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Great are the works of the LORD: they are studied by all who delight in them Ps 111:2 (NASB)

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Editorial

Evolution—a continuing issue

One might have thought that in the more than 140 years since the publication of *The Origin of Species* some general consensus might have arisen. Certainly at the end of the 19th century it seemed that the issue was well on the way to being resolved. Indeed evangelicals today who see no conflict between evolution and the Christian faith are closely aligned to some of the greatest evangelical and fundamentalist theologians of the late 19th and early 20th century. These include men such as Benjamin Warfield (who played a key role defining the doctrine of Biblical inerrancy), James Orr (a contributor to *The Fundamentals*), and P. T. Forsyth.

Why then do many Christians not only continue to consider organic evolution hostile to the Bible but why has this opinion hardened considerably in the last 100 years? Not only is there opposition to organic evolution from young earth creationists, but also from those who have no difficulty in accepting scientific evidence for creation by natural law in astronomy and geology and who balk at natural law forming biological species.

I suggest several reasons for this. First has been the shift in worldview from critical realism to naïve realism for most evangelicals, a change that I hope to explore in a future issue. A major consequence of this has been increasingly literal interpretations of the Bible in passages not traditionally read literally and consequent scepticism towards scientific discovery when it apparently conflicts with literalism. Second, there has been the continued misuse of science, especially organic evolution, to attack Christian faith. This has been especially the case with organic evolution. It is ironic that many Christians prefer the theology of militant atheists such as Richard Dawkins or Will Provine (who say that organic evolution is contrary to Christian faith) to the theology of their Christian forebears who held the opposite. Third, evangelical Christians through the 20th century

have been increasingly semi-deistic in their understanding of God's work in the world, seeing Him as especially present in miracles, and absent from the daily function of the world. Finally, many Christians continue to be vitalists, and see living things as requiring a different type of creative act to stars, rocks, and planets.

These factors have made evangelical Christians vulnerable to influences from outside mainstream evangelical, reformed, and indeed historic fundamentalist thought in understanding God's work in creation. The creation science movement, influential in many churches, has its intellectual roots in Seventh day Adventism. While there are many fine Adventist Christians it is ironic that the style of scientific creationism advocated by Adventists such as George M. Price and H. Clark has come to be a mark of orthodoxy amongst many evangelicals. The Intelligent Design movement is not specifically Christian, and yet seeks to impose its theological assumptions on Christians. The ready acceptance of ID by some Christians should be a matter of concern when one of its leading advocates, Jonathan Wells, is a member of the Unification Church of Sun Myung Moon.

Because these questions raised by organic evolution continue to be at the forefront of many people's perception of issues of science and faith, this issue of the ISCAST Bulletin is devoted to it. I expect that the articles and book reviews in this issue will provoke some strong reactions. I welcome this, the letter section has been rather lacking in recent issues. Nevertheless as Christians we should not only be able earnestly to contend for God's truth, but do so in love, full of concern for each other and love for those weak in the faith. *How* we discuss is as important as *what* we discuss. In this process it is important for us to look past some of the superficial questions and address the fundamental ones of God's work in the world and how we see His relationship with His creation. If this issue of the Bulletin succeeds in helping people understanding more clearly what some of these issues are then it will have achieved its aim. There are two reflections on organic evolution in this issue, and a number of book reviews. It is especially pleasing that two of the books reviewed are by Australian authors. Books on science and Christianity by Australian authors are still few, but they are increasing in number. Long may this trend continue.

News

NSW

The NSW chapter of ISCAST is preparing for the 4th Conference on Science and Christianity on July 18-20th, 2003. It will be held at Avondale College, Cooranbong, NSW. The conference theme will be "God, Science, and Divine Action. More details in the next issue of The Bulletin.

ACT

A CTNS-sponsored international conference on *Creation and Complexity* was held at the Australian National University on January 25th-30th. There were over 100 delegates to hear major papers by Robert Russell, David Wilkinson, Jan Henriks, Carolyn King, and Niels Gregersen, as well as by ISCASTians John White and Mark Worthing. There was also a short paper and poster program. The conference was most challenging, covering diverse topics. Ones I found especially interesting were those by David Wilkinson on the origin of the universe, and scientific and

Christian eschatology, Robert Russell's on chaos and complexity, Caroline King's two talks on science-theological interaction, and complexity in nature, and Mark Worthing's on the complexity of time.

Jonathan Clarke

VIC

The most recent "Fire in the Belly" meeting was a BBQ on Saturday November 17, 2001 at the home of Alan Gijbers in Lower Templestowe. It featured talks by Dr Denise Cooper-Clarke and Dr Andrew Sloane, both fellows of ISCAST in Victoria. The occasion was also the ISCAST (Vic) AGM.

The Translation of Medical Ethics

1. The translation of medical ethics into one principle.

It is perhaps not surprising, but nevertheless ironic and disappointing, that the discipline of

bioethics has duplicated the reductionist and universalising tendencies and trends of modern Western technological medicine. The enormous success of the so-called medicine-science hybrid has been achieved at the expense of understanding the patient as a person. But the mainstream of Western bioethics (so called principlism) is also universalising and reductionistic. The four principles approach reduces the whole of medical ethical reflection to four core universal principles: respect for patient autonomy, beneficence/non-maleficence, justice, and some would add privacy, which includes confidentiality. And in the absence of any commonly accepted notion of the good, the patient's conception of what is good, and conversely what is a harm, becomes the decisive one. Which means we are basically reduced to only one principle—that of respect for patient autonomy. Medical ethics seems to have translated itself into the satisfaction of patient preferences. Personal choice replaces ethical discussion. This is particularly apparent in the so-called abortion debate.

2. The translation of medical ethics into majority opinion

Increasingly, descriptive ethics is used as a substitute for normative ethics. Surveys of public or medical opinion are used to convince us about rightness or wrongness.

There was an example in *The Age* (Oct 25) recently. The headline was "Late abortions OK, most doctors agree". It turns out that the "most doctors" were 39 respondents out of 82 surveyed, who were all members of the Australian Association of Obstetrical and Gynaecological Ultrasonologists. And even for this selective sample, the headline is highly misleading. Two thirds said they would perform a foeticide if a lethal abnormality was detected, i.e. the baby could not survive anyway. But only 16% of this two thirds would agree to perform a foeticide for any reason. That's only 10% of this already highly selective sample—hardly justifying the headline "most doctors". But even if all the doctors surveyed had said they would carry out a late termination for any reason, would that tell us anything at all about the morality of such procedures? A description of people's attitudes is not the same as moral argument.

Denise Cooper-Clarke

Being a Christian in the Academy or Journeys in Epistemology

Christians who want to engage in the academy as **Christians** face opposition on two fronts: the (roughly speaking) modernist and postmodernist.

Modernists, those committed to what's been called "the Enlightenment project", call for value-neutral scholarship in which all the particularities of religious commitment and so on are excised, leaving generic human knowing which (ought to) give rise to a rational consensus amongst scholars which will, in turn, lead us to (roughly) the truth. Clearly, the particular perspective of Christian belief plays no role in such a vision of the academy.

Many postmoderns, on the other hand, while rejecting such "value-neutral" scholarship, still say that Christian voices should not have the same privileged position granted, say, to feminist or liberationist or "queer" scholarship. For many (but not all) "postmoderns", the "truth" is no longer the goal of scholarship, for truth is not an objective phenomenon, but depends upon a particular framework of beliefs. The goal of scholarship is to liberate the silenced voices of those excluded from the modernist project. Christian belief is caught up in the intellectual oppression of "dead white males" that has silenced voices from the margins for so long. As such, this particular particularity does not have the legitimacy of other perspectives.

I believe we need an alternative view of scholarship, which, while recognising the particularities of scholarly practice, avoids the relativist conclusions of (many) postmoderns. Such an alternative is provided by Nicholas Wolterstorff, a leading American Christian philosopher, who argues that, while we need to be responsible scholars, Christians are entitled to allow their Christian beliefs to influence their scholarly practice and that, doing so, in fact, far from hindering our grasping of the truth, will foster it.

Andrew Sloane

Articles

Do We Need Evolution ?

Students, and the general educated public, are given two extreme viewpoints about biological evolution, and are pressed to choose between them. One, as popularised by Richard Dawkins, so emphasises the random element in mutations, as to assert that life is no more than a random accident, of no significance. The other, called "creationist", withdraws to a traditional Christian ghetto, interpreting Genesis very literally, and rejecting any scientific approach. However, other viewpoints are possible—if you don't mind being shot at from both sides! (I am a mathematician, and no biologist; but maybe an outside perspective is needed.)

What should we tell young Christians about these matters? The very word "evolution" may convey to a listener something quite different from what we intend—commonly the "random accident" viewpoint. Moreover, I submit that some large questions are still quite open, and both Christians and biologists would do well not to dogmatise about them.

The idea of "evolution" has several strands, including (simply stated):

(a) Fossil evidence shows that many biological species, including many groups of similar-appearing species, have come and gone, over a long period of time. This strongly suggests a process of development from some species to other species. Recent studies of DNA have supported this, by showing that the genetic material from various species, including human, has a great deal in common.

(b) Experiments within a species, or with closely similar species, indicate that such development can happen by a combination of mutations of genetic material, with some "natural selection".

(c) Great changes, as from one species to a very different species, are more difficult. If one assumes that "natural selection" was the main process operating, then the fossil evidence can be interpreted (with Darwin) in terms of many small changes produced by "natural selection". But the "great changes" are beyond reach of our experiments.

(d) Evolution has given occasion for much ideology—from Huxley and Spencer to Monod

and Dawkins—which goes far beyond any observational evidence. Such ideologies include the "life is an accident" view mentioned above, also "social Darwinist" ideas of social classes.

So "Evolution" is a slippery word to discuss. A statement that "evolution has been established", in relation to items (a) and (b), slides easily to assertions in items (d). The evidence in item (c) is of a very different character to items (a) and (b), and involves long chains of conjecture. Could there be an evolutionary interpretation of anything that might be observed? (Popper has questioned whether evolution could be falsified by any possible observation.) A "unifying principle" that fits everything also predicts nothing.

"Randomness" is also a slippery concept. In popular language, "random" may mean haphazard and unstructured; but that can mislead. Consider a "purely random" sequence of coin tosses, supposing heads and tails are equally likely. Will this sequence contain some structure, say Shakespeare's "Hamlet" (in teleprinter code)? Yes, but you must wait very long, likely longer than the age of the universe! Moreover, garbled versions of "Hamlet" are equally likely, and how can you tell which is the right one, without some principle of selection that is external to the random process. The popular idea that life came out of pure randomness offers neither sense nor explanation.

Structure is present from the beginning, as well as randomness. As an illustration, Conway's computer game "Life" indeed builds up interesting patterns on the screen, from what looks like randomness. But the essential structure, the "rules of the game", are there from the start. If they seem few, it is because they are mathematical, and mathematics is a concise language.

So, the universe did not start by a random event in the vacuum. The "vacuum" is not empty, but is highly structured, containing all the laws of physics. Mutations plus natural selection do not make a purely random process. At the least, they include a great deal of non-random biological and chemical structure. It is misleading to stress the random and forget the structure.

What viewpoint might be suggested to an enquiring mind, in particular a Christian student? A student of biology may be constrained to echo what his/her professors say, albeit with reservations. Short of such constraints, it might be reasonable to accept items (a) and (b) above, but regard items (c) as an open question, pending more adequate evidence, and item (d) to be rejected.

But how does this square with the Bible? The early chapters of Genesis were written (as Jerome, the translator of the Latin Bible pointed out) "in the style of a popular poet". That is, they have true and important things to say, expressed in terms that ordinary people, without higher education, can visualize. They are not carriers of fine technical details. Nor are other verses taken out of context.

Could the Creator have delegated some part of His creative ability to some elements of His creation? This seems very likely, and need not surprise a Christian. The mechanism of this is a matter for inquiry. It is the business of science to examine conjectural ideas, and discover whether they fit the facts. Often, the conjectures have needed modification. We should not suppose they are a final statement of truth.

Bruce Craven

Evolution and Creation: Why All the Fuss?

David Young

Prof. Young is both a Christian and a Professor of zoology at the University of Melbourne where he teaches evolution. His book, "The Discovery of Evolution", is published by Cambridge University Press. The content of his article was the subject of the annual ISCAST (Vic) lecture in September.

As a zoologist who has spent many years teaching evolution to university students, I find that a visit to my local Christian bookstore can be a disconcerting experience. For these shops stock, and often promote, creationist books, which deny that evolution has taken place. The recent growth in the creationist movement has occurred in parallel with a growth in the number of popular-science books on evolution, often written by authors openly hostile to religion.

The result has been a vigorous public debate on "evolution and creation", which remains as

lively as ever in 2001. Such a debate was first precipitated nearly one and a half centuries ago, when Charles Darwin published *The Origin of Species*. Surely something has gone awry for the Christian church to be bogged down on this issue after so long an interval? Here I suggest four key points, which can help to resolve the present difficulties and clear a way forward.

The **first** one is to recognise that the current debate has become painfully political and that this represents a significant barrier to open enquiry. Hostilities tend to become entrenched in a political debate, with opposing parties keen to score points and to persuade the uncommitted by the use of rhetoric. This is all too clear in the creationist literature and in many a snide remark about religion to be found in books on evolution. If we are to make any real progress, it is essential to put the politics aside and to discuss important issues calmly.

A **second** key point is to appreciate the role that the theory of evolution plays in biological science. In trying to understand the world around us, scientists develop theories in relation to current research. Thus evolution was proposed in the 19th century to account for the diversity of species through space and time, based on data gathered over the previous two centuries. Evolution continues to be accepted as a central theory in biology because it makes sense of so much data, thereby providing an essential tool for research on many topics, e.g. vertebrate palaeontology, which has grown dramatically over the past century.

It is equally important (our **third** point) to appreciate the theological doctrine of creation. This was developed by early Christian thinkers on the basis of their Jewish heritage and their experience of God in the early church. They formulated the doctrine of "creation out of nothing", in contrast to the philosophies of their day, to emphasise that nothing exists independently of God's creative power. Later theologians realised this implies that God's creative action is not confined to the beginning, leaving the universe to run on its own, but rather divine activity should be thought of as "continuous creation". These two ancient insights are well able to cope with an ancient universe unfolding gradually through time.

The **fourth** key point is that it does Christian theology no good at all to engage in criticism

of evolutionary biology as part of its response to difficult questions. In dealing with the significance of chance, for example, external criticism of biology is often ill-informed and so proves self-defeating. And introducing divine action to cover some apparent deficiency in current theory only generates a God-of-the-gaps, rendered redundant by later advances in science. Such a response also confuses divine and natural causes, and so

undermines the Christian concept of creation. A more appropriate response is to recognise that God is the one on whom everything depends and that the divine Spirit is able to work through chance events. As theologians explore this line of thought, the way forward would seem to lie in collaboration with biologists.

Science and Christian Belief

The Journal of Christians in Science (UK).
It comes out twice a year and contains many thoughtful articles.

Cost: Aust\$50 for one year's subscription

For subscription contact Helen Joynt, Administrative Secretary ISCAST (Victoria)

Reviews

Essential Darwinism?

Kirsten Birkett "The Essence of Darwinism"
Matthias Media. Sydney, 2001. 142pp.

Birkett's book is primarily pastoral, addressing an evangelical audience, some of whom continue to aggressively oppose evolution as a response to the sometimes equally aggressive scientific atheism of evolutionary scientists such as Dawkins and Wilson. She explains in effect, why there has been all the fuss about evolution for the last 150 years, some of which still continues. She concludes

"If God used evolution to bring humans to their current physical status then he did. ... whatever mechanism God used, he still created humans and it is not for us to complain about the mechanism", (p. 128)

She sets out first a reasonable account of the development of the scientific theory of evolution from before Darwin to contemporary Neo Darwinism. She is rather tentative however, about the status of evolutionary theory and of its importance for Christians.

At times she stresses a little too stridently the differences between some scientists and the importance of considering evolution as only a

theory that might be replaced. One can to some extent hear some of the "creationist" arguments reverberating in the background. She goes on to discuss the history of the Darwinism/Christian debate and the way in which this scientific debate was usurped by Huxley and his successors as a polemic theological debate in the mid 19th C. She then describes the views of three contemporary atheists, Dawkins, Wilson and Gould in relation to evolution and creation. It is certainly well documented that the scientific theory of evolution has been used as a tool to denigrate religion and to promote scientific hegemony. Her contention however is

"evolution has always been an idea firmly embedded in a religious—or more often anti religious context" (p 71)

The author then goes on to ask:

"Why do we never discuss evolution in a context that does not include religion, in particular attacks on Christianity...it's never been done". (p.110)

This is of course not true. Birkett ignores in this regard the considerable 19th C. scientific commentary on Darwinism, some from prominent Christian biologists such as Asa

Gray and the positive Christian reception of Darwinism by a variety of conservatives, brought out by both James Moore (*The Post Darwinian Controversies*) and by David Livingstone (*Darwin's Forgotten Defenders*). However her contention, even if only partly true, does substantiate the continuing fuss over the evolution debate and explains the reason for the reaction of many evangelical and fundamentalist Christians.

Burkitt does not seek to critique or interact with the scientific views of the vocal atheistic scientists she quotes, nor to critique or even mention their equally vocal anti evolutionary opponents such as Johnson, Behe or the young earth creationists. However this is scarcely a criticism since this aspect is not the object of Burkitt's book as she outlines in her conclusions. Her object is to ask

“ ‘Is evolution true?’ And to answer ‘It's hard to say’ and if so it doesn't really matter.” (p. 128)

There are however some aspects that do matter if we are to come to grips with the nature of a humanity created by evolutionary means by God. Some aspects of biological humanity form the vehicle through which biblical humanity is expressed—the soulish aspects as it were. How are we to view the evolutionary development of the mind, will, soul etc through which biblical humanity is expressed. These aspects are dismissed by Birkett as separate and theological.

In rightly opposing a reductionist understanding of humanity we must also avoid retreating to our bunker of preconceptions. If some of the new “scientific” problems of Darwinism are not faced honestly some of the fuss about Darwinism will continue into the areas of humanity, freewill, sinfulness etc. areas that we cannot retain as purely spiritual without recognising the vehicle through which they are expressed . In a sense Burkitt has retreated from these matters. These aspects cannot be so summarily dismissed, without some pastoral implications.

Allan J. Day

B. B. Warfield: Evolution, Science, and Scripture—selected writings

Edited by Mark A. Noll and David N. Livingstone. Baker Books, Grand Rapids, Michigan \$43.95

Benjamin Breckinridge Warfield (1851-1921) is a giant among evangelical and reformed scholars of the late 19th and early 20th century. A Presbyterian who taught at Princeton for over thirty years, he was an enormously prolific author many of whose works are still in print. The many issues to which Warfield contributed, included contributing to the defence of Calvin's theology, the role of apologetics, and distinguishing between genuine and counterfeit miracles. His best known contribution was in defending and formulating the doctrine of Biblical inerrancy, so important in 20th century fundamentalism. For many it is therefore a surprise that Warfield was also a strong advocate of organic evolution. Indeed, he once described himself as “A Darwinian of the purest water”.

Mark Noll and David Livingstone, both historians of no mean repute on the interaction of science, evangelicalism, and society in the 19th and 20th century, collected in this book all the works by Warfield on science. They include articles and reviews on subjects as diverse as causality, human prehistory, the interpretation of Genesis 1, natural theology, anthropology, divine action, the religious implications of organic evolution, and the latest developments in organic evolution. The articles are not simply of antiquarian interest either. Many of Warfield's observations, especially on the nature of divine action in the world, are still pertinent and thought provoking. His two articles of 1901 and 1903 contain perhaps the fullest development of Warfield's understanding of divine action as it relates to creation.

In the first of these articles, *Creation, Evolution, and Mediate Creation*, Warfield makes a number of definitions. “Evolution” is the way in which God controls particular material developments providentially. “Creation *ex nihilo*” is the divine origination of something out of nothing. “Mediate creation” is divine origination out of pre-existing material where that material did not, of itself, have the capability to produce the new entity. Warfield believed that Creation *ex nihilo* was necessary for the first appearance of matter. Evolution was “the method of divine providence”. Miracles, the incarnation, the origin of human consciousness, and individual human souls could not be explained by evolutionary means. In his second essay, *The Matter and Time of Man's Origin*, Warfield did not use the term “mediate creation” but described the origin of humanity in terms

compatible with it. Humanity appeared through two processes: divinely supervised evolution and miraculous imposition of the *imago dei*.

This book should not be taken as the last word on science, creation, and evolution. Science has progressed in the 80 years since Warfield's death, and so has our theology. However Warfield's thought is still well in advance of that of many who consider themselves evangelical and reformed Christians. The value of this book is therefore two-fold. First, it enables us to read the reflections of one of the most important 19th century evangelical and reformed theologians. Second, it shows how far modern fundamentalists have moved from their roots in their thinking on creation and science. Warfield was, in accepting organic evolution to a wide degree, in the mainstream of evangelical and reformed thought. Modern fundamentalists are not.

Jonathan Clarke

Can a Darwinian Be a Christian?

Michael Ruse, Cambridge University Press, 2001, \$55.95

Philosopher of religion Michael Ruse is in many ways well qualified to speak on this subject, having written many books on evolution, and been involved in the creation/evolution debate. He defines Darwinianism (ch. 1) as believing that evolution is a fact proven by the fossil record, biogeography, embryology, and so on, and that it is a mechanism—that of natural selection. This contrasts with the views of Alvin Plantinga, who by confusing the two is able to make disagreements in mechanism into denials of fact. Ruse claims that Calvin's view of the accommodation of God in scripture shows the creationist view to be non-traditional Christianity. If God created us as rational beings, we should accept Darwinianism (p58). He makes the useful distinction between methodological naturalism and metaphysical naturalism, where atheism sneaks in (p99), rejecting Plantinga's view that the former leads to the latter. For science to argue that the Christian position is meaningless is an arbitrary decision, and science is not arbitrary.

Particularly striking is his comparison of the inevitability of pain in natural selection with the centrality of the suffering of the cross. He insists that selection is a package deal which includes pain, for God can only do the possible

(p137), yet the cross shows God is not indifferent. While maybe heading somewhere, this perhaps makes God less than fully omnipotent.

His understanding of the bible is liberal and confused: sin is transmitted sexually (p35), the canon was decided not accepted, Christianity as a religion did not exist before the church fathers. He blindly accepts critical scholarship, rejecting the fundamental Mosaic authorship of Genesis (p.43), and believing bible texts are ambiguous and corrupted so miracles are not to be believed or read literally (p.97). He mistakes the variety of Christian views on ethics as denying a Christian metaethic (p.167) or normative ethic (p.180–1). He makes too much at times of natural law—a consequence of not being able to find a place for the fall in his understanding. His views of freedom and determinism (ch. 12) are at best semi-Pelagian (we are free to satisfy morality, p.215) and Arminian (God forecasts what we will do, p.208), and at worst Universalist (p.216).

He fallaciously argues that a good God would have created a human mind to understand creation perfectly, and that only natural selection can account for its limitations. If he understood sin, the finite nature of human beings or the transcendence of God, he might have found another explanation.

Ultimately, the desire for science to answer all questions leads him the way of all the philosophers of this age (1 Cor. 1:20). There are some useful ideas, and it is encouraging to see movements from the other "side of the fence" (though note his Quaker family background), but the book highlights the need for more considered thought from a biblical point of view.

Mick Pope

Christianity, Evolution and the Environment: fitting it all together

Barry J. Richardson. University of New South Wales Press

Barry Richardson is an ISCAST Fellow who is Professor of Biological Sciences at the University of Western Sydney. In this small book he explores the interaction between science and theology in relationship to organic evolution and humanity's place in the world.

In the first two chapters, *Thinking about the world, science as method* and *Thinking about God, theology as method*, the author covers ground familiar to many people in ISCAST on the nature of science and theology. The summary is no less valuable for being familiar. In particular his summary of the assumptions and limits of both science and theology are helpful.

Chapters 3 and 4 examine organic evolution as history and processes. As history, it looks at the history of life as part of the large-scale history of the universe; as process, in how organic evolution may be seen as the outworking of the anthropic principle through the interaction of chance and necessity. I had mixed feelings about the chapter on evolution as history because, while it is true that organic evolution is part of the whole system with cosmic, stellar, and planetary evolution, none the less it is also separate. Organic evolution does not entail stellar evolution for example, or stellar evolution organic evolution. Richardson's point about the link between organic evolution and the anthropic principle is, I believe, an important one, although almost always overlooked in any discussion on design in biology. It seems clear to me that the best place to seek design (if we should look for it at all) in the biological world is not in particular organs, like Paley, or in particular biochemical systems, like Behe, but in the fact that we live in a universe where complex biological systems can evolve at all. Biological design is most obvious in the fact that our universe seems fine-tuned for life.

The next three chapters look at the theological implications of such evolutionary theories. In *Creation and Evolution* the author argues that images of God as the intelligent designer or master engineer are singularly inappropriate in the light of science, as well as being unbiblical. The scientific and biblical evidence is consistent with a God Who has created a universe where the outcome of events is, at a deep level, indeterminate; a universe where God empties Himself and becomes incarnate in His creation to redeem it through the Cross. This emphasis on becoming is a theme in a number of theologians who have written recently on the doctrine of creation, such as Howard van Till and George Murphy, and it rejects some traditional understandings of God's sovereignty. I am not, however, convinced that God's sovereignty is in fact incompatible with a universe that in a scientific sense appears open ended. Just because things appear open

ended to us does not mean they are open ended to God.

The sixth chapter looks at some of the possible implications for redemption from Richardson's evolutionary perspective. He asks the question from what and to what are we being redeemed. For Richardson, redemption is essential for us to be lifted from our biological nature into the new creation rather than being saved from the consequences of a fall from primal innocence. He supports this by an appeal to the theological understanding of the Eastern churches which have apparently placed less emphasis on the judicial nature of human sinfulness and more on how it is driven by a fear of death, from which the cross and the resurrection delivers us. While I find his argument thought provoking, some more development of this would have been helpful.

The seventh chapter explores humanity's relationship with the rest of creation, the environment in the title. Here Richardson has useful discussion of human stewardship and accountability for creation, which centres about the fact that humanity has been gifted with unique abilities to relate to both God and the rest of creation. Further discussion here would have been useful, especially in relation to using God gifts in the world. I found unfortunate his contrast between modern "western" attitudes and the supposed more respectful attitudes towards the world of "Aboriginal Spirituality" when in reality all cultures have misused the environment and fallen short of God's requirements in this area.

Richardson closes with a creation myth that focuses on *Sophia*, the personification of divine wisdom. This left me, and perhaps other readers cold, but some might find it helpful. Overall I found this book an interesting introduction to the subject and look forward to future work by the author.

Jonathan Clarke

EVOLUTION, the Series

7 Episodes, Screened SBS, Nov 11th.–Dec. 23rd. 2001

The view that evolution and creation are conflicting standpoints is so ingrained in popular culture and in the secular media that there was an expectancy that this series would support such a view. Nothing could be further from the truth. It is essentially an excellent and informative science program about the nature

and the scientific evidence for Darwinian evolution. It is not in any sense a discussion of the evolution-creation issue (although it touches on it historically in the first session and deals objectively with the current creationist evolution debate in the US in the final episode). There is certainly no antagonism to religion raised or inferred. Indeed where the issue is raised at all, the program goes out of its way to affirm the complementarity of God, creation and evolution. This is evident in the first episode which features extensive comment by prominent evolutionary biologist Ken Miller (author of "Finding Darwin's God", 1999), both in his role as a scientist and also as a practicing Christian. Dawkins briefly comments on cultural evolution in the 6th session, but with no mention of his anti religious views: Creationist Ken Ham gets much more air time in the final episode!! The series concludes with the often forgotten final paragraph from Darwin's "Origin of Species": *"There is a grandeur in this view of life ...having been originally breathed by the Creator into few forms or into one..."*

Session 1, Darwin's Dangerous Idea, considers the historical background of Darwin and the emergence of Darwinism on the basis of the social, political and religious culture of 19th C. England. It brings out the reticence of Darwin to publish his conclusions in the light of the dependence of the science of the day on a natural theology demanding special creation and an anthropology completely separating humanity from the rest of biology. The core of the session indeed follows very closely the definitive biography of Darwin by Desmond and Moore and James Moore comments helpfully on the issues at several points in the session. In one such comment Moore brings out Darwin's growing agnosticism, but it is considered in relation to Darwin's disillusionment with a God who could allow his daughter Annie to die so young and not as a result of the theory of natural selection as replacing a creator God. Little of the conflict exploited by Thomas Huxley is developed. It is confined to the re-enactment of the 1960 legendary British Association debate between Wilberforce and Huxley at Oxford. The details of a triumphant Huxley over a bumptious Bishop can no longer be defended historically, but proved too great a temptation to let truth stand in the way. The scene with Admiral Fitzroy (the captain of Darwin's ship "Beagle") rushing forward with Bible held high in defence of a literal rendering (although

it may well have represented Fitzroy's views) is completely unsupported.

The first episode cleverly picks up (as do the succeeding sessions) some of the gaps in Darwin's theory of natural selection, and records how they have been filled by later information. The jump from the 19th C. to current observations of the rapid evolution of the HIV virus in current medical research is both fascinating and informative.

Session 2, Great Transformations, considers the proliferation of missing links, in particular of recent studies of aquatic tetrapods to land animals and of land mammals to aquatic mammals. The evidence from molecular genetics includes the molecular background for common body plans and the evidence from rapid adaptation, by natural selection, in rapidly multiplying organisms.

Session 3, Extinction, considers extinct species and in particular mass extinctions (such as dinosaurs at 60 million years ago) and their implications for mammalian and human development and the problems of present day extinction and the ecological issues.

Session 4, The Evolutionary Arms Race, explores the interaction of species and the evolutionary adaptation of both predators and prey—a race in which we as a species are engaged at present as the prey, in relation to the development of resistant organisms such as antibiotic resistant TB.

The natural history is both fascinating and informative and builds up an evidential picture in as much as that is possible in lay terms, as to why evolution is a foundational principle in biology and accepted by virtually all biological scientists.

Session 5, Why Sex? and Session 6, The Mind's Big Bang, raise some issues in relation to evolutionary psychology and the evolution of mind, which might give some concern to certain widely held Christian presuppositions. It is notable that the series confines itself to certain observations and identifies speculations as such. The evolution of behaviour patterns, particularly sexual behaviour and of the development of characteristics of humanity such as intellectual and emotional aspects of humanity are reviewed in terms of the development of mind and the emergence of cultural evolution. It is interesting to note however that the moral and religious aspects of humanity are not explored. and the reductionist

views of E.O. Wilson in this area are not suggested.

Session 7 What about God? This session is quite different to all the others, exploring as it does the contemporary creation science, evolution debate in the US. This is done in a particularly helpful and objective way emphasising the difficulties faced by Christian students struggling from a background of family and church biblical literalism. It moves from a statement of the Creationism position by Ken Ham to the formal and informal discussion of students and staff at the conservative Wheaton College, as the issues are frankly discussed, often with formal opposition from parents and supporters, and then on to a student family discussion. It is a powerful reminder of the considerable pastoral problems faced by so many sincere Christians coming from a fundamentalist background where young earth creationism is taught in church and family as biblical truth and evolution as a threat to faith. The session concludes with an examination of the struggle in schools, now being fought by students in the classroom and with school administrations, for creation science teaching to be mandatory.

The series can be thoroughly recommended to all who wish to see a factual and non polemic account of the science of evolution—a theory that forms the background of biology and of us as part of the biological world. It gives no fuel for any conclusion that suggests evolution is anti-God, but much fuel for the conclusion that Darwin's picture of natural selection, developed with so many unanswered questions in his time, has been vindicated by subsequent science.

Allan J. Day

Is God a Darwinian?

Finding Darwin's God, by Kenneth R. Miller, Cliff Street Books (Harper Collins), 1999, \$26.95

This book is somewhat misnamed. It is not about the God Darwin may or may not have believed in at various times of his life, but rather the theological implications of both organic evolution and the various alternatives proposed by different Christians. The author is an active catholic and Professor of biology at Brown University.

After a brief but very useful and well-referenced summary of the palaeontological and biological evidence for organic evolution, Miller looks at the four different gods of Christian anti-evolutionists, each in a separate chapter. *God the Charlatan* for Miller is the God of Henry Morris and his followers in the young earth creationist (YEC) movement. Their god is a charlatan because of the appeal to apparent age by YECs, whether in respect to starlight, radiometric dating, or the geological record. *God the magician* is the god of Phillip Johnson, a god who only works through processes inexplicable to science and therefore can only be found in the gaps of scientific explanation. These gaps are proof of the existence of Johnson's god, which explains his insistence that organic evolution is not an adequate explanation. *God the mechanic* is the god of Michael Behe, the god who, like Paley's watchmaker, coerces inanimate matter into living systems of amazing complexity. This god has not gifted his creation with the ability to bring forth life (although Behe has no problems with it bringing forth stars, galaxies, and planets). The scientific and philosophical inadequacies of each of these understandings of Divine action are highlighted.

Miller then goes on to critique the militant scientific materialists such as Dawkins, Lewontin, or Wilson and the more polite but still condescending comments of Dennett and Gould. While YECs and Johnson quite rightly condemn the anti-Christian prejudices of these authors, ironically, both the militant materialists and Christian anti-evolutionists seem to agree that evolution and Christianity are incompatible. Indeed some, such as Johnson, regard the theology of the militant materialists more highly than their science. Miller finds this position theologically naïve.

In the final chapters Miller explores the theological implications of an evolving creation. He is careful to point out the trap of deism that some people have fallen into and the need to confront the apparent wastefulness and cruelty of organic evolution. Like many other thinkers before him, Miller sees the solution in part being related to the kind of universe necessary to allow for genuine freedom and responsibility. However, unlike some others, Miller does not fall into the trap of denying God's sovereignty.

A most helpful book, even though it covers the science more extensively than the theology.

Jonathan Clarke

Letters

More on Teaching about evolution and the nature of science

This topic continues to generate correspondence. The following is a slightly edited version of a recent letter.

In this modern age of science and enlightenment, it seems incredible that we still have those who believe in magic, black and white, and in a God who is a "divine cosmic magician" and His disciples cargo cult followers awaiting riches here and in the hereafter. There is no cosmic "con-man" who "Magicked" the universe into being 6–8000yrs ago in-building an old earth geology. But the concept is still used because, again, it is a commercial success for those fundamentalist groups who keep their followers in ignorance and condemn as damned those of us who believe in a creator who took his time, billions of years, to bring to life this very unique and beautiful earth.

Sadly many scientists, too, have closed their minds and embraced creationism. D. I. Nicholson, open your mind and find the continuing messages springing from the creator God who works through His own laws of physics (perhaps through chance and necessity—Monod) to attain His will.

Dr Kevin D. Orr

Cloning Humans

This letter comments on Denis Alexander's paper (Bulletin 35) on the implications of cloning humans. His views are objective and comprehensive, such that it would be difficult for any Bulletin reader to disagree with them. Probably the main problem we face is, how do we react to the inevitability of cloning humans, whether we like it or not? Though the probability of a viable human clone seems small, it is reasonable to assume that our Lord will give life to a successful result as He does to a normal birth, notwithstanding the added probability of genetic defects (cloning from other than undifferentiated cells risks the consequences arising from the unstandard operation of genetic switches). It seems more likely to the writer that human clones will require to be ministered to by caring Christians just as regularly born people with birth defects do. And Alexander makes the point that a clone of a highly capable individual may not turn out to have like capability. This means that the traditional method of procreation is far more likely to produce desirable qualities than cloning, because so much more of it takes place. Perhaps we may expect that, for these reasons, human cloning will finally prove to be a dead end.

Ian McDowell

The deadline for submissions for the next issue of the Bulletin is May 31st

Word limit for articles is 1,000 words. For letters, reflections and book reviews it is 600 words. Exceptions may be made in exceptional cases.

Please submit to Jonathan Clarke 43 Michell St., Monash, ACT 2904, to the email address on the front page. Electronic submissions are preferred.