

Issue 49

Summer, 2006

ISCAST

Christians in Science & Technology

www.iscast.org.au

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

**A Non-profit company. ISCAST
Ltd. ABN 11 003 429 338.**

ISCAST BULLETIN



President-elect of ISCAST Professor Emeritus John Pilbrow at COSAC 2005 with friends.

INSIDE THIS ISSUE

Letter to the editor	P3
Review Article: The 5th Miracle— Robert Stenning	P3
Review: Paradigms on Pilgrimage— Ian Hore-Lacy	P5
ISCAST Website—Richard Gijisbers and Patsy Robertson	P6
Review: Life in the Undergrowth—Mick Pope	P7
Tribute to John White—John Pilbrow	P8
Reviews: Climate Change Begins at Home, Plows, Plagues & Petroluem—Mick Pope	P9
Biography—John Pilbrow	P10

Editorial

Welcome to my third “Bull”. The last two have had a theme, but this issue is largely a collection of whatever has been sent in, but there is still some very good material. If ever you have a theme in mind I invite you to share it with me. I also invite you to supply some material! I am very excited to have received my first letter to the editor from Lawrie Lyons on the topic of Intelligent Design. Lawrie also reminded me that the expansion of the acronym ISCAST had fallen off the front page. Sorry for that. And this got me thinking a little.

ISCAST is the Institute for the Study of Christianity in an Age of Science and Technology. We have also been running on the new ISCAST banner the text, Christians in Science and Technology. One is what we are, the other is who we are. ISCAST isn’t an institute in the sense of a collection of people with special funding, all inhabiting the same building, carrying out research in a given field. And yet, dispersed as we are over the entire continent, ISCAST can and does function in such a manner. When we gather at COSAC or annual lectures, when we run “Fire in the Belly” sessions, we are encouraging others to think through and articulate ideas of Christianity and its place in a world dominated by technology.

In the west, technology runs our lives, from telecommunications to the internet. I often marvel at the speed of communications, and yet wonder if it has made us any smarter or wiser. An organisation such as ISCAST can be an institute where a thoughtful view on such matters can be presented. We can be the reasonable voice in matters of the impacts of science and technology in a world that often runs headlong into new ideas and techniques with little reflection beyond that of the “knee jerk”. We can be the middle that strident atheists such as Sam Harris in his book *The End of Faith* tries to exclude.

Whilst there may never be a physical institute, it is my hope that ISCAST may produce high quality Christian reflection for both the specialist and the generalist. I know some of this is already occurring. Some of us are already able to contribute to *Zadok Perspectives*, the quarterly publication of the Zadok Institute which provides a Christian reflection on the wider culture. Some of us have also been able to write pieces for Christian newspapers such as *The Melbourne Anglican* and *Crosslight* (the paper of the Uniting Church in Melbourne). Others still contribute to *Science and Christian Belief*, the journal of Christians in Science in the UK. There may be future opportunities to write for *Science and Theology News* (see back page).

And of course there are the ISCAST publications, this Bulletin and the newly launched Online Journal. These are both excellent opportunities to publish ideas, try

them out, seek criticism and feedback. If ever you have an idea, try sharing it with other ISCASTians. If others think you are onto something, pursue it further. Meet and discuss your ideas, put them in writing. However, always remember an editor’s prerogative!

This exercise of idea, writing and reflection is important for us as Christians in science because for us, it can fulfil the two greatest commandments. As Christians in the sciences and technologies, we are still to love God with our minds. To be able to see our study as worship fulfils the purpose for which we were created. This is not to reduce God to an idea, or as on whit as put it, to “cerebrate Jesus”, but to acknowledge that the pursuit of all knowledge is a discovery of the “mind of God” and a fulfilling of our function as *homo scientia* and worshippers of God.

We also fulfil our duty to *love thy neighbour* in two ways. Firstly, right though informs right action for ourselves and our neighbours. Forming a Christian view of the sciences and technologies we study and practise will keep us and our neighbours from falling into sin. Further, as both Christians and scientists, we will be a voice for the right use of science and technology. In this way, we can love our neighbours by keeping them safe from the negative impacts of our technological marvels. This is increasingly more important in the coming years when biotechnology and environmental concerns will loom ever larger.

To sum up, ISCAST is both an institute as the acronym implies because we are a body of people who can, have and should continue to direct research and publication in matters of science, technology and the Christian faith. However, we are also people, Christians involved in these fields. The aim of this endeavour is centred on love of God—in both our thinking and our manner of living, and love of neighbour, in speaking to the world and to our brothers and sisters in Christ.

My challenge to you is to continue to consider how ISCAST can function in these ways, to meet, discuss, write, reflect and love.

PS. Thanks once again to Helen Joynt for proofreading this edition.

Mick Pope is a professional meteorologist, PhD student in tropical meteorology, and hopes one day to finish his B. Theol degree. As well as the editor of the ISCAST Bulletin, he is the reviews editor of Zadok Perspectives. For more random reflections on issues of science, culture and faith, Mick maintains a web log (blog): <http://natural-philosopher.blogspot.com>

Forming a Christian view of the sciences and technologies we study and practice will keep us and our neighbours from falling into sin.

The Editor
ISCAST Bulletin

Dear Editor,

The issue of "Intelligent Design" as held by Behe, Dembski, Johnson, Strobel and others is an attempt to escape from an evolutionary basis of their world outlook, or, in language they would recognize, escape from a macro-evolutionary outlook.

Unfortunately for this entire group, work done in recent years in the area of genetics has provided abundant and overflowing proof that humans and great apes have a common ancestor. That means that humans all have animal ancestry. The details of the mechanism of the processes involved do not need to be understood completely although these will no doubt become known at some time in the future. Macroevolution is now established as a fact of science. Anti-evolutionary arguments all fall to the ground, no matter whether they are made by "Answers in Genesis" or by Johnson et al.

The evidence for the genetic conclusions has been summarized by research biologist Graeme Finlay in the UK publication "Science and Christian Belief" vol. 15 (1), pp. 17-40 (April 2003), which article was reprinted in "Evangelical Digest" No. 21 (2004) copies of which are still available from Iscast Qld at PO Box 1462, Kenmore Qld, 4069 for a price of \$4 each (see *back page for an order form, Ed*).

Finlay reviewed the work of one hundred research groups spread over a number of countries. All came to the same conclusion, that man has an animal ancestry which is the very same as that possessed by the great apes.

Groups like "Intelligent Design" and "Answers in Genesis" are now logically out of business and should close down.

According to the Bible, the agent of creation is Jesus our Lord and we note that creation is not merely of physical entities but also of the laws that govern their behaviour, so that Kepler was right when he said that scientists, when they find a conclusion from their work, are thinking God's thoughts after him. God indeed is a great designer and the universe is full of intelligent design, although the order of the universe points to a designer with a mind far greater than that of any man.

Lawrie Lyons FAA

The Fifth Miracle: The Search for the Origin of Life by Paul Davies, Penguin Books, 1998. Review by Robert Stenning.

I was asked to review this book for the Great Books Group at UNSW and I am very glad that they asked me. I was a bit diffident about speaking on a topic which was outside my main area of expertise and worried also that a physicist was writing about the origin of life. The subject is currently one of considerable controversy and so, in such a case, all opinions are open for consideration.

I found the book more readable than I expected as Davies writes with an easy style which, mostly, will enable you to proceed through the book without being too perplexed by complex theories. I was disturbed to read a comment on Thomas Gold's book *The Deep Hot Biosphere* (Springer, 1998) where the commentator reports that his friends say, "It's a great book, but when he comes to something I know about, he's completely off base"¹. I would not say the same thing about Davies' book – he includes extensive endnotes so you can track down the original authors of the many ideas presented.

I was arrested by two statements about the beginning of the universe and the big bang. Christians are often used to thinking that, at the beginning, God created matter and energy *ex nihilo*, out of nothing, and this then developed into galaxies, solar systems and eventually life appeared. Christians also sometimes think that this agrees with Genesis 1. However Davies points out that it is not necessary for positive energy and mass to suddenly be created since, with the creation of galaxies, negative gravitational energy appears and the sum of all the mass/energy and the negative gravitational potential energy may be zero.

I ran this past my astrophysicist colleagues, expecting a lot of nodding heads, but this was not the result. They were rather sceptical. In particular they pointed out that we don't know that this sum is zero or something else. This may indicate that Davies presents some things as facts where an expert may be not so sure (Davies method of presentation admittedly makes easier reading!).

The second arresting point has to do with the Second Law of Thermodynamics, another happy hunting ground for Christians to get into trouble. The Second Law tells us that, in every reaction that takes place, the total available energy in the universe decreases or there is an increase of randomness and a decrease in order. In other words the universe is running down towards the ultimate heat death at its end. The implication often made then is that the universe must have been wound up at the beginning and this activity is ascribed to God. Davies points out that this also is not necessarily so. He

Review article: The fifth miracle

tells us to imagine a completely uniform gas. It is hard to imagine a system with less order. If a fluctuation occurs in the gas, then gravity will act to cause some particles to clump together – in this way galaxies might be formed early in the history of our universe. Once again order, in the shape of galaxies, arises spontaneously out of disorder at the expense of the gravitational field. This process was re-affirmed by Martin Rees in a recent issue of *New Scientist*.

But let's return to the origin of life. It is important to define what is life and what isn't. This is not as simple as it sounds but Davies selects replication and metabolism as the two basic necessities. The rest of the book divides into two sections - the bottom-up approach and the top-down.

In the bottom-up consideration Davies looks at various ways that life might be formed from its constituent chemical parts. Modern genetics helps the search for LUCA, the "last universal common ancestor". It would be churlish to criticise Davies for leaving something out in this complex discussion but a recent article suggests that genes might not only be passed down from one generation to another but may also be transferred horizontally in more simple organisms³. The business of creating life from life is very complicated. Not only are the basic constituents required to be brought together, but also a host of enzymes are needed to drive the reactions in the right direction.

The chance of getting all these elements together is estimated as 1 in $10^{40,000}$, an impossibly large number and unlikely to be realised in the time available. This calculation is of course too simple and various cooperative and feedback mechanisms may come into play. Nevertheless it is interesting to see how complicated the replication of DNA really is – involving messenger-RNA, ribosomes (the factories where proteins are manufactured), transfer-RNA and so on. One of the big questions is why a particular code in the DNA corresponds to the manufacture of a particular protein.

Davies often uses helpful analogies to explain complex ideas. For example, in the creation of life we need hardware (constituent chemicals) and software (codes for the various components). He compares a kite, with hardware control, to a radio-controlled plane with software control. He emphasises that the codes used are not periodic or algorithmic, but essentially random, so the laws of nature are not able to generate them.

The "RNA world" is often seen as the site where life may have first appeared. RNA has the special characteristic that it can sometimes act as both hardware and software. It is also important to understand the "error catastrophe". There is a trade-off between long molecu-

lar chains which have a greater chance of error during replication and shorter chains which cannot carry enough information to ensure replication takes place.

Turning briefly to the top-down approach, Davies looks for particular locations where life may have first formed. He underlines the importance of meteor impacts on the earth which would have been much more frequent 4 billion years ago. In fact life may have started several times only to be wiped out by a meteor impact such as that which destroyed the dinosaurs 80 million years ago.

He explores many strange life forms which exist in extreme conditions, such as chemotrophs which live off chemical energy and require no sunlight. Sulphur and iron are important constituents of these bacteria which may have lived up to half a kilometre below the earth's surface. We also have the methanogens which manufacture biomass from hydrogen and CO₂. Scientists are discovering new organisms like this all the time.

It is important to define what is life and what isn't.

Davies then moves to Mars and suggest that maybe it is an even better location than earth for these organisms to form underground, since, with its weaker gravity, Mars would have been hit by fewer meteorites. To emphasise the currency of this idea, a new book has just appeared – *Water and the Search for Life on Mars* by D. Harland (Springer Praxis Books, 2005).

Maybe the solar system is full of bacteria spores, battling against destruction by UV radiation. It is possible that life formed on Mars could have been transmitted to earth following a meteor impact and/or be found within meteors, or vice versa. This is the panspermia idea if Martian life is similar to that on earth. Quoting from the blurb of Harland's book, "If Martian life is radically different, then in the light of the discovery of planetary systems around other stars, this would, as remarked by Philip Morrison of MIT, 'transform life from the status of a miracle to that of a statistic'".

After all this, Davies is still unsure about the how and where of the origin of life. He asks 'Do we live in a bio-friendly universe?'. Do the laws of physics and chemistry inevitably lead to life? Though Davies firmly avoids any belief in the supernatural he suggests that biological determinism may be "a miracle in nature's clothing". Maybe emergent laws of complexity are involved. As he asks whether the evolution of humanoids with mind and consciousness is extremely unlikely, and so "we are alone", the book abruptly ends.

There are many challenging ideas here. If the origin of life were discovered, then it might next be possible to create life in the test tube, even though it might only be a humble bacterium to start with. What then of the

Review: Paradigms on pilgrimage

Christian idea of the "sanctity of life"?

1. A. McBirney, "On books that popularise science", EOS, 86, 318, 30 August 2005.
2. M. Rees, "The Big Bang", New Scientist, p32, 17 September 2005.
3. G. Hamilton, "Mother Superior", New Scientist, p26-29, 3 September 2005.

Paradigms on Pilgrimage—creationism, palaeontology and Biblical interpretation;

by Stephen Godfrey & Christopher Smith, Clements Publishing, Toronto, 2005. 207 pp including endnotes.
Review by *Ian Hore-Lacy*

There are many books which usefully show how science and hermeneutics are complementary in learning about God and his world, most come from those who have worked out why and how this is so and present their conclusions. This book is fascinating because it follows the process of slowly-developing understanding in two people, both well-indoctrinated young-Earth creationists - one a palaeontologist and one a biblical scholar and pastor. They eventually achieve a much fuller and more coherent understanding of what it means to believe in God as creator.

Both authors come from Christian communities where a living faith in Christ is inexorably bound up with a literalist view of Genesis 1, so that admitting the veracity of any scientific insight on origins is almost apostasy. But little by little the impossibility of giving credence to elements of the creationist position loosened that nexus. Purpose in creation was distinguished from process.

For Dr Godfrey, the fossil evidence became glaringly irreconcilable with the pontifications of flood-catastrophists, starting with fossil footprints and moving to how suites of organisms occurred together, evidently at different time to other suites. Successive paradigm shifts are well described. Liberation comes as he understands that while the Bible teaches that "God sends the rains", this has never been an impediment to scientific understanding of the hydrological cycle by Christians, and there appears to be no bogey of "atheistic meteorology" promulgated in the US churches. Why should evolution be any more atheistic than meteorology? - or inimical to perceiving God as sovereign creator?

For Dr Smith, his work in literary studies and biblical studies led him to new understanding of the early part of Genesis and its literary conventions. He also explains how comparison of the creation accounts of Genesis 1 and 2 in Hebrew make it clear that promoting either as a chronological or scientific account does violence to the meaning. His realisation that the cosmology of Genesis is observational or phenomenological rather than objec-

tive underlines all this.

Following the personal accounts, Dr Smith deals with some questions raised in them. First, if the Bible is written in an observational mode which does not hold water scientifically, how can it be reliable in forming our understanding of God? And what are the implications of perceiving science and scripture as complementary, especially in relation to biological evolution? These chapters are useful in the book, but better expositions are to be found elsewhere.

A conclusion "Genesis cosmology and its implications" in 15 pages goes through the Genesis 1 creation account drawing upon many relevant passages from the Bible and insights from elsewhere. The chapter finishes by drawing out implications for scientists and for students.

What are the implications of perceiving science and scripture as complementary, especially in relation to biological evolution?

The book gently leads the reader from one side of the creationism dispute to the other at a level easily comprehensible by the kind of students likely to be hung up on such issues, and does so with a valuable balance of science and hermeneutics. Personally I would have liked to see a

little more pushing of epistemology bridging the gap. But it will be a good book to have on campuses and in churches with intelligent readers.

Breaking News

As you know, ISCAST runs the Conference on Science and Christianity (COSAC) every two years. The Victorian branch of ISCAST will be hosting COSAC in 2007. Our very special guest speaker will be none other than Alister McGrath. Alister McGrath has degrees in chemistry, molecular biophysics and theology. He is an ordained priest in the Church of England.

From October 2006, he will take up a Senior Research Fellowship at Harris Manchester College, Oxford, to begin directing a major new research project on natural theology, funded by the John Templeton Foundation. He was elected a Fellow of the Royal Society of Arts in 2005.

He has written three volumes of *A Scientific Theology*. It took twenty years to work out how to do this, and involved a detailed engagement with both historical and systematic theology, and the history and philosophy of science.

The theme of COSAC 2007 is yet to be finalised.

ISCAST Website

One measure of how the website is being used is to trace back to the other sites that are linking in to it. Out of interest, I checked out the links to ISCAST.org.au that were used last January.

There were 45 of these. Of these some were connected with our sister organisations—Christians in Science (www.cis.org.au), the Canadian Scientific and Christian Affiliation (www.cisca.ca), the Faraday Institute for Science and Religion (www.st-edmunds.cam.ac.uk/faraday) and the like.

Then there are the portals, those hubs that direct people to other sites. The most popular portal linking to our site is a Dutch one: <http://theologie.pagina.nl>. Clicking “geloof, wetenschap, techniek” will get you to us.

There are a number of sites belonging to Christian organisations that direct people to ISCAST. The Christian lawyers (www.christianlawyers.asn.au) and the church in Perth (www.churchinperth.com) are two of these as are the Christian student organisations such as the Evangelical Union of North Terrace in South Australia (www.euadelaide.net) and the Fellowship of Christian University Students (FOCUS) in Tasmania (www.focusutas.org). Visitors have also come to us from Ken Smith’s page on the University of Queensland chaplaincy site.

Theological colleges also have links to the ISCAST site. The most notable of these is the Old Testament Gateway by Tabor College (www.otgateway.com/index.htm). Its link is directly to Prof. JA Thompson’s Genesis paper and partially explains why that paper is always the most downloaded one on our site. This site is not unique in providing links to specific papers rather than to the site’s homepage.

People in chat rooms often refer to the ISCAST site. A number of them are general discussion sites (eg forums.appletalk.com.au) but some are more specific like Deviant art forum (forum.deviantart.com/) and others.

The issue of Intelligent Design has meant that many people are asking questions about science and faith and many are using the ISCAST website as a part of their discussions.

The most interesting sites are the “blogs”. These are produced as a forum for individuals to air their thoughts

and draw others into their discussions. Many of these use their links to the ISCAST site to refer people to our resources.

Thus jesus.com.au both refers visitors to us as a general resource on science and faith and uses our material specifically (including referring people to a paper that is no longer there!). Paul Whiting (<http://paulwhiting.blogspot.com/>) referred people to us, and suggested that the acronym IFTSOCIAAOSAT might be a bit long and was therefore grateful that we had stuck with ISCAST.

Just in Case (andjustincase.blogspot.com/) referred people to us and at least one person has followed up on the invitation (apparently having been helped).

So, what are the lessons to be learned from this? In general terms, there is clear proof here that there is a role for ISCAST, not only as a support for each other nor just as a handmaiden for the church but as a resource for society in general.

Issues relating to science, technology and faith will continue to emerge and people are looking to us to provide input to those issues. I believe we need to take this role seriously (“Of those to whom much has been given....!”). Insofar as we do contribute intelligently and wisely, we have a ready audience seeking to draw on our contributions. We are not just a “Christian fellowship” supporting one another in our faith and in our science. People are looking to us to help them think through issues.

Richard Gijisbers

Do you have any comments/ suggestions regarding the ISCAST website?

The ISCAST website has been functioning in its present format for a number of years. It has been remarkably successful as a means of access to ISCAST with nearly 1000 unique visits per month from all over the world.

Papers on the site have been downloaded steadily with John Thompson’s Genesis paper being a standout but also papers on ethics, Intelligent Design, creation and evolution being visited frequently. It has proven to be remarkably successful as a means of access to your papers and debates.

ISCAST Website

The original focus for the site was to make the papers and events associated with ISCAST more accessible. Several additions have been made to the site as new features were required but these have been ad hoc. The Communications Working Group has decided that it is time to look at the possibility of a complete redesign of the site.

We plan to look at all aspects of the site including:

- The design of the homepage.
- Making certain features such as "Contact Us" and information as to how to support ISCAST financially more accessible.
- The Online Journal, an online publication for refereed articles and opinion and debate papers.
- The online thinkings pages.
- Including information about the Fellows.
- Making provision for highlighting events such as COSAC better.

We are inviting you to send us your ideas and suggestions for improving the website. We will compile these ideas into a single proposal with a number of options, cost these options and prepare a recommendation for the ISCAST Board.

Please send your comments, suggestions etc to Richard at r.gijsbers@stockdaleacs.com.au

Patsy Robertson
Convenor of the ISCAST Communications Working Group

Science and Christian Belief

Is an academic journal concerned with the interactions of science and religion, with particular reference to Christianity (www.scienceandchristianbelief.org). It is available at a special price through ISCAST as follows:

	ISCAST members	Non-ISCAST members
Printed version	\$45	\$55
Online version	\$45	\$55
Printed & online version	\$51	\$61

These prices apply to 2006.

If you wish to subscribe, send a note to ISCAST, c/- Stockdale ACS, 58 Koonawarra St, CLAYTON NORTH, VIC 3168 with a cheque for the appropriate amount. Payment by EFT can be arranged by emailing vic@iscast.org.au.

Review: Life in the Undergrowth

David Attenborough
ISBN 0563 52208 9
BBC Books
288 pages

It's a bit hard for me to be unbiased about David Attenborough's new television series and accompanying book *Life in the Undergrowth*. Like many people in their mid 30s, I grew up watching the landmark series *Life on Earth*, *Living Planet* and *The Trials of Life*. These series fuelled in me a deep love of nature before I knew the creator. I think that such series do perform the proclamation that Paul speaks of in chapter 1 of his letter to the Romans.

The series *Life in the Undergrowth* fills in a gap in the natural world left by Attenborough's other series *The Life of Mammals*, *The Life of Birds* and *The Private Life of Plants*. Like *Plants*, this series benefits from hi tech photography. Time-lapse, close ups, cameras on the end of tiny probes, slow motion and infrared bring us close to creatures that we ignore, unless we are spraying them, squashing or swatting them.

There are too many highlights to name them all. *Invasion of the land* deals with the difficulties of sex out of water, and the slug scene will leave you gaping. Moreover, there is something rather chilling about a centipede that hunts bats.

Episode 2 deals with insect flight. I grew up admiring the airborne agility of dragonflies, an admiration that Attenborough shares. Episode 3 deals sensitively with the arachnophobe in all of us, covering not only spiders but also the silk of glow worms and green tree ants using their larvae like glue sticks. The time-lapse of trapdoor spiders has to be seen to be believed.

Episode 4 illustrates that the short lives of insects means that evolution has had many generations to create some amazing relationships between insects and plants, and between insects and other insects. Wasps are the "bad boys" of the insect world, injecting their larvae into trees, other insects and spiders, sometimes sedated, other times not. *Life in the undergrowth* is definitely amoral, something that Attenborough fails to deal with. At best he appears to be an agnostic (see the interview by Michael Palin, *Life on Air*) and uses such behaviour as an argument from evil. Also missing is a consideration of our warfare on insects and the impact of chemicals on the food chain. Notwithstanding these quibbles, it will fast become a favourite with all but the most squeamish. *Ed.*

A Tribute to John White

Professor John White is stepping down as President of ISCAST after almost 14 years in the position, having succeeded our Founder, Professor Lawrie Lyons back in 1992.

I first met John in Oxford late in 1961 or early in 1962 at an RSCF meeting held in his rooms at Lincoln College, where he was Junior Research Fellow in Chemistry. He had been in Oxford for just over two years and was already making his mark.

In addition to his membership of the RSCF, John was a foundation member of the Christian Graduate Society that was founded in 1963, a group that encouraged scholarly discussions in all disciplines in the context of Christian Faith.

In 1963 John was appointed Fellow and Tutor in Chemistry at St John's College, a position he held until taking up the Chair of Physical and Theoretical Chemistry at the ANU in 1985.

John White's research in Oxford took him into the application of neutrons to problems in Chemistry. In due course he spent the period 1977-80 as Director of the Institute Laue-Langevin in Grenoble, a joint British-German-French Laboratory. For this he was subsequently awarded a CMG by the Queen.

Throughout his time in Oxford John remained a key member of the Oxford RSCF group.

Upon returning to Australia in 1985, John quickly established himself as a significant and eminent member of the scientific community. Fellowships of the Australian Academy of Science and of the Royal Society of London followed.

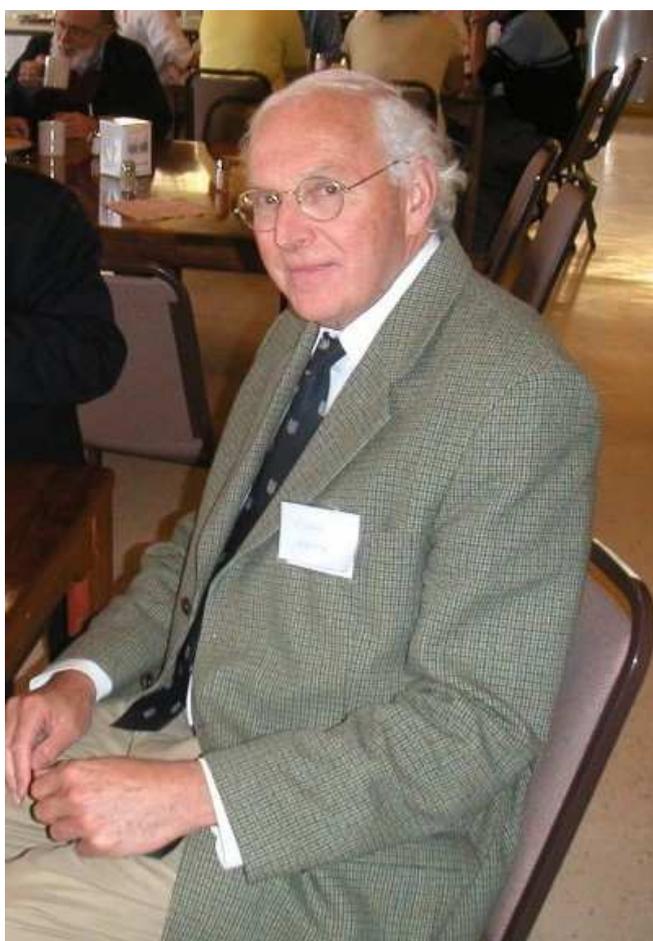
John has exercised a prominent role as the Academy spokesperson on Human Cloning and Stem Cell research and has kept those of us in ISCAST well-informed regarding the issues.

John White abounds in energy, managing to sustain a major research program at the ANU supplemented by experiments in major laboratories around the world. On top of this he has steered ISCAST through a period covering all of the COSAC conferences since 1997. John is well-connected and has been able to secure a number of major speakers for us over the years.

John has agreed to stay on the ISCAST Board when he steps down as Chairman and President following the next Board Meeting. It is appropriate to thank John for his commitment to ISCAST throughout its entire history but particularly during his time as President and as Chair of the Board. We shall continue to value his wisdom as we chart our way into the future.

John Pilbrow

As at 8 March 06, Chair-elect and President-elect, ISCAST Ltd.



More Breaking News

Did you know that the ISCAST website now has a link to the new online journal? Yes, ISCAST is entering into the 21st century and the world of Internet publishing.

The ISCAST Online Journal is an avenue for local scholars to produce world class research on areas of science and the Christian faith, for it to be peer reviewed and be available for the science-faith community.

It is important for the good of the wider church that ISCAST continue to be a rational and faithful voice in the wilderness in matters of God's two books. If you have an issue that you want to grapple with in a scholarly manner,

give thought to doing the hard work and submitting something to the journal. Likewise, pass on the news to friends who want access to a good resource.

Also, in terms of reaching the wider world, David Young from the Department of Zoology at the University of Melbourne has recently written an article on Intelligent Design for the Griffith Review 11, pages 135 to 140. This issue of the Griffith Review is devoted to education and is entitled "Getting Smart"

Books noted: Climate change issues

Climate change begins at home: the two-way street of global warming, Dave Reay, MacMillan, Hampshire, 2005, 203.

It is easy to lament over governments that won't sign Kyoto (despite its limitation), or berate industry for profligacy in energy usage. Yet, there are things that even the home owner can do to reduce the future environmental burden on our children. Reay examines this with imagination and humour. Some of the fixes are simple, others not so. Governments need to continue to fund public transport infrastructure (p32), but we need to use it. Saving on a 30km round trip in the car can cut 7kg of greenhouse emissions (p33). Cutting down on air travel is also a big saver, and as a scientist it was a little painful to have it suggested that some of the conferences I could attend could be virtual ones (p53).

Home tips are also simple. Switch it off if its not in use, especially appliances with those standby lights (p74). Changing your clothes and not your thermostat is another suggestion for those with air conditioning and central heating (p60), with a 1°C change meaning a third of a tonne less greenhouse gases per year! Moreover, if the fridge is looking a little old and tired, fixing the seals and cleaning the dust off the coils can save another 200kg per year. Energy efficient bulbs may cost more, but swapping 12 ordinary bulbs for them can cut almost a tonne of greenhouse gas per year.

Reay is not backward about the future impacts of climate change if you needed more incentive than saving some dollars or a salved conscience (or being a good steward of God's creation!) He considers that some of this at least can be avoided and the magic figure of 60% emission cuts needed to avoid real damage is achievable, if individuals act together (p175). Lets hope so.

Plows, Plagues and Petroleum, William F Ruddiman, Princeton University Press, 2005, 202pp.

It is by now an established fact that humanity has modified the atmosphere and climate since the beginning of the industrial revolution. However, civilisation has existed for a lot longer than that, fuelled as it was by the beginnings of agriculture. The thesis of William Ruddiman is that we've been changing the climate since this time. His new book expands on the ideas currently in the research literature, answering his critics and building a strong case for human induced (anthropogenic) climate change beginning 8000 years ago.

His thesis is simple and compelling – the changes in greenhouse gas concentrations observed in the climatic record cannot be accounted for by natural causes. At the end of an ice age (and there have been many throughout Earth's history, chapter 4), greenhouse gases increase, reaching a maximum at or near the time of minimum ice coverage. After that, their concen-

tration usually slowly decreases as the climate moves slowly towards the next ice age. Yet, the past 10000 years have been kind to humanity. During this period, agriculture, civilisation and all of the worlds major religions appeared (chapter 7).

Now here is the puzzle. During this period, carbon dioxide has increased (from 8000 years ago) and so has methane (5000 years ago). Like a master detective, Ruddiman builds his case that humans are responsible. It is so simple that no doubt many scientists wished they had thought of it. With the advent of rice agriculture (chapter 8), people were making more tropical wetlands to make more methane. Further, domesticated sheep and cattle "emit" methane as does human waste – and agriculture means more food and hence more humans. Carbon dioxide increases are simply understood (chapter 9), they are the result of land clearing for agriculture. Yet, there is a further complication (chapter 11). Ruddiman's critics claimed that he underestimated the amount of carbon dioxide required. As is often the case, science proceeds in this way – no thesis is accepted first time. The answer is that as humans cleared the land, the warming prevented ice sheets from forming (chapter 10), allowing carbon dioxide to increase (although the details of this are still debated).

What does Ruddiman prove? Firstly, it is very easy for civilisation to impact upon the environment. Now that the world teems with humanity, it is no surprise that it is struggling to cope with what we have done to it. Secondly, it places what we have done in context. The observed warming in the past 200 years is only half of that observed over 8000 years. Where is the rest? Unfortunately, it is "in the pipeline" as aerosols and the thermal inertia of the oceans. The tortoise is pre-industrial warming, where the ocean-atmosphere system had a long time to adjust. The hare is the industrial revolution greenhouse emissions, especially since 1970. The Earth is still catching up.

There are a couple of annoying features of this book. It is fine to be politically pragmatic, but he lets the US senate off the hook about Kyoto. Likewise, I think it spurious to make climate change secondary to loss of potable water or topsoil, as if these issues were separable. They are all part of the same problem. In his desire to appear to be treading the middle ground between environmental and industrial extremists, he undercuts his own arguments. He is also quick to dismiss the impact of climate on human evolution, a potentially rich area for a theory of divine influence of human development given biblical emphasis on God's control of the weather.

Aside from these issues, I recommend this book. It strengthens our concerns and should further motivate us to act to help stabilise not 200 years but 8000 years of inadvertent and culpably knowing climate changes.

Ed.

Biography—because scientists are people too

Name:

John Pilbrow

When & how I became a Christian:

I was brought up to attend church and Sunday school but from age about 16 until my third year as an undergraduate, I only attended church spasmodically. I was converted through a student mission at the University of Canterbury, joined the Evangelical Union (as it was then called) and returned to my local Anglican parish which had a significant teaching ministry.

Occupation/science interests:

I graduated with both BSc (Hons) and MSc with 1st Class Honours in Physics at the University of Canterbury before winning a scholarship that took me to Oxford in 1961 where I completed my DPhil in Physics at the end of 1964. I joined the staff at Monash as Lecturer in Physics in 1965, rising through the ranks, finally being appointed to a Personal Chair in Physics, from which I retired at the end of 2000. In 1978 I was awarded a DSc from Monash University.

My research has been mainly in applications of electron paramagnetic resonance, a branch of magnetic resonance, to problems in condensed matter physics, chemistry and biochemistry. In retirement my research continues with a number of collaborations relating to paramagnetic ions in proteins and metal clusters, all of which provide a significant challenge for spectral interpretation. In 1998 I was awarded the Bruker Prize for EPR Spectroscopy, an annual International Award made in the UK. I served as President of the Australian Institute of Physics 1999-2000 and President of the International EPR (ESR) Society 1999-2002. I am author or co-author of approximately 200 scientific papers and a single author book *Transition Ion Electron Paramagnetic Resonance* published by Oxford University Press in 1990.

Science/faith interests:

Since my undergraduate days in NZ I have been challenged by the issues raised in the science-faith area. The first major scientist and Christian I heard speak was Martin Rudwick, the Palaeontologist from Cambridge, who while on a sabbatical in NZ gave a lecture to the local Graduates Fellowship. I was not only impressed by his talk, but reassured that one could be both a practising scientist at the forefront of one's field and also a Christian. I read books by Bernard Ramm and Charles Coulson in those days which reinforced my growing understanding of the unity of knowledge. I also

came to see that we Christians ought to welcome the truth whenever and wherever we find it.

When I went to Oxford at the end of 1961 I was introduced to the RSCF which was run by John White and where meetings took place in his rooms at Lincoln College. It is noteworthy that when I started my research in Oxford there were five of us in the lab, three of us Christians, and one of the others became a Christian a few years later and remained so until he died from cancer 10 years ago. When he left, the new student who took his place was a new Christian, later a College Fellow in Oxford, and a leading member of one of the major Anglican Churches in Oxford. So I was in an environment that gave further opportunity for reflection on the relationships between faith and science.

On coming to Melbourne in 1965 I was quickly introduced to the local RSCF group and remained with it until its demise at the end of the 1970's. When given the opportunity to become a Fellow of ISCAST in the early '90's, I was glad to be involved again formally with a great many like-minded scientists.

How faith affects how you behave at work:

My understanding is that the workplace is an important venue in which the implications of faith have to be lived out. I realised a long time ago that we are called to be servants. So I saw myself as serving colleagues, undergraduates and PhD students.

This extended to professional involvements - helping to run an international conference and being Secretary of the Australian Institute of Physics (AIP) 1975-76. A colleague at the time questioned why I would devote time to the AIP when I could be doing more research. I don't think he understood my reply about serving one's colleagues in

this way.

Of course it goes without saying that one is called to live with integrity at all levels in the workplace, as in all aspects of life. This applied when as Head of my Department I was faced with managing staffing reductions.

I remember two different colleagues coming to see me and saying something like this "I don't like the fact that staff numbers have to be reduced but I can trust you in this process because you are a Christian".

How faith affects how you think about your science profession:

I have always sought to find coherence between my faith position and my scientific understanding of the way things are. This is not always easy and there remain

Long ago I realised that the bible is not a science textbook and that one should not look for modern scientific concepts there - something that is at once liberating.

Biography – because scientists are people too!

many 'untidy edges of my knowledge'. Long ago I realised that the bible is not a science textbook and that one should not look for modern scientific concepts there - something that is at once liberating. Rather the bible is about our relationship to God and to each other and, for those of us who are Christians, it means knowing and following a person, Jesus Christ.

How ISCAST helps you:

I used to say that the RSCF helped me to keep my professional sanity. The fact that one could discuss some of the 'curly' questions with other like-minded people was very reassuring. The same is true of ISCAST. We are there to support each other, to help eliminate from our thinking woolly arguments, and to be better able to worship the Lord of Creation when we gather with others Sunday by Sunday.

The role ISCAST has played in bringing to Australia notable scholars in the faith-science area is significant and has been very encouraging to people like me. I think particularly of the lectures given at Monash over the years by John Polkinghorne, most of which I had the privilege of chairing, that have challenged the naive view prevalent in academia that 'religion is out-of-date'.

If you want your name and face here, please email me the answers to these questions and a photo. Ed.

The following is taken from the Monash University website. It is a reminder that not only are ISCAST fellows scientists who are interested in relating their Christian faith to their science, but that they are also recognised scientists in their own right. Congratulations John on behalf of all of the Bulletin readers.

Emeritus Professor John Pilbrow, considered one of the fathers of modern electron paramagnetic resonance (EPR), was last week awarded one of the highest honours in his field -- a Fellowship of the International EPR Society (IES).

Professor Pilbrow, who joins ranks that include Nobel Prize winner Aleksandr Prokhorov from Russia, said he was humbled by the experience.

"It is a joy to be in the company of some extremely distinguished people including one Nobel laureate," said Professor Pilbrow, the former secretary and president of the IES. "It's not something one seeks or expects, and it's a delight when these things happen."

Presenting the fellowship, current IES President Professor Wolfgang Lubitz said Professor Pilbrow was an inspiring teacher and great researcher and colleague. Professor Lubitz is Director of the Max Planck Institute

for Bio-inorganic Chemistry, Mulheim, Germany

"I would like to thank John personally for his engagement in the field," Dr Lubitz said. "He is one of the fathers of modern EPR in Australia and worldwide."

The fellowship is awarded in recognition of outstanding contribution to EPR spectroscopy -- a powerful technique used to identify unpaired electrons in atoms, such as those found in free radicals or transition metal ions including iron and copper.

The IES citation described Professor Pilbrow as "a pioneer in the area ... (who) has contributed immensely to our understanding of the subject and its application to a myriad of areas in physics, chemistry and material science".

Professor Pilbrow has received many academic awards and fellowships, published more than 200 papers and authored a classic book on transition metal ions.

Accepting the award, he acknowledged the encouragement he got from Monash when he started in the field more than 40 years ago.

"There was a buzz and an excitement and a sense that (we) were doing something that was really exciting and worth doing. And that underpinned my career."

Professor Pilbrow said he had decided "in about 30 seconds" to focus his studies on "what everyone else was not doing" -- EPR spectroscopy -- and it had since occupied his entire working life.



Emeritus Professor John Pilbrow receiving the award from Professor Wolfgang Lubitz.

ISCAST

Christians in Science & Technology

www.iscast.org.au

Chairman:

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

Secretary:

Dr Robert Stening,
5 Savoy Ave, Killara NSW 2071
Ph h (02) 9498 2710 b (02) 9385 4584
Email: r.stening@unsw.edu.au

NSW Contact:

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

Queensland contacts:

Prof. Ross McKenzie,
Dept. Physics, University of Queensland
Email: mckenzie@physics.uq.edu.au

Victoria/SATAS contact:

Richard and Glenys Gijbers, 58
Koonawarra Street, Clayton VIC 3168,
Tel.: (03) 9562 6122.
Email: vic@iscast.org.au

Bulletin Editor:

Mick Pope
Email: bulletin@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.

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

ADVERTISEMENTS



Evangelical Digest

To subscribe, please complete the following form and return to the address at the bottom of the page.

Tick as appropriate:

- Please post me Evangelical Digest.
 I enclose a cheque for \$12 for three issues.
 Please charge \$12 to my Bank Visa Master Card

Name (printed)

Postal address

Email address

Name on card (printed).....

Number of card

Expiry date of card/

Signature.....

Send this form to:

ISCAST Qld, PO Box 1462, KENMORE QLD 4069

The deadline for submissions for the next issue of the Bulletin is May 1st.

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 Mick Pope at bulletin@iscast.org.au