. has no experience. Clearly Homo Sapiens have far greater worth and potentiality than science allows; embodies divine emotions and intentions of which science has no cognisance. The history of our race is evidence that we have failed to preserve the perfection of God's creation, either in our behaviour towards each other or in our stewardship of earth's wonderful resources. Lacking perfection, during the year's of God's patience, we are offered a saviour and an intimate relationship with God through His identification with us in His manhood⁵.

Old Testament writers were in awe of God's love and mercy^{6,7,8}. The Apostle Paul writing to the Christians in Rome indicated that it had been revealed to him that creation itself will be delivered from corruption, *entropy*, when God brings to completion His work on, in and through manhood⁹. In case any reader should think that our Lord could not at one and the same time be both God and human, Bishop Frank Weston's enquiry into the manner of the incarnation, written almost 100 years ago may be helpful¹⁰.

If the implication within the title's question is that mankind was not the sole object of the divine plan of salvation, this contributor believes the biblical teaching to be mankind was created to be that sole object and that we, you and I, remain so.

References

- ¹ Eph. 1:4 He chose us in Him before the foundation of the world
- ² Gen. 9:6 Whoever sheds man's blood, by man his blood shall be shed; for in the image of God He made man.
- ³ 1 Peter 1:18-21 ... you were not redeemed with corruptible things ... but with the precious blood of Christ ... He indeed was foreordained before the foundation of the

world but was manifest in these last times for you who through Him believe in God, who raised Him from the dead and gave Him glory, so that your faith and hope are in God.

- ⁴ Eph. 2:4-7 God ... because of His great love with which He loved us ... made us alive *together with Christ* ... and raised us up *together* in the heavenly places in Christ Jesus, that in the ages to come He might show the exceeding riches of His grace in His kindness toward us in Christ Jesus.
- ⁵ 1 John 3:2 ... it has not yet been revealed what we shall be, but we know that when He is revealed, we shall be like Him.
- ⁶ Job 7:17 What is man, that You should exalt him, that you should set Your heart on him?
- ⁷ Psalm 8:4 What is man, that You are mindful of him, and the son of man that You care for him?
- ⁸ Psalm 144:3 Why do we humans mean anything to you, our Lord? Why do you care about us? CEV.
- ⁹ Rom. 8:18-21 For I consider that the sufferings of this present time are not worthy to be compared with the glory which shall be revealed in us. For the earnest expectation of the creation eagerly waits for the revealing of the sons of God. For the creation itself also will be delivered from the bondage of corruption into the glorious liberty of the children of God.
- ¹⁰ Weston, Frank. *The One Christ*. Longman's, Green and Co, (1914). pp. 141-143. But the word human may carry one of two meanings. It may connote something belonging to a man; or it may connote something that is proper to manhood. In the former sense it can never be used of our Lord Jesus Christ. His consciousness, experience and example do not and cannot belong to one who is a man. For He is Himself God, the eternal Son of God; and no measure of self-abandonment will ever make Him anything else but God. But in the second sense, as connoting something proper to manhood, the word human is most rightly applied to our Lord. His human consciousness is His consciousness of Himself as conditioned by manhood, and limited by it; His human experience is His experience of the universe as related to Himself through a human soul alone; and His human example is the example of what perfect manhood can be and can accomplish in divine power. ... a divine Ego conditioned in and working through manhood is still divine. Hence there is an atmosphere of divinity surrounding the normal life of Christ: something that entirely differentiates Him from all others.

Book Reviews

John Stott

Why I am a Christian

Inter-Varsity Press, 2003. 119pp. 149pp. £7.99. ISBN 0-85111-407-5

Reviewed by Kenneth G. Greet

Those who have been familiar with the life and ministry of John Stott will find in this small volume all the characteristics of biblical scholarship and clear exposition that have always been the hallmarks of his work. The summary headings in the text help the reader to follow the argument.

The title of the book is prompted by that of the volume of essays that Bertrand Russell published fifty years ago under the heading *Why I am not a Christian*. Stott's book, however, is not in the category of Christian 'apologetic' which would be required to present a rebuttal of what Russell wrote. John Stott finds all the reasons for his Christian allegiance in the Bible.

The first chapter uses Francis Thompson's *The Hound of Heaven* to make the point that it is Christ who takes the initiative in bringing men and women to commitment to his cause. This is illustrated by references to Saul of Tarsus, Augustine of Hippo, Malcolm Muggeridge and C. S. Lewis.

From there the author goes on to examine the claims that Jesus made for himself. He uses the startling phrase 'the egocentricity of his teaching and the humility of his behaviour'.

Dealing in chapter 2 with the centrality of the cross Stott writes, 'The cross does not explain calamity, but it gives us a vantage ground from which to bear it ... it is the cross which gives God credibility.'

Later chapters deal with the question of our identity, the meaning of Christian freedom and Christ as the fulfilment of our aspirations. The book ends with a straightforward evangelical appeal and a prayer to help those minded to respond.

Those who are looking for an in-depth study of the profound questions that lie in the interface between science and religion will not find it here. But as a direct and searching testimony, personal and bible-based, John Stott has given us a fine read. Preachers will find here much grist for their mill.

Ernest Lucas

Daniel (Apollos Old Testament Commentary 20)

Leicester: Apollos. 2002. hb. 359 pp. £19.99 ISBN 359 0 780 5

Reviewed by Reg. Luhman

My first review for *Faith and Thought* in 1978 was of a commentary on the book of Daniel and it seemed appropriate that I should review this excellent recent commentary by Ernest Lucas. Another very good reason for a review is that the author, besides being the Vice-Principal of Bristol Baptist College and an Old Testament scholar, is also a valued member of this society

Daniel is an enigmatic book containing two types of material (stories and visions) is written in two languages (Hebrew and Aramaic), and has been classified as both prophecy and apocalyptic. It contains extraordinary stories and weird dreams and visions and has been the subject of sceptical criticism that questions both its

authorship and traditional dating. Dr. Lucas, unlike most commentators, wisely leaves questions of authorship and date until the end, which allows him to garner evidence from the text for his conclusions rather than trying to interpret the text in the light of presuppositions regarding authorship and date. His introduction is instead devoted to the discussion of the text and versions of the book along with the genre it represents. He puts Daniel in its historical context and includes a helpful chart detailing events that happened in Babylonia, Media, Persia and Macedonia from 605-164 BC.

The commentary is structured like the *Word Commentary* series with a new translation of the text by the author followed by textual notes, commentary and an explanation. Unlike the *Word Commentaries* this volume transliterates all foreign words, making it more manageable for the average reader. The author gives a balanced assessment of differing views but does not hesitate to give his considered opinion in disputed areas. The approach is conservative and he grasps the nettle of contemporary liberal criticism to maintain the historical reliability of the book. For instance a careful discussion of the supposed historical inaccuracies are given a 'not proven' verdict. The loan words once considered to be pointers to a second century date for the book are shown to be indecisive and the Hebrew and Aramaic could both support a 4th to 5th century BC date.

The explanation sections are particularly helpful. Here the author seeks to show the contemporary relevance of the passages under consideration. One example will suffice. Commenting on Belshazzar's feast (chapter 5) he asks what would count as 'temple vessels' today. He replies by pointing to the ideals, goals, security symbols and possessions prized by secular societies. Pursuit of these false gods can dehumanise or even destroy us. "To some extent Christians have played a significant prophetic role in exposing these 'gods' as false, but there is no room for complacency." The chapter also raises the question of the Christian attitude to multifaith dialogue. "Christians can accept neither the 'modernist' view that all basically the same (because equally vacuous), nor the 'postmodern' view that they are all equally valid because there can be no privileged position from which to view and value them" (p. 141).

This is an excellent commentary from an evangelical perspective, even though not all evangelical Christians would agree with everything Lucas says. For instance he does not say whether he believes that Daniel literally survived the lions' den or his three friends the furnace. Rather he points to the emphasis of the book on the steadfastness of its heroes as encouragement for the Jewish readers of the book who were being tempted to deny their faith in the Antiochene persecution in the Maccabean period. He believes, in the light of accumulating evidence, that the stories of the first part of the book come from an early period but is less certain about the detailed visions relating to the Antiochene period. His solution

is to posit a group of disciples who kept Daniel's writings, to which were added the visions that one or more of them had as they strove to understand what was happening. "The attribution of the visions to the Daniel of the stories, if they do not all come from him, was not an attempt to deceive people, but an expression of the group's sense of solidarity and the continuity with their past traditions" (314). This is a book I would highly recommend

Nigel Scotland

Evangelical Anglicans in a Revolutionary Age, 1789-1901

Carlisle: Paternoster, 2004, xiii + 457 pp. pb. £19.99. ISBN 1-84227-231-4

Reviewed by Bob Allaway

There were certainly revolutionary changes in science over this period. However, little direct reference is made to these. Charles Darwin is only mentioned three times, in passing. No reference is made to the joust between Bishop Samuel Wilberforce and Thomas Huxley at Oxford in 1860, although the bishop is mentioned in other contexts.

Scotland makes an important distinction between two groups of Evangelicals, that he terms Moderates and Extremists [p8f]. He argues that the former group could accommodate new scientific discoveries more easily than the latter.

The Moderates continue the tradition of William Wilberforce, Charles Simeon and John Venn, and included men such as John Bird Sumner, Archbishop of Canterbury, and (some may be surprised to know) Samuel Wilberforce. While holding to the divine inspiration and sole authority of Scripture, this did not mean for them verbal inerrancy or excessive literalism. They also intended to have an optimistic, post-millennialist eschatology, that could welcome scientific discoveries as means by which God could extend his Kingdom.

The Extremists, influenced by the Haldane brothers, held a strong view of verbal inspiration. They also began to develop a pessimistic, pre-millennialist eschatology, and accepted a conflict view of science and faith as evidence that the world was heading for the End Times. The most prominent member of this camp was Lord Shaftesbury (the first President of the Victoria Institute, although this is not mentioned).

Differences similar to the above are still with us. I found a helpful approach to these questions in the views of one Charles Waller, who wrote that "When Jesus read the Scripture, 'He would read it without any imperfection of thought or motive ... It is only in this sense, as He would have read it, that we claim infallibility for Holy Scripture'." [p142] Strangely, this led him to the Extremist position. I

would have thought that, in the light of passages such as Mark 10:5f, it would have drawn him closer to the Moderates.

Scotland brings out the great commitment of evangelicals in both camps to applying their faith socially and ameliorating the plight of the urban poor. Lord Shaftesbury is justly famed in this regard.

Anglicans interested in arguments about Biblical inspiration or ritualism, and political historians, will find much of interest in this book. Historians of science will need to look elsewhere.

Peter S. Williams

The Case for Angels

Carlisle Paternoster, 2002. 211pp. pb. £15.99 ISBN 1 84227 169 5

Reviewed by Reg Luhman

Despite the attempt of scientism to dismiss everything that cannot be confined within the narrow confines of naturalistic explanation, belief in angels has not only persisted but has seen a resurgence in the last few decades. In the United States alone, some 37 million people claim to have sensed the presence of an angel. In this book Peter Williams sets the question in the wider context of the philosophy of religion and the philosophy of mind. In fact the book is much more than a study of angels. It encompasses arguments for the existence of God, the nature of mind and the question of design.

Arguing from philosophy, the author first establishes the possibility of the existence of angels and then goes on to discuss the plausibility of their existing. He maintains that angels are unembodied, finite, spiritual beings who are more knowledgeable than human beings and are capable of having beliefs, desires and volition and of performing actions and of being spatially located instantaneously by simply transferring their attention from one object to another. Angels, but not demons, can assume human bodies, which are accommodated to the historical context in which they appear and hence are usually represented as male in patriarchal context of the Bible. He argues, on the basis of the Bible, that there must be at least 72,000 angels (12 legion Mt. 26.53) and in excess of 2000 demons (the story of Legion). He discusses, in some detail, the perceived activity of both angels and demons as revealed in both the Bible and history and has a useful appendix on Jesus as exorcist.

Williams has included several appendices as well as a useful bibliography which includes internet sites and biographical notes on notable philosophers and apologists, both living and dead, who have contributed to this topic. This is an excellent survey of the topic and will be of value to believer and sceptic alike.

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