

ISCAST BULLETIN 37

Winter 2002

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

Institute for the Study of Christianity in an Age of Science and Technology

A Non-profit company. ISCAST Ltd.
ABN 11 003 429 338.
Print post Approved PP 439224/00002

website: www.iscast.org.au

Chairman:

Prof. JW White CMG FAA FRS, Research School
of Chemistry ANU, ACT 0200 Email:
jww@rsc.anu.edu.au

NSW Contact:

Dr. Lewis Jones 202/35-47 Wilson Lane,
Darlington, NSW 2008 (02) 9519 0189
Email: lewis.jones@unsw.edu.au

Queensland contacts:

Dr Ken Smith ISCAST Ltd., 110 White St
Graceville Qld. 4075 Ph (07) 3379 6117
Email: kgs@maths.uq.edu.au

Ms Susan Steensma
Email: qld@iscast.org.au

Victoria contact:

Dr Helen Joynt, Administrative Secretary ISCAST
(Vic), 8 Mabel Street Camberwell Vic 3124
Ph/Fax (03) 9836 6871 Email: vic@iscast.org.au

Bulletin Editor:

Dr Jonathan Clarke, 43 Michell St, Monash, ACT
2904 Ph (02) 62920969 (h)
Email: act@iscast.org.au

For circulation concerns, contact the state
representatives. To submit articles contact the
editor. For news of forthcoming meetings please
consult the web page.

*The views in this Bulletin are those of the
individual authors or the editor. They do not
necessarily reflect the official views of the ISCAST
Board.*

Editorial

God and Rocks

I sometimes tell people my two favourite topics are "God and rocks". I also say at times "To what else could the Bible compare God, but to a rock?" Perhaps my geological prejudices are showing!

Be that as it may, geology is a very important science for material human welfare, as we are all dependent on the earth for food, water, air, and raw materials. Geology has also been important in the development of the scientific world picture, with its most important contribution its discovery of deep time. Scientific method, in particular the use of multiple working hypotheses and recognition that all scientific facts are theory laden, has also benefited from geology.

Christians, and specifically clergy, played a bigger role in the development of geology than perhaps any other science. An Australian example is the Rev. Clarke (no relation!) who was the first government geologist of New South Wales. The work of people such as Clarke not only advanced the science of geology but also clarified how different world views affected people's understanding of God's work in the world, I discuss examples of this in my essay on deism, semi-deism, and theism adapted from the notes for the Ridley Science and Christian Belief course. Despite the plethora of Christian geologists, the myth that there was a conflict between Genesis and geology in the 19th century is deeply entrenched and widely repeated. The Rev. Michael Roberts writes on how this myth continues to be promulgated by popular writers.

COSAC 2003
ISCAST'S 4th Conference on Science and Christianity

GOD, SCIENCE AND DIVINE ACTION

Avondale College, Cooranbong, NSW
(Cooranbong is about one hour's drive north of Sydney, 2 hours by train)

July 18-20, 2003

Inquiries to Dr. Peter Barry 72 St Thomas St, Clovelly, NSW 2031
P.Barry@unsw.edu.au or www.iscast.org.au

News

ACT

The report of the diocesan committee chaired by John White on stem cell cloning has been submitted to the Bishop of Canberra and Goulburn. Entitled *The Cloning of Human Cells: a response to the scientific issues from an ethical and theological perspective*, it can be viewed on the worldwide web on the diocesan web site at:

<http://members.tripod.com/~angchcbr/index.html>

NSW

Robert Stening has after many years faithful service, stepped down from his role as secretary for both ISCAST nationally and in NSW. He has also been coordinating planning for COSAC 2003. I would like to thank Robert for his many efforts on behalf of ISCAST over the years. Robert will continue to be involved with the NSW chapter. He has been replaced as NSW secretary by Lewis Jones and as COSAC 2003 convenor by Peter Barry.

Peter Barry started a geology degree at the University of Sydney but then switched to Physics, attaining a BSc Hons in Physics in 1963. He completed a PhD in (Plant Biophysics from the University of Sydney in 1967, with some research being done at the new Flinders University of South Australia. He then spent three years post-doctoral work in the Dept of Physiology at UCLA and one in the Physiological Laboratory at the University of Cambridge, before returning to Sydney on a QEII Fellowship in the School of Physiology and Pharmacology at the University of New South Wales in 1972. He was appointed to a

lectureship in 1974 in the same School, a DSc in Membrane Biophysics in 1991 and became a Professor of Physiology in 1994. He took early retirement with the provision of a Conjoint Professorial position in 2002 to concentrate on research at UNSW. He is currently the Vice-President (President-Elect) of the Australian Society for Biophysics. He became a Christian in second year at university, and with a particular interest in the relationship between science and the Christian faith, has been associated with ISCAST for many years and is a Fellow, and on the Board of Directors, of ISCAST. He is a tertiary representative on the Graduate Research Awards Board of the Australian College of Theology and is an involved member of St Paul's Anglican Church, South Coogee. He is married to Betsy, whom he met in California, and they have three adult children and three grandsons.

Lewis Jones was raised in Wellesley, Massachusetts, just outside of Boston, and grew up in a church community as part of a Christian family. He completed his B.A. in Physics at Erskine College (an Associate Reformed Presbyterian institution) in 1990 and his Ph.D. in Astrophysics at The University of North Carolina at Chapel Hill in 1996. Lewis landed in Australia in December 1996 to take up a postdoctoral position at The University of New South Wales. The year 1999 was a big year for Lewis, as he left Astrophysics to be an apprentice with the Ministry Training Strategy and also married Jenny. With the Anglican Ministry Training Strategy, Lewis began to organise a ministry among the postgraduate students and staff at UNSW. Now, as he is half

way through his second year of a B.Div. at Moore Theological College, he has joined the Australian Fellowship of Evangelical Students as a staff worker and brought the postgraduate ministry under the AFES umbrella with the intention of working nationally to build postgraduate and staff ministries when he finishes his studies.

There will be a series of 5 meetings leading up to the COSAC2003 conference. These will be based on the book, "Science, Life and Christian Belief" by Jeeves & Berry.

QLD

ISCAST Queensland (and nationally) welcomes the appointment of Susan Steensma as treasurer of the state chapter. In addition to her financial duties Susan will be carrying out public relations and secretarial roles for ISCAST (QLD). Susan comes from an environmental science background and has a long-standing interest in science and religion.

Some ISCASTians may have met her at COSAC99 in Lilydale.

SA

Ping Han moved from Adelaide to Sydney in April.

VIC

Andrew Sloane has been farewelled from ISCAST(Vic) over a meal, and will be moving to Sydney in July, where he takes up a position lecturing in Old Testament and Christian Thought at Morling College.

'Appropriate Technology' Thinkling.

This event was hosted by Don and Laurel Stewart at International House, University of Melbourne, on Saturday May 18. Richard Gijbers chaired the evening with contributions from Don Stewart and Ross Macmillan. There were about 15 others to toss the ideas around. 'Thinklings' are a new move in Victoria, to introduce a forum for ISCAST Fellows and others to begin to open up discussion on significant science/faith topics in an informal atmosphere.

**Look at the ISCAST web-site for the latest information about local ISCAST events!
www.iscast.org.au**

Books on Science and Religion from the Australian Theological Fellowship

"God, Life, Intelligence, & the Universe." Edited by Terrance J Kelly and Hillary D. Regan. ATF Science and Theology Series: One, 2001. \$35.00

"Interdisciplinary Perspectives on Cosmology and Biological Evolution." Edited by Hillary D. Regan and Mark Worthing. ATF Science and Theology Series: Two, 2001. \$25.00

"Habitats of Grace: biology, Christianity, and the global environmental crisis." Carolyn M. King, ATF Science and Theology Series: Three, 2001. \$25.00

These books can be ordered from the Australian Theological Forum, P.O. Box 504 Hindmarsh SA 5007

Anyone interested in reviewing these books please contact the ISCAST editor for the loan of a review copy.

Articles

Three views of Divine interaction

The way we view God's relationship with the world has profound consequences for our

understanding of events in that world. In Hooykaas's 1959 book *Natural Law and Divine Miracle* the author explored how this relationship affected the development of geology, biology and astronomy, in the 17th to 19th centuries. Different views on God and His

world were important during this period given the fact that most scientists were influenced by Christian theology, even those who were not practising Christians. Hooykaas contrasted three views: deism, semi-deism, and theism.

Deism

Deism in 17th–19th centuries Europe was a degenerate form of Christianity that rejected God's action in the everyday world or on a personal level. Deists thus rejected revelation and miracles and were also Unitarian. The world is a closed system and God either does not or cannot act in the world. The deists saw God as the supreme watchmaker and the universe as a supreme mechanism. God is only active in the beginning and since that first moment of creation has left the world alone. The watch has been made and since then has ticked away by itself. The 17th to 19th century deists saw God as creating the world as a whole. However the discovery by geologists and astronomers that creation is an ongoing process over a long period of time invalidated this restriction of God's work to creation ex nihilo and de novo. To modern science a deistic God is confined to establishing the boundary conditions of the Big Bang. The "God" of Stephen Hawkins and Paul Davies is such a being.

Semi-deism

Semi-deism also regards God as the watchmaker. The universe runs independently of God under normal circumstances according to natural laws. However semi-deists also see God as "intervening" in the world from time to time. These events are "supernatural" because they cannot be explained by natural mechanisms, and are miraculous. God is seen to be especially present in miraculous events to a degree He is not present in every day events. Semi-deism affirms revelation and miracles, and so in most aspects appears orthodox Christianity and is widespread among Christians. Indeed it may be the dominant worldview among most Christians of God's interaction with His world. Many agnostics and atheists also regard semi-deism as the Christian position. However popularity does not necessarily make this the actual worldview of the Bible.

The problems arise when semi-deism is applied to God's action in the world as creator and sustainer. One image of God in a semi-deistic worldview is God as mechanic,

constantly tinkering and fine-tuning the world. Rather less flattering is the picture of God as magician, performing inexplicable wonders. Anything that is inexplicable is likely to be regarded as a sign of God's direct action. "God of the gaps" thinking is a common outcome of the semi-deistic worldview. Semi-deists will however defend such gaps as long as possible as they are proof to them of God's activity. More harmful is the view that God is deceptive, creating the world supernaturally, with the appearance of natural formation.

The god of Phillip Johnson, who *must* create supernaturally in the biological world, whether with the initial appearance of life or the appearance of new taxa, is a semi-deistic God. Why living things should enjoy this special status that rocks, stars, and galaxies do not, is not clear. Nor is it clear why Johnson accepts that individuals (also spoken of in the Bible as God's creation) can be formed through natural processes when the taxa to which they belong cannot. Alvin Plantinga's calls for a "theistic" science which has supernatural events built into it, in contrast to an "atheistic" science which does not, are also very close to semi-deism.

Theism

This word means different things to different people. To some it refers to any belief in any god, singular or plural, as opposed to disbelief, which is atheism. Phillip Johnson, in books like *Darwin on Trial*, uses theism in this general sense. Hooykaas used the word in a special sense, in contrast to deism and semi deism. The theism of Hooykaas is Biblical theism, indeed it is the theism of reformed Christianity where God is sovereign over all things, not just some things. God acts in the world through both natural and miraculous processes, He is no more or less present in one than in the other. This God reveals himself through the book of His words and the book of His works. In the former God has spoken through His prophets but most clearly through His son, Jesus Christ, by whom and for whom all things are being and will be reconciled to God through the cross. Creation has a goal that is that all things will be under Christ's lordship in the new heaven and new earth. The distinction between "natural" and "supernatural" events, so important to semi-deists, is irrelevant to a theist. God works continuously in the world; whether He does so by seemingly natural or seemingly supernatural processes is a secondary issue. A

theist need make no *a priori* assumptions about any act of God being achieved by natural or supernatural means, that difference is something that can be worked out from the evidence.

Several analogies have been developed to illustrate God's interaction with the world. One is God as playwright, as proposed by Dorothy Sayers in *The Mind of the Maker*. A playwright who also directs the performance creates a story, supervises construction of the stage, and directs the action. The play is truly his or her creation. In the process the playwright freely interacts with other people – actors, stage mechanics, etc., to achieve the goal. In Christian theism God is also an actor in the play, through the incarnation, rather as Shakespeare is said to have acted in some of his own plays. A second analogy is God as creative artist or novelist, an idea also proposed by Sayers and J. R. R. Tolkien. The artist or author imagines and creates a world, a subcreation, entirely within his or her imagination. Characters within this world have their own reality, but one which is dependent completely on the ability of the artist or author to actualise it. A third analogy is the TV model, most cogently argued in *The Clockwork Image* by Donald McKay. It describes God's moment by moment sustaining of the universe by comparing it to a TV. Just as a TV picture is sustained by the signal and current, so the

world is sustained by God. the world is separate from God, just as the TV picture is separate from the power station and transmitter, but it is not autonomous. All these images are metaphors, they illustrate some aspect of the theistic worldview. Each is incomplete, and people will differ in the degree to which they find them helpful.

The main consequence of Biblical theism is Christian faith, in which one is constantly moving from the individual's perception to interaction with God—from the "I" to the "You". Contemplation of creation leads to—or should lead to—contemplation and worship of the Creator Who is also our Redeemer. With respect to science this means that science is not an anthropocentric activity but one where the individual is constantly interacting with God the creator through His works. For the Christian this occurs in parallel with the interaction with God's word and the individual's personal faith. For the Christian in science the practice of science must be something that engages the whole person, not just a part isolated from the rest of him or her.

Jonathan Clarke

Science and Christian Belief

The Journal of Christians in Science (UK).

It comes out twice a year and contains many thoughtful articles.

Some back issues are also available at Aust\$35 each including postage and packaging.

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

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

Essay Review

Another View of the Tower of Babel

Robert T Pennock The Tower of Babel MIT Press, 1999, p429, ISBN 0-262-16180-X. This book was favourably reviewed by Ken Smith in ISCAST Bulletin 33. Not everyone is impressed by it, as the following essay review shows.

My awareness of Creationism goes back thirty

years when I read a review of the Genesis Flood while working as a geologist in the Namib Desert of South Africa. I had become a Christian two years before at University after reading *Mere Christianity*. As well as reading most of Lewis' non-fiction, I absorbed Schaeffer's works. On return to Europe to train for the Anglican ministry I went to L'Abri for a month. That was a strange but formative experience, marred at the time as I was

recommended creationist books, which were a red rag to a bull for a geologist. However, my time at L'Abri taught me that creationism needed understanding before rebuttal. I also became convinced that the understanding of it needed to be historical as well as scientific and theological, and thus all my historical interests revolve around creationism in the widest sense. This provides the background to my criticism of Pennock.

Is this the real Darwin and his teachers?

I bought a copy of Pennock's book on a friend's recommendation to prepare for the Intelligent Design conference at Wisconsin in June 2000, to know what critics of ID were saying. While reading Pennock I was also preparing three academic papers on Darwin's geology for publication, and thus was drawn to the section where Pennock contrasts Darwin's alleged Creationist beginnings against his later wisdom when he had rejected the ideas of his Cambridge professors Henslow and Sedgwick, and converted to Lyell. To say that Henslow and Sedgwick had "detailed hypotheses of catastrophist flood geology" is laughable. More risible is Pennock's website, which gives his syllabus on Science and Religion:

"We'll look at Darwin's Cambridge professors, who were creationists, and see what happened when they investigated geology as though the Bible's account of the Noachian deluge was a scientific hypothesis."

Pennock simply misunderstands how Henslow and Sedgwick practised their geology in the 1820s, as there is simply no evidence for his claim that Sedgwick or Henslow 'had devoted years of research to the Flood hypothesis'. Sedgwick spent his summers from 1818 working on the stratigraphy of Britain. My own work on Sedgwick has been confined to his Welsh work from 1831 to 1842, when his field methods were virtually the same. His geology was also invariably spot-on. In my fieldwork I always have recent geological maps to guide me so I commit the historians' unforgivable sin of judging a scientist of the 1820s by today's standards. Yet I am always amazed by both Henslow's and Sedgwick's skill. Sedgwick wrote only one article on the Deluge in 1825, *Origins of Alluvial and Diluvial Formations*. This was a sound article on the state of "drift" (the sand, clay, stones and boulders dumped by glacial ice on land) geology and only a step away from the Ice Age theory. He considered the drift

"to demonstrate the reality of a great diluvian catastrophe during a comparatively recent period' and that 'It must be rash and unphilosophical to look to the language of revelation for any direct proofs of the truths of physical science."

The Flood scarcely figured in his geology of the 1820s so thus his recantation in 1831 of a diluvial (i.e. Deluge) origin for drift was only a minor one. Henslow also wrote a single article on the Flood in 1822, when he explained the Flood naturalistically by the effect of a passing comet. Here, he was following Whiston in 1690. What Sedgwick and Henslow were doing on the very few occasions when they wrote on the subject was to look for scientific (naturalistic?) explanations of the Deluge. This is in complete contrast to Pennock's insinuation that they were operating in the same way as the ID lobby in advocating for a "Theistic science" with in-built necessary supernatural hypotheses.

Pennock's treatment of Darwin's geology both before and during the *Beagle* voyage is also wrong. He seems to think that Darwin got nowhere with his geology until he studied Lyell. In fact, when he read Lyell in 1832 he was already a highly competent geologist having been taught by Sedgwick and Henslow. Darwin visited the highly complex Ordovician strata in Cwm Idwal in Snowdonia after leaving Sedgwick and his perception and skill in trying to unravel is first-rate, all due to Sedgwick 's teaching. Darwin's interpretative geological framework evolved during the *Beagle* expedition from that of Sedgwick and Henslow to that of Lyell, there was no outright rejection. Darwin adopted Lyell's theoretical approach of Uniformitarianism to mould his interpretations. He said of himself that he "out-Lyelled Lyell" and he did, as, for example, at Glen Roy in Scotland in 1838, where he made "one long, gigantic blunder" in that he reckoned that the Parallel Roads were former marine shorelines above 300 metres. These have now been shown to be glacial features.

Other scientific errors

Not only is Pennock's treatment of the history of science is badly flawed, he is also factually wrong. Two examples will suffice; the extinct giant sloth *Megatherium* was named by Cuvier in 1826 and not by Darwin in 1832. The supposed date of Darwin's naming of the animal is in fact two months after Buckland's

famous lecture on it! Worse still is his treatment of geological age-dating; it is reminiscent of that of many young earth creationists (YECs) in its factual errors. For example he states Carbon-14 was the only form of radiometric dating available until the 1950s (p.77), whereas uranium-lead was first used by Boltwood before 1910.

A Tower of Babel?

However, this diverts us from the core of Pennock's work. In it he contrasts the alleged true scientific methodology of Darwin and his successors, i.e., pristine methodological naturalism, with the supposed theologically polluted understandings of Darwin's teachers. Pennock then places all who suffer from such theological pollution, including 19th century geologists, creationists, ID advocates, and all present day Christians in science into his "Tower of Babel".

Pennock uses this image to bring together in a pejorative way all those silly ideas he calls Creationism. Despite having differentiated the varieties of "creationism" from YEC to Howard van Till in the first chapter, he spends the rest of the book smoothly gliding from one to the other to mislead the undiscerning, and give the discerning high blood pressure. To describe van Till as "brush(ing) right up against the border" of Scientific Creationism is laughable. To say that when van Till writes "To know God as Redeemer, one must first know him as Creator" makes him "sound like a creationist" is even more so. In this Pennock attempts to tar all Christians with the same brush of scientific creationism. Thus, Henry Morris and Dwayne Gish, Michael Behe and Phillip Johnson, along with Henslow and Sedgwick, are portrayed as of the same creationist mould. Of course, all are **creationists** in the wider sense—along with Arthur Peacocke, John Polkinghorne, and myself.

With his overpopulated "Tower of Babel", Pennock is able to move seamlessly from Young Earth Creation-science, with Paluxy footprints, moondust and population growth, to Behe's mousetrap and other Intelligent Design arguments, as if they are of the same calibre. It is one thing to criticise Behe, Dembski, and others, but it is another to cast them as pseudoscientists. I, for one, have serious criticisms of ID, but I will not dismiss them out of hand.

Theological issues are largely left to one side, apart from sweeping criticisms of inerrancy and "plenary verbal inspiration". He is dismissive and fails to understand the conservative position of scripture whether that of a van Till, William Dembski or Ken Ham. In this he sounds like Bishop John Spong.

Flaws in "Intelligent Design"?

In his critique of design Pennock has insufficiently engaged past reflection on the issue. We need to see design in the light of John Ray and others in the 17th Century and with Paley, Buckland and others in the 19th Century. That Pennock fails to do, and simply mocks Paley without understanding him. The main difference between Paley and contemporary Intelligent Design is that Paley looked for Design in everything whereas Intelligent Design regards some of nature to be designed and the rest undesigned, thus calling to mind Howard Van Till's description of it as "Punctuated Naturalism".

One issue ID supporters need to come clean on is the age of the earth, as, if the earth is 4.5 billion years old, then we have a God—sorry, Intelligent Designer—popping back at regular intervals to do a bit more. If in the 1850s the French geologist Alcide d'Orbigny was correct to say that there were 27 extinctions and new creations in a small part of the Jurassic alone then there must have been some 1500 new creations since the Pre-Cambrian. This question must be faced by the supporters of ID.

Naturalism

The "Tower of Babel" metaphor also mars Pennock's discussion on naturalism in his chapter *Of Naturalism and Negativity*, even though "naturalism" is a slippery term with as many meanings as "evolution". The definition of "naturalism" is difficult, but, briefly, it is the insistence on explaining natural phenomena by secondary causes is inconsistent with divine activity. Pennock equates the two-model stance (atheistic evolution vs. YEC) of young earth creationists with ID's opposites of Naturalism and "Theistic Science". The two models are so different that confusion ought to be impossible. Despite this weakness, Pennock rightly distinguishes between methodological naturalism and ontological naturalism, which many supporters of ID, and Johnson, in particular, often fail to do. This is the Achilles' heel of Johnson's argument against naturalism.

However, the methodological often slides into the ontological in practice, as may be seen in theologians like Peacocke, who, despite affirmations of theism, limit "action" to a closed universe. There are of course many non-religious scientists who assume a closed universe and thus no God. Their view is clearly materialistic and contrary to any Christian viewpoint. It would not take long to find many examples, and it is the logical position of a non-theist. Pennock attempted to consider naturalism historically, but here his lack of history fails him as he attempts to argue that ID "is nothing but a version of the old argument from design" and a restatement of the old earth type of creationism, which was collapsing by the mid-nineteenth century. We should not think of ID as a rehash of early 19th century ideas, though it does have some similarity with what Darwin called "the ordinary view of creation" in *The Origin of Species*. This allowed for an old earth, progressive creationism with God intervening at intervals.

There is an interesting pair of confusions here; Johnson overstates the "materialist" side of Lyell and Darwin, and Pennock dismisses the Pre-Darwinians for being too creationist and wedded to design, and chooses to ignore the contribution to science of these "theistic scientists" from Boyle to Sedgwick. Both Johnson and Pennock err. Now there needs to be some hard thinking on both the varieties of naturalism and theistic science, but this is not the place. Both Johnson and Pennock polarise the discussion. Neither seems to allow room for miracle in any form of naturalism and ignore that some form of naturalism has been followed by "Christian" scientists since the time of Robert Boyle in the 17th Century, through Darwin's supposedly errant teachers, until those of today. What is urgently needed is a careful historical study of both naturalism and design.

Redemption?

One of my concerns with ID is that it considers only the mechanical processes of Creation and nothing about redemption. The case of Paley should be a warning. Evangelicals did not warmly welcome Paley when his *Natural Theology* was published in 1802. Though much of Paley's argument of design was very acceptable, the main criticism was that Paley paid insufficient attention to Revelation and tried to prove the existence of God without reference to the "direct communication" of Revelation. To emphasise the point, a reviewer

in *The Christian Observer* of 1803 claimed of Paley's argument that "it was made the ground of the theological system of Thomas Paine". Paley had in fact offered a religion of reason rather than Redemption in Christ. This reflects the evangelical concern for a religion centred on redemption and revelation rather than reason. Later Evangelical writers, such as J. B. Sumner (Archbishop of Canterbury 1848-62), also stressed the limitations of natural theology and how revelation was always necessary to enable one to "know God and to enjoy Him for ever". This warning needs to be heeded today as ID could lead to "Christianity without Christ" where "specified complexity" becomes more important than salvation in Christ.

Education

Now Pennock is very worried about the implications in the teaching of science. Like Pennock, the thought of encouraging YEC in schools and colleges fills me with horror. But Pennock does it again, and puts all dwellers of Babel together, tarring ID with the YEC brush. He is hoist on his own petard as his whole Tower of Babel methodology to rubbish all and sundry is as ideological and not intellectually dishonest as some of those he criticises.

Two grains of wheat among the chaff

In the course of his book, and almost lost under the weight of his rhetoric, Pennock gives two sound criticisms of the ID movement. This first is his differentiation of methodological and ontological naturalism discussed above, which many fail to make and others fail to understand. The second is the avoidance of the ID movement to committing themselves to the age of the earth. As Nancy Pearcey wrote in *Touchstone* in 1999:

"For too long, opponents of naturalistic evolution have let themselves be divided and conquered over subsidiary issues like the age of the earth".

To any with even a basic knowledge of geology that is both an unacceptable statement and an unacceptable practice and gives some credence both to Pennock's better founded criticisms and Van Till's epithet of ID as "Scientific Creationism in designer clothing". Not to accept the vast age of the earth is an implicit rejection of physics and chemistry, as well as geology. This ambivalence to the age of the earth is the main reason why I have

reservations with ID, though I respect some of their arguments and applaud their attack on atheistic naturalism.

My greatest worry is that this book will be seen as a definitive critique of all so-called "creationism", and will feed the prejudices of

"non-creationists" and thus stifle dialogue on an extremely important issue. It made me aware that the "Culture Wars" are a reality, especially in the United States, where there is often an unreasoned hostility to anything Christian (past or present) by some mainstream in academia.

Michael Roberts

Book Reviews

Old Father William

The Map That Changed the World: the tale of William Smith and the birth of a science. Simon. B. A. Winchester London: Viking, 2001. 338pp. hb. £12.99. ISBN 0-670-88407-3.

Over the last few years there have been several popular works on the history of science and Simon Winchester has produced a very readable life of William Smith, the "Father of English Geology". The author is both a geologist and a journalist and brings both skills to his book. (His geological background is almost identical to mine as he was two years my senior at university and began work in a Ugandan mine).

William Smith is one of the many neglected scientists, whose significance is not widely known. His story is accurately and well told and makes a gripping read, how a canal engineer laid down the basis of geological correlation thus enabling the strata to be put into historical order. Smith was a canal engineer and developed his understanding of fossils in the strata in the coal seams and canals near Bath, before travelling the length of England. The book details his travails in publishing his map in 1815, his spell in a debtors' prison and how his work was plagiarised by George Greenough. At the end of the 1820s Smith was befriended by clerical geologists such as Sedgwick and Buckland, who enabled him to be given the recognition he deserved. To know more, simply read the book.

However Winchester's book suffers from two weaknesses. First, he makes too much of a hero of Smith and ignores his contemporaries, thus giving the impression that Smith is the father of geology and not only the "Father of English Geology". The crucial decades for the growth of geology was from 1780 to 1800, as

advances were made simultaneously throughout Europe. Winchester gives a little recognition to Hutton and the much-maligned Werner (whose work is now being recognised and who also attempted a map of his homeland), but does not refer to de Saussure of Geneva and the Frenchmen, Soulavie, Cuvier and Brogniart. Consequently the subtitle *The tale of William Smith and the birth of a science* gives insufficient recognition to the other numerous midwives of geology.

Secondly, Winchester has a totally inaccurate understanding of the British churches in relation to the rise of geology, and simply repeats, with exaggerations, the old myths that there was a mighty war of Genesis and geology in the early 19th Century. He refers to the "church" negatively some thirty times and it gets tedious. His prejudice surfaces most blatantly on p29,

"The hunch that God might not have done precisely as Bishop Ussher had suggested... was beginning to be tested by real thinkers, by rationalists, by radically inclined scientists who were bold enough to challenge both the dogma and the law, the clerics and the courts".

Or, to put not too fine a point on it, only those who were not Christians in any way. Here Winchester is writing of the 1790s a mere one hundred years after the Rev. John Ray and Edward Lhwyd were questioning the age of the earth. In fact throughout the previous century most thinkers, Christian or deist, thought the earth was older than Ussher's estimate. What is the dogma and the law which forbade suggestions of an old earth? Granted some clerics did hold to Ussher's age but the vast majority did not. Lastly, who was under any threat from the law for holding to millions of years? How does Winchester explain that it was the clerics Richardson and Townsend who

spread Smith's ideas and Playfair Hutton's? In his discussion of the clerical trio Buckland, Sedgwick and Conybeare he manages not to mention that they were ordained and any reader of the book could be forgiven if he did not realise that Sedgwick was a devout evangelical cleric! Winchester simply cannot accept that a clergyman could actually accept geological ages without challenging his faith, as is evidenced by his comments on Lewis, who helped Murchison unravel the Silurian in 1831. He wrote:

"Many of the ... fossilists were ... called *divines*—a curious happenstance, considering the assault that any intelligent understanding of fossils would later have on divinity's most firmly held notions, like the Creation and the Flood. The Reverend Thomas Lewis of Ross-on-Wye is characteristic of the type". (p.115)

This can only be described as complete and utter nonsense, if not bigotry. The author has absolutely no knowledge of the doctrine of Creation or the Flood and is ignorant of how the clerical geologists actually thought. His section dealing with Ussher (pp.16–21) is both flippant and inaccurate. Winchester has simply not grown out of the outworn conflict thesis of science and religion, which by now should have been rejected by any who dabbles in the history of science and Christianity. However it is a persistent myth which is propagated through a popular misunderstanding. This myth encourages both unbelief and creationism.

This book is a veritable curate's egg, on Smith as a geologist it is excellent, but as soon as he puts matters into religious context rotten as only a rotten egg can be! This could have been an excellent book.

Michael Roberts

The Universe in a Nutshell

The Universe in a Nutshell, Stephen Hawking, Bantam, London, 2001, 216 pages

Stephen Hawking is the Lucasian Professor of Mathematics at the University of Cambridge, a brilliant theoretical physicist and occupier of the chair once held by Sir Isaac Newton. His *A Brief History of Time* appeared on the *London Times* bestseller list for more than four years. The new book is to inform the scientifically

literate who have only basic knowledge of cosmology. It exemplifies Shakespeare's 'I could be bounded in a nutshell and count myself a king of infinite space' (Hamlet, Act 2, Scene 2).

It has long seemed to the reviewer that the science which ISCAST attempts to interface with Christianity is objective, experimental and everyday rather than abstract (dependent upon mathematical models), theoretical (difficult of experimental proof) and exotic (deals with the very large or the very small). Our science is thus a subset, and possibly a small one, of the whole available field. If this is so, then a reading of Hawking's books may do something to retrieve the balance. This is so even though he is a logical positivist, refusing to invoke the numinous, transcendental and supernatural at all. Yet his class of understanding is necessary for what we try to do.

A vast amount of work is being done in cosmology, and we need to get to grips with it. We learn from Hawking about the nature of the phenomena such as:

- "The big bang" (the singularity at the beginning of the universe about fifteen billion years ago)
- "Black holes" (regions of space from which nothing can escape because of the strength of gravitational force within them)
- "Branes" (concepts in string theory—a 1-brane is a string, a 2-brane a surface etc., such that gravitation but not other fundamental forces act between branes)
- "Dark matter" (mass required to explain why our galaxy rotates much faster than conventional theory requires, detectable only by brane-gravitational effects)

Better known concepts are of course included, thus we may also learn about the following:

- "COBE" (the acronym for the experiment which detected the universal residue of radiation from the "big bang", about 2.7 degrees Kelvin)
- "Imaginary time" (a mathematical construct different from the linear concept of time which allows of a start and a finish)
- "Planck constants" (e.g. length, about 10^{-35} cm, time, about 10^{-43} seconds etc., fundamental units at which constants required for equations using the cgs system become unity)

- "Quantum gravity" (the incomplete effort to explain gravitation by merging relativity and quantum theories)
- "Uncertainty principle" (Heisenberg's finding which makes determinism impossible)
- "Vacuum energy" (a property of "empty" space which postulates continuous creation of complementary particle pairs, and makes possible the black hole radiation discovered by Hawking, which occurs when only one of a pair falls into a black hole).
- "Wormholes" (microcosmic singularities which, if traversable, might allow travel in time)

Any variant in the properties of any of these results in a different universe. Hawking seems to take the view that such universes necessarily exist (in M-brane space). He and his co-workers are presently attempting to explain quantum gravity and other observable phenomena in terms of these. He explains our limitations by means of the "anthropic principle", which says that we observe only this universe because if anything were changed significantly we could not exist to observe it.

Don't imagine that all this is university level science fiction. Hawking leaves us in no doubt what he thinks of *Star Trek* and its analogues. He considers that civilisation is developing so fast as to be unrecognisable in a hundred years or so. A corollary of this is that the time window of a civilised society is so brief in cosmic terms that the probability of two civilisations occurring in the same period is infinitesimal, so Hawking does not expect to meet extra-terrestrials now or ever.

To the reviewer, Hawking fails in terms of the very "anthropic principle" he extols. The more the degree of detail in the universe which cosmologists discover, this being benevolent to mankind, the less likely it becomes that all arose from cosmic accident. The task of ISCAST is to integrate Christian belief to the whole of science. This includes the distant past (Biblical creation, whatever its physical form) and the distant future together with the far reaches of space (a marvelous, vast eternal plan for human beings which, as Hawking acknowledges, are the most wonderfully complex entities in the incredibly constructed universe).

I McDowell

Letters

Dear Dr Clarke

In Bulletin 36, both you and David Young suggest that there is something wrong that some Christians are still creationists rather than evolutionists. However, Christian belief depends on belief in an open universe in which God has acted miraculously. This was certainly the view of James Orr, whom you mention in your editorial. Conversely, belief in a closed universe of cause and effect is fundamentally opposed to Christian belief. Orr recognised this opposition between the Christian view of the world and the "modern" view of the world.

Now, belief in an open universe does not depend on belief in a series of miraculous beginnings, but it does depend on belief in an initial miraculous beginning. Your statement that Orr saw no conflict between evolution and the Christian faith is certainly accurate if "evolution" does not imply a closed universe. Orr was prepared to say that "within certain limits, [the general hypothesis of evolution] seems to me extremely probable, and supported by a large body of evidence".

However, he believed that the doctrine of creation implied "a beginning in time", i.e. "some point from which the evolution started".

Although, then, belief in an open universe does not depend on a theory of creation which assumes a series of miraculous beginnings, it nevertheless makes such theories possible. Whenever there is evidence of a beginning—whether a beginning of the universe as a whole or a beginning of a new species—it is possible for those who believe in an open universe to suppose that this was a miraculous beginning. By contrast, those who believe in a closed universe must suppose that any apparent beginning has a cause within the universe.

In relation to any theory of creation which denies organic evolution, you suggest, both in your editorial and in your review titled "Is God a Darwinian?", that those who assume any such theory are involved in an inconsistency if they also assume that the stars and planets have developed according to the laws of God. My response to this is that the beginnings of biological species are not analogous to the

beginnings of stars and planets but, rather, to the beginnings of the particles from which these stars and planets formed.

Assuming that God caused the existence of a number of unstable particles equal to the present number of baryons in the universe, I make the further assumption that God caused these particles to decay and move according to the laws of God for these particles, eventually forming stars and planets from the resulting particles. Similarly, assuming that, at various points in the history of the earth, God caused the existence of a population of cells or seeds or eggs of each new species, I make the further assumption that God caused these populations of cells or seeds or eggs to grow and reproduce according to the laws of God for each of these species.

You conclude your editorial by saying that "it is important for us ... to address the fundamental [questions] of God's work in the world and how we see [God's] relationship with [God's] creation". However, I doubt that the fundamental question of whether the universe is open or closed can be addressed directly. Using the term "creationists" to refer to those who believe in an open universe and the term "evolutionists" to refer to those who believe in a closed universe, it seems that creationists see the God of evolutionists as an imaginary God to whom Ockam's razor should be applied and that evolutionists see the God of creationists as "a God-of-the-gaps" or as "God the magician". Perhaps the only way forward is for both creationists and evolutionists to respectfully consider each other's theories. I hope that ISCAST may be a place where this may happen.

Yours sincerely
(Mr) Vivian Bounds

Dear Sir,

Your editorial in ISCAST 36 contained the rhetorical question:

"Why then do many Christians not only consider organic evolution hostile to the Bible

but why has this opinion hardened considerably in the last hundred years?" Among the several reasons you cited for this was a trend in some circles toward "naive realism" and "increasingly literal interpretations of the Bible".

In his book *The Creationists* (p.338), Ronald L Numbers comments on the modern trend to creationist literalism: "For believers in the verbal inerrancy of the Bible, flood geology required no assumptions of days that really meant ages or of temporal gaps that went unmentioned. By showing how the deluge of Noah compressed earth history into no more than ten thousand years, Whitcomb and Morris at one stroke eliminated the need for such 'biblical gymnastics' and deprived evolutionists of the time required for the natural origin of species. David CC Watson succinctly summed up the appeal of such manoeuvres: 'Tens of thousands of Christians have been convinced by Morris and Whitcomb's books because they make sense of the Bible'.

Indicative of the continuing popularity of literalism is the fact that YEC populist and lecturer Ken Ham comes to Australia next month touted as "the world's third most-requested Christian speaker". And this effective communicator is billed as presenting "A Literal Genesis: Key to reclaiming the Culture"; a pitch surely aimed at the reductionist views often associated with militant evolutionism. Ken Ham will be supported on tour by Dr Don Batten PhD, a 'research scientist' who will address the issue of our being 'Monkey's Cousins'. Also touring, country-style singer Buddy Davis will be bringing a creation message geared to children, presumably with an eye to the movement's future.

Doubtless these gatherings will be attended by many well-intentioned folk who will be assured that the Young Earth and Flood Geology model of creation offers the best both in Biblical exegesis and rational science.

Yours Sincerely,
Noel T Bailey.

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

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

Please submit to Jonathan Clarke at the address on the front page. Electronic submissions preferred.