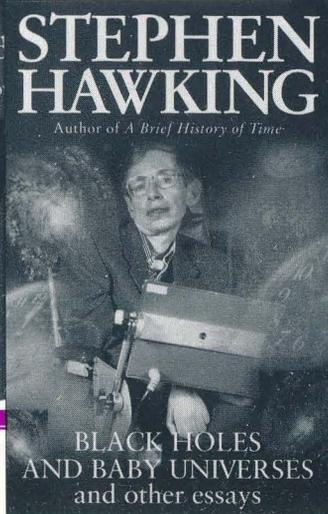
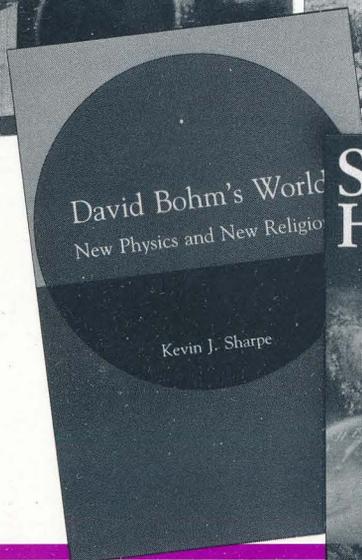
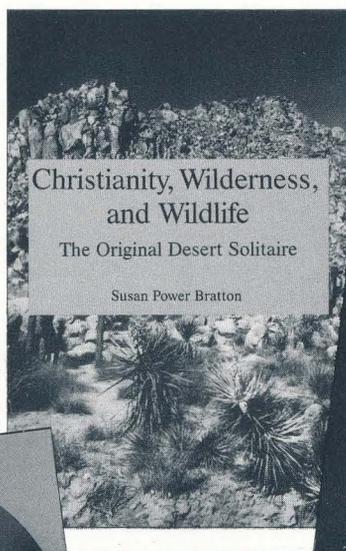
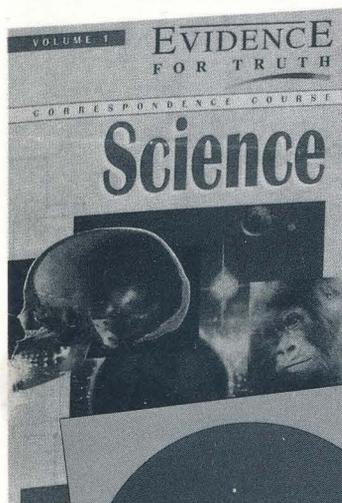


# FAITH & THOUGHT

• BULLETIN •



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**EDITORIAL**

The current issue contains two papers reproduced from weekly journals: it is hoped that these may be of interest to readers who may not otherwise see them. Further to the article on ethical questions, the Editor would like to draw attention to papers in a recent issue of *Christian Scholar's Review* (Volume 23, number 3, March 1994, published by Hope College, Holland, Michigan, USA). The theme of this issue is:— Christianity and Bioethics, and includes symposium papers, and articles. More information is available from the Editor of this Bulletin.

## NEW MEMBERS OF THE VICTORIA INSTITUTE

The Rev'd Dr. C. J. H. Wright, MA, Ph.D. . . . .	Ware, Herts.
Professor Peter F. Morgan . . . . .	Toronto, Canada.
Miss Rachel N. Clark . . . . .	Worcester Park, Surrey.
David G. Cantrell . . . . .	Nottingham.
Dr. Julian J. Orton, MB, Ch.B, MRCP, DRCOG. . . . .	Surbiton, Surrey.
Dr. Colin W. Mitchell . . . . .	Bracknell, Berks.
The Rev'd David A. R. Butler . . . . .	Birmingham.
The Librarian, Wycliffe Hall . . . . .	Oxford.
Ms Sally A. Shaw . . . . .	Hertford, Herts.
Dr. Christopher M. K. Watts, BSc, Ph.D, CPA. . . . .	Ilford, Essex.
Professor J. W. Montgomery . . . . .	London.
Ian J. Thompson . . . . .	Indiana, USA.

## ANNUAL GENERAL MEETING 1994

The Annual General Meeting of the Victoria Institute took place on May 18th, 1994 at the London Institute, St Peter's Church, Vere Street, London. The Chairman, Terence Mitchell presided, and after receiving apologies, the minutes of the 1993 AGM were accepted. (Published in Bulletin 14, October 1993). There were no matters arising.

Elections:- The President, Vice-Presidents and Honorary Treasurer were nominated for a further term of office, as also were Mr Terence Mitchell and Dr. A. B. Robins who were eligible for re-election to Council. Mr David S. Williams has had to resign from Council, and no other names had been nominated to fill the vacancy. Such nominations would be welcomed by those presently on Council.

Auditors:- The firm of Benson Catt and Company were elected as Auditors for the ensuing year.

### Honorary Treasurer's Report 1994 AGM

At the 1993 Annual General Meeting and in a subsequent communication from the Chairman of Council members were urged to make renewed efforts to recruit new members in order to take advantage of economies of scale, particularly in view of the significant drop in membership during 1992 which would be reflected in the 1993 accounts. The Accounts before us today confirm that membership has not yet recovered, although Council has taken steps to remedy this and will continue to work towards your society exercising a more influential role.

The Accounts before us today and upon which the Auditor's Report is appended relate to the calendar year 1993. These accounts show the General Fund having dropped back by £2,031 while the Appeal Fund rose by £224.

Comparison with the 1992 figures reveals:

1. Membership subscriptions down by £448 or 14%,
2. Donations down by £423 or 31%,
3. No legacy monies were received during the year.
4. Total income was £1,423 less than in 1992 a drop of 18%.

On the expenditure side;

5. Smaller membership has resulted in only marginal savings in the cost of printing and distribution and this highlights the economies of scale which would result from increased membership. By comparison with 1992, these expenses dropped by only £407.

The two areas of significant increase in costs are;

6. Public relations & Advertising; due to the cost of issuing an updated brochure.

Administration; an ameliorated increase, the full effect of which will be to take the annual charge up to a figure of £2,350.00.

Subscription income and endowment income, even with members' generous support by way of donations, is inadequate to meet today's costs of operating. Council considers too frequent and too large subscription increases will be self defeating. The last increase took effect on the 1st January 1992. To cover the 1993 operating shortfall would require a subscription increase of more than £6 per annum from every member.

The challenge is to develop a strategy which will encourage the enrolment of many new members and to seek to raise Endowments.

You are invited to move the acceptance of these accounts but first I shall be happy to deal with any questions which arise from the figures before you. I shall then propose the motion, of which notice was given at the 1993 annual general meeting, that the four separate Prize Funds be consolidated into a PRIZE ESSAY TRUST FUND with proper acknowledgement of donor's intentions whenever a competition is advertised.

This motion was duly carried.

After the conclusion of the AGM, the chair was taken by the Rev'd. Dr. Michael Collis, who introduced the speaker for the evening, Mr F. Nigel Hepper, BSc, FIBiol, former Research Botanist at Kew. The title of his talk was 'A Botanist looks at the Bible', and it is hoped that this will be reported in the next issue.

## A DIFFICULT SUBJECT FOR EXPERIMENTS

Recent issues of *THES* have seen a number of writers from many disciplines attempting to solve the problem of consciousness. Molecular geneticists, quantum theorists, mathematicians, cognitive scientists, neurophysiologists, and artificial intelligence workers—all have a finger in the pie. And apparently for one 'impure philosopher', Daniel Dennett, consciousness has been explained. Yet for many 'pure' philosophers the problem seems as difficult as it seemed to the great philosophers of the past.

Seduced by the success of physical science, many non-philosophical writers assume that nothing exists but physical entities and their properties, a way of describing the world which makes no reference to the point of view from which that description is given—the subject.

The deepest motivation for attempting to explain consciousness through brain processes seems to derive from ontological intuition: given that what is respectable and rigorous is what is physical, scientifically explainable, there is no place for the subject (or the mind, or consciousness). In some cases there isn't any ontological commitment: all we need is a systematic explanatory theory. But is such an intuition correct? And are there cogent independent reasons for accepting these explanations?

The problem is not whether consciousness can be explained in terms of the physical. Whatever explanatory theories we give in this area would suffer the same fate that all such theories have suffered in the history of philosophy. Whatever equations a neuroscientist or any other expert theorist may give, whatever physical resolutions are advanced, the phenomenon of consciousness will always remain: our understanding of consciousness (however vague and inadequate) is something that has to be presupposed if such theories are not to be left spinning in a void. Reductive or eliminative theories involve stripping off the leaves to find the real artichoke—but then what we have is no longer an artichoke. I do not deny that these theories might succeed in explaining the workings of the brain. I do deny that such explanations would provide us with a picture, let alone the complete picture, of what consciousness is. How can what is left possibly add up to consciousness? A satisfactory answer should enhance our conception by rejecting any attempt to understand consciousness in terms of theories that presuppose the answer to the central question.

All this might leave the various theorists utterly unmoved, arguing that the problems I raise are pseudo-questions—that I treat them as genuine philosophical questions by refusing to accept their theories, leading me to make claims that are fundamentally misguided.

Whatever the answer to such claims, we are still faced with an independent problem about consciousness. And this brings me to the crux of the matter.

The different areas of discourse that attempt to explain consciousness all adopt purely third-person approaches. They develop theories, set up experiments, work out hypotheses, thrive on models and metaphors. A theorist might identify the different brain states, neurons, etc, construct statements such as 'consciousness is xyz', like 'water is  $H_2O$ ', and give a complete explanatory theory of the brain. But even if it turns out to be just a matter of equations there is still something left unaccounted for: the first person.

It is the phenomenon of the first person itself that poses the greatest challenge to non-philosophical theories of consciousness. The first person is the anchoring point of each subject's system of self-reference, tying his concepts to objects in the world.

Giving a complete explanatory theory of the brain does not imply anything about what it is to be conscious. What it is to be conscious is not a matter of equations, however complicated. It is rather to have passed over from the condition of the observer—the theorist—to the condition of the conscious subject. Now it might still be objected—this time by some pure philosophers—that the problem is unreal, and that the sense of irreducibility that I am defending is based on a misunderstanding: a confusion about the (Fregean) sense and reference of terms. But, and I am sure Frege would have agreed, this is where the analogies based on and the equations drawn from the discoveries of other physical entities collapse: there is no subject, no first-person mode of apprehension to be accounted for in water, in neurons, or in particles. That is why statements like '“You”, your joys and your sorrows [. . .] your sense of personal identity and free will, are in fact no more than the behaviour of a vast assembly of nerve cells and their associated molecules' (Francis Crick, *The Astonishing Hypothesis*) are simply fallacious. Statements, especially in this area, that contain phrases like 'no more than' or 'nothing but', almost invariably beg some fundamental questions.

What distinguishes us from other natural-kind entities in the world is precisely our first-person perspective, the conceptual capacity to self-identity and self-ascribe. It is this capacity which promises a metaphysical under-pinning of the view that we are in the physical world but at the same time resists reduction to any description of it. Thus any attempt to reduce, eliminate, or ignore the first person by adopting the third-person perspective of science would be an attempt to erase consciousness itself. The irreducibility thesis I am upholding does not demand the priority of the first person, being

based on a symmetrical metaphysics of subject and world, for our first-person mode of apprehension is not unaffected by the external world.

Philosophers like Descartes, Hume and Kant realised how difficult the problem of consciousness really was. Having concluded that 'I am nothing but a bundle of perceptions', Hume had the intellectual honesty to recognise—and lament in the Appendix—his inability to account for the very thing that had led him to that thesis: the self. It is the self (the subject, the 'I', the first-person mode of apprehension) that is so adept at slipping through the nets of the various theories of expertise. Contemporary theorists, jumping on the bandwagon of consciousness, try to show how such a difficult problem can be sidestepped. They fail to convince us, for in their attempts to sidestep the problem, they sidestep the phenomenon of consciousness itself.

*Andrea Christofidou is a lecturer in philosophy at Worcester College, Oxford.*

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## **A BIBLICAL APOLOGIA FOR EMPIRICAL RESEARCH**

### **I**

Anyone who attempts to survey Christian ministers or congregations will, from time to time, receive derogatory comments about the nature and value of his work. The same applies to pencil and paper data generated by pupils at school. Two reasons are usually advanced for this mistrust of self-completed questionnaires. Reference is made to David's sin in numbering Israel (2 Sa 24; 1 Ch 21). Alternatively, and more sophisticatedly, reference is made to the 'mystery of godliness' (1 Ti 3.16) and the attempt to profane it by counting and looking, by exploring what is not meant for human eyes.

Both these arguments are misconceived. David may have wanted to count the people of Israel but the conversation between David and Joab shows that it was the able bodied men who were the target population. 'May the Lord your God multiply the troops a hundred times over . . .', says Joab, and when he reports back, it is the number of 'fighting men' (2 Sa 24.3,9) which is reported. The parallel passage in 1 Ch 21 makes the same point. David's underlying purpose, then, was to assure himself that he could cope with any military eventuality. He was not interested in how many farmers he ruled over or whether

the wealth of his kingdom exceeded that of Saul. He wanted to know how many soldiers he could assemble on the battle field. His trust, as Solomon's after him, was in danger of resting in human force, in Solomon's case in chariots, rather than in the Lord.

Certainly, there can be nothing wrong in holding a census so far as Old Testament theology is concerned. Moses is presented as conducting a very accurate count of the people in the Book of Numbers and, indeed, of subtracting the total of Levites from the total of firstborn males and redeeming the difference (Nu 3.46). The example of Gideon (Jdg 6) makes the same point: it is not the act of counting which is wrong, but the reason why it is done<sup>1</sup>. Both Moses and Gideon count people in order to bring greater glory to God. The smaller the size of Gideon's army, the greater the glory given to God; such a consideration is opposite to the thinking lying behind David's action.

Whether counting and measuring profane sacred mysteries must also depend on motivation and on divine timing. Mysteries will remain mysteries however much human beings attempt to solve them. But if, as the New Testament explains, God wishes to reveal what was previously hidden, he is perfectly capable of doing so. 'Prophets searched intently and with the greatest care trying to find out the time and circumstances to which the Spirit of Christ in them was pointing when he predicted the sufferings of Christ' (1 Pe 1.10). Peter's point is that the prophets failed to find the answer to their questions, but that the answer is given to the church. Indeed what the prophets found out was the answer to another question: why it was they were not being given the answer they wanted, 'it was revealed to them that they were not serving themselves but you' (v 12).

Certainly, however, the prophets are not punished for their curiosity or rebuked for their searching. The example of Daniel rather points the other way. Both with regard to the length of the Babylonian captivity (Da 9.2) and with regard to visions about the more remote future (e.g. Da 8.15; 10.12), Daniel's enquiries are commended, probably because his revelations lead him to intercession (Da 9.4f). A similar situation obtains in connection with Paul.

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<sup>1</sup> This argument can be sustained not only by making use of a simple approach to the biblical text and disregarding the uncertainties and complexities of source and form criticism but also by reference to the canonical approach advocated by Childs. This is particularly so with respect to the comments made later about the exodus from Egypt and the sending in of the twelve spies to Canaan because these events are all pentateuchal. (see Childs, B.S., (1979), *Introduction to the Old Testament as Scripture*, SCM).

The abundance of his revelations lead to increased responsibility and to prayer. The opening chapter of Ephesians spells out the revelation of God's purposes, 'the mystery of his will' (v 9) to bring all things under the headship of Christ and this revelation leads Paul to say that 'for this reason' he has not stopped giving thanks and praying for the church at Ephesus (v 15f). The cycle of thought—revelation, responsibility—is repeated in Galatians (1.11–17), Colossians (1.25–29) and Romans (chapters 9–11) which explain the work of God among the Gentiles and Paul's duty to proclaim the Gospel of God to them (Ro 15.16).

## II

Indeed, not only is it permissible to quantify the people of God, but Scripture gives persuasive reasons for the active pursuit of empirical work, that is, work involving counting and testing. Moses sent the twelve spies into Canaan before the general Israelite advance. We may ask, after the ten plagues and the crossing of the Red Sea, why should this be necessary. Nevertheless Moses wished to make his strategic attack on Canaan on the basis of empirically collected information. Revelation might have given him the same information but, in this instance, revelation was not appropriate because revelation would not produce either tangible produce (like the grapes of Eschol) nor would it be convincing to the people as a whole. Only a survey of the land conducted by appropriate representatives would do.

In the New Testament the same practical approach is endorsed. Within the context of the Thessalonian correspondence Paul encourages the church not to 'become easily unsettled or alarmed by some prophecy, report or letter' (2 Th 2.2). At the end of the earlier letter, he had told them not to treat prophecies with contempt. The danger, apparently, was a lack of balance: on the one hand prophecies might be contemptuously dismissed and, on the other, be unsettling or alarming. As a result, the Thessalonians are told 'test everything. Hold on to the good' (1 Th 5.21), a command which implies an active, rational and, one may say, empirical procedure.

The same idea of testing is found in Paul's dealings with the Corinthians. 'Examine yourselves' and 'test yourselves', he tells them (2 Co 13.5). If these injunctions are to have any meaning, they must imply an attempt to get beyond the purely subjective and to obtain a form of external assurance. The context of the passage, which begins by saying that every matter will be 'established by the testimony of two or three witnesses' (another form of verification), speaks of Paul's own attestation by the power of God, an attestation which he wishes the Corinthians to experience for themselves. Earlier he has pointed

out that his initial visit to them was 'not with wise and persuasive words but with a demonstration of the Spirit's power' (1 Co 2.4) for the express purpose that their faith should *not* rest on human wisdom but on God's power.

In another context Paul deals with the operation and functioning of spiritual gifts and he specifies that when prophets speak 'the others should weigh carefully what is said' (1 Co 14.29), a process which again implies that the purely subjective is inadequate. This impression is strengthened by Acts 13 and the sending out of Paul and Barnabas on the first missionary journey. The directive of the Holy Spirit (perhaps by prophecy since prophets are mentioned at the beginning of the chapter) is that Paul and Barnabas should be set apart 'for the work to which I have called them' (v 2). The directive of itself did not constitute the call to missionary work but was an accompaniment and confirmation of a call which had *already* been received. If we make the reasonable assumption that the call which Paul and Barnabas had previously received was internal and private, then the situation in Acts 13.1-4 shows how this call was publicly recognised and activated. What was required, therefore, was a combination of the subjective and personal with the objective and public.

In Acts there was a tendency to count the early church. Acts 2.41 gives the number of converts on the Day of Pentecost as about 3000 and in Acts 4.4 a number of about 5000 is mentioned. Somebody was interested in figures. A similar phenomenon is suggested by 1 Timothy 5.9 which implies that a list of widows was kept so that only the genuine cases should be supported by the Church's funds. The organisation of the early church was therefore not haphazard and careless. The numbers of people involved necessitated practical care provided by specially chosen individuals (Ac 6) and the transfer of funds, when this took place, was carried out by men supported by 'letters of introduction' (1 Co 16.3). Miracles seem to have gone hand in hand with hard-headed practicalities.

### III

Of many historical instances which could be mentioned, two illustrate relevant issues. Galileo's recantation of his support for a heliocentric universe is a matter which should cause Christians to squirm even today. On the basis of a misreading of Genesis and of a fixed interpretation of Aristotle, the geocentric universe was firmly installed in the minds of pre-renaissance clerics and lay people. It is sufficient to point out the 'common sense' arguments which were advanced in favour of a stationary earth—for example, that if the earth moved there would be a constant wind blowing at the same speed and in the

same direction—now look ludicrous and that the Church's defence of the indefensible damaged her moral and soteriological authority.

The formation of the Royal Society in Britain and the religious orientation of its members has been extensively discussed (Hooykaas, 1993). A good case can be made for proposing that science arose among those with a mind-set adapted to seeing the world as a rational place because it reflected a rational Creator (Tawney, 1922; Willey, 1934; Merton, 1938; Hill, 1965). Or, to put this another way, the rise of science occurred where it did, in Europe, and when it did, soon after the Reformation, because the conditions produced by Protestantism were conducive to the methods and attitudes of those who broke new ground in their scientific endeavours.

For our purposes these two issues lead to four conclusions. First, the research of Galileo helped to dethrone Aristotle, and this later had consequences in theology when scholasticism was eventually discarded. Second, the original sixteenth century compatibility between Protestantism and science would be juxtaposed with the adversarial relationship between science and religion which arose in the nineteenth century in the realm of evolutionary theory. Third, where the church is wedded to inadequate science (e.g. the cosmology of Aristotle and those who succeeded him), it will, insofar as its theology influenced by its science, produce inadequate theology. Fourth, the mathematical work of Galileo, and those who preceded and followed him, led to the postulation of explanatory concepts like gravity and inertia which were not directly observable.

#### IV

No evangelical Christian today would argue that the sovereignty of God is compromised by the existence of gravitational forces. On the contrary it would be argued that God works through and by means of gravitational forces or, to put the matter another way, that secondary causes do not obviate the efficacy of a first cause.

In the same way that counting and measuring in the physical world have led to the postulation of explanatory concepts, so it is possible to produce explanatory concepts which deal with the functioning of human beings. On the basis of a large number of responses to standard questions, personality variables like 'extraversion' and 'introversion' can be constructed and used to predict or explain human behaviour without, in any way, detracting either from human free will or from a belief in divine providence. Counting and measuring are therefore useful for checking subjective impressions (is the church growing or shrinking? Does this or that evangelistic method actually do any good?) and for helping in the construction of

explanatory models of human behaviour. They neither detract from the 'mystery of godliness' nor offend against the God who comprehends all words and all numbers.

DR WILLIAM K. KAY  
Centre for Theology and Education  
Trinity College  
Carmarthen  
Dyfed SA31 3EP

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## ETHICAL QUESTIONS ON YOUR DINNER-PLATE

This is a story about public perception, ethics, and the introduction of certain products of biotechnology for food use. It stems from my experience in chairing the Advisory Committee on Novel Foods and Processes (ACNFP): one of the network of committees that advise government ministers. There are 18 members—experts in fields such as food microbiology or genetic modification—plus a consumer representative and an ethical adviser. We meet four times a year to consider a whole variety of new products and processes that come from the food industry.

By asking a series of 'what if' questions we try to think of anything and everything that could go wrong, and then whether we can ensure that it won't, before offering our advice. We often go back to the company for more information or new experiments before making a final decision.

Four years ago, we were asked about sheep modified to carry the human gene for Factor IX, a protein involved in blood-clotting required for the treatment of haemophiliacs. The purpose of the research programme was to develop a cheaper and safer source of the factor, currently obtained from human blood. The gene was introduced by injection into the fertilised egg before reimplantation and rearing. It is present in all the cells of the animal, but not active in

all of them; in this case the protein is released only into the animal's milk, from which it is readily purified.

The process is, however, not very efficient. In many cases, the injected gene does not integrate and is degraded. In others the gene is present, but not in a form which can work. So a large number of animals, often over 100, are reared to obtain one animal which produces Factor IX in high yield.

We were asked what should happen to those animals which either contained no gene and were therefore absolutely normal, or which contained an inactive foreign gene or part of a gene. Could they be eaten?

We could not think of any reason why animals without any foreign DNA should not be eaten. But were newspapers going to run the headline 'Failures from genetic engineering in your supermarket' if we said yes? What about the animals containing an inactive human gene? Was this just a stretch of DNA like any other? Or was it special, because it came from a human being? Would people object to eating an animal containing a human gene? Would Muslims or Jews be concerned about pork genes in lamb, and vegetarians about animal genes in plants? We did not know, but decided it was a wider issue than one of pure technical safety, and suggested to the minister that a study group be established to consider the question. This was done, and its report was published last year (*Report of the Committee on the Ethics of Genetic Modification and Food Use*, HMSO).

But why were we so sensitive about the issue? First, the expert process—e.g. the work of ACNFP—is no longer trusted as it was. The man in the white laboratory coat no longer has the authority he once had—and has disappeared from advertisements as a consequence. He no longer recommends washing powder; the consumer does. Partly because experts have sometimes been wrong, and partly because we now realise that any so-called technical decisions have societal and environmental implications. Such decisions need opening up; and all expert committees, including ACNFP, are changing to meet this need. We publish the agenda for our meetings, and our advice to ministers; we have a press conference to introduce our annual report, and consumer and ethical-issues members of our committee.

Second, the general attitude to risk has changed. A hundred years ago the main objective was survival. Now we are much more concerned with the quality of life, and take survival for granted. We want a risk-free environment—especially if others take the decisions about the risk.

Third, we now understand that such risk decisions are not purely

technical. We use other criteria besides risk/benefit judgements: outrage (how dare they do this); dread (the way many would feel about the risk of a nuclear-power-station accident); stigma (the label now attached to food irradiation).

Fourth, we weigh risk/benefit judgements differently in medicine and in food. Society has accepted biotechnology much more readily in medicine than in food. We use genetically modified microorganisms to produce interferon, growth hormone or insulin—all in use in modern medicine, whereas there has been great resistance to the introduction of somatostatin to increase milk yields from cattle. When we are ill, and especially seriously ill, we will accept quite high levels of risk.

Then there is a series of ethical and moral issues. Why do people think that some of these new developments are not only unwise, but wrong?

A common complaint is that scientists are playing God. People say, we have been breeding plants and animals for thousands of years, but moving genes across species barriers is unnatural and wrong. How do you know you are not going to release a new plague? Scientists reply that they see living systems as a unity, knowing that cells, from bugs to man, work in much the same way. So why shouldn't they move genes around? What is needed, says the scientist, is a clearer explanation of the science, and then people will be reassured.

That is fine, but sometimes misses the point—rather like raising one's voice, in English, to explain a point which an intelligent but non-English-speaking Frenchman has failed to grasp. Is there a danger that we fail to understand each other because we are talking different languages—and, more specifically, because we have different value-systems?

All parties agree that there are safety issues in, say, the genetic modification of crops. Scientists judge those issues on purely technical grounds; but that excludes those other issues—such as outrage, dread and stigma—which are part of the societal decision-making process. This failure to talk about all the issues leads to misunderstanding and suspicion by the public. We scientists have got to listen, and try to deal with their concerns, not just say the same things in a louder voice.

Then there is the natural/unnatural issue. Some think that it is unwise, even unethical, to disturb the natural world—and that genetic modification is unnatural because it crosses species barriers. As a Christian, I do not accept that all that is natural is best; the world is not perfect, the original creation has been spoiled, and Christian faith

deals with this robustly and straightforwardly. Christians too carry responsibility as stewards of the world; but the issues are of care and renewal rather than resistance to all change. Natural is not always best: fungal infection of crops with production of the ergot alkaloids is certainly not for the good of those who eat the crops.

There is another issue. Crudely, would eating sheep meat containing a single human gene, in among 100,000 sheep genes, be cannibalism—or if not cannibalism, offensive and ethically objectionable? Surely not. After all, a human gene is no more than a DNA sequence, like any other gene. It is not even the original gene—but a copy of that gene, copied more than ten-to-the-power-of-fifty times in the preparation process, before injection into the fertilised egg. So there is no more chance of eating the original human gene than of recovering a specific drop of water from all the oceans of the world. Indeed, the gene, once its sequence is known, can be made completely in the test-tube. Would people object to eating a completely synthetic human gene, which had never been near a human cell?

We found that people are uneasy about even this. Why? Partly, I think because they do not know where to draw the line between one gene and a thousand. Is this the start of a slippery slope? Partly, also, I suggest, because people think there is something special about human genes. Is there a concern about what science is doing to our perception of humanness? People are loving, caring, choosing human beings, with deeply held beliefs and values, many of which are central to their view of what a human being is. They accept the centrality of our genes—but not that we are no more than a bunch of genes. So they think there must be something special about human genes, which must not be treated merely as chemicals.

Is this a reaction to reductionism—a rejection of the idea that we are nothing but a bunch of genes? The concern of the public is not lessened by the aggressive determinism of some current biologists, or the slant of some of the science-education initiatives.

It is certainly a warning to Christians, and to all who hold a supernatural view of the world: that in stressing the underlying simplicity and order of our complex world which modern molecular biology reveals, and in stressing the power and effectiveness of modern technology, we must also stress the limits. Science too, I believe, must be less assertive, perhaps less arrogant, than is currently sometimes the case. We who are Christians have a special responsibility; for we are at ease with a God who is both personal and knowable and also creator and sustainer. We have a responsibility in our science, and in the public use of science, not to oversell, not to

dismiss fears and concerns of others too lightly, and to be as even-handed as we can in our dealing with both the public and our own scientific community.

*Professor Derek C. Burke is Vice-Chancellor of the University of East Anglia. This article is a shortened version of the first Donald McKay lecture, given at the University of Keele during the British Association meeting there in September 1993 and reproduced with permission from 'Church Times', July 29 1994.*

## CORRESPONDENCE

Notice of publications of interest:-

'The Supernatural, Reality, Time and the Transcendent'

This booklet has been issued from Denmark, and copies may be obtained from John G. Muir, 'Craig Dhu', Rowan Avenue, Dornoch, Sutherland IV25 3HP at a cost of £3.50, post free. A list of the contents is included here.

- Foreword .....
- C. S. Lewis: *Two Lectures* .....
- K. A. Kitchen: *Evolution, Undulation and Continuity in the World of the Old Testament* .....
- A. E. Wilder-Smith: *Origin and Function of Information in Abiogenesis and Evolutive Speciation* .....
- Peder A. Tyvand: *Relativity, Reality and the Transcendent - the Grand Unified Theories* .....
- Steinar Thorvaldsen: *Mathematical Modelling - Nature and the Transcendent* .....
- Peter Øhrstrøm: *Logic and Transcendence* .....
- David Potter: *Death - the Experience of a Lifetime* .....
- John Ling: *The Origins of Good and Evil* .....
- Oliver Wilder-Smith: *Psychology and the Conflict Between Immanence and Transcendence* .....

David Potter: *The Supernatural in the World of the Mentally Handicapped*.....  
 I.S.B.N 87-89158-02-4

'New Scientist' has published one newsletter (so far) which includes a selection of letters on the topic 'Science and Religion – Complementary or Contradictory?'. These letters have been sent to the journal at various times, though they are not dated. The Editor of this Bulletin would supply further information if requested.

## BOOK REVIEWS

**Ed Regis *Who Got Einstein's Office?*, Penguin, 1989, 316 pp., paperback, £5.89**

This is a book about the scientists who lived and worked at the Institute of Advanced Studies in Princeton, USA. The Institute was, and is, a place for purely theoretical study. Experimentation is frowned upon; one is simply paid to think. Many of the world's most famous scientists have resided there, e.g. Einstein, Gödel, Oppenheimer, etc.

When Einstein first began his residence at the Institute, his work on Special and General Relativity was already history. His stay was 20 years, and he was revered as a god. However the man himself was the essence of modesty and kindness, who treated others democratically as equals. 'I speak to everyone the same way', he said, 'whether he is the garbage man or the President of the University'. Gödel, the mathematician and logician was neglected, passed over, ignored. He bowed to anyone in authority, but as regards the Institute, home of abstract theory, he was ruler of the roost in the way which really mattered, in abstract thought. He was a Platonist in the most literal sense who thought that mathematical numbers, sets, geometrical structures are, in fact 'out there'. Oppenheimer was Director for 19 years, and after his political persecution he was able to get back to what he enjoyed most—reading, thinking, and talking about physics.

There are many other personalities here. Paul Dirac, the British physicist, lived in a world of silence and equations as a result of which he was able to predict the existence of antimatter, which was later confirmed by experiment. John van Neuman, a mathematician, threw parties where there was smoke, dancing, loud laughter, uniformed servants and camaraderie. He became a professor when quite young, and many mistook him for a graduate student. He was a human adding machine who once took on a computer in a calculation, and won.

There are many stories of scientists in this book. The men, their genius, eccentricities, idiosyncracies, subject matter, and much more come across with humour, fascination and wonder. The book is an excellent read.

B. W. COOK

*Brian Cook is a retired teacher of Physics*

**Michael Perry *Gods Within*, SPCK, 1992, 178 pp., £11.99**

In the midst of a plethora of publications that either condemn outright or embrace entirely the New Age Movement, here is a book of common sense and balance. Michael Perry seeks to look behind the popular New Age images and asks some searching questions. What, in fact, is the New Age Movement and where does it spring from? Why is it striking such deep chords in the human psyche? Has the Church failed to respond to the needs being met by the NAM and what are the lessons to be learned?

It is refreshing to read a Christian critique that does not write off the NAM en bloc or embrace an 'all roads lead to God' philosophy. Though clearly written with an evangelistic motivation, the book employs and recommends a spirit of engagement and not condemnation.

Outlined in the early chapters is a history of the NAM together with reasons for its widespread attraction as we head towards the close of the millenium, an attraction that grows as institutional religion is in decline.

Implicit throughout the book is the conviction that the varied manifestations of the NAM have within them a common thread. Namely, that human potential is limitless—we simply need to find ways of connecting with 'the god within' or 'the Higher Self'. Here, perhaps, lies the place where Christianity parts company with the NAM. Exactly where is left for the reader to decide, though some clear guidelines are given.

Various aspects of the NAM are grouped together and examined in individual chapters. Thus, one chapter looks at subjects such as astrology, ouija, I Ching and other forms of divination. Another considers goddess worship, Gaia and Wicca. A particularly interesting chapter picks up the recurring New Age theme of reincarnation and reveals it to be something very different from the Hindu and Buddhist concepts. Similarly, differences between the New Age practice of 'channelling' and spiritualism are drawn out.

In a book of this size it is inevitable that the reader is left somewhat bewildered by the sheer diversity of the NAM. It does, however,

provide a concise overview which draws attention to the main themes.

Without doubt, the NAM has much to say to the Church in this late twentieth century, not least about its failure to connect with the spiritual search of so many people.

The closing chapters provide some useful thinking on a way forward for the Church that takes seriously the needs being met by the NAM. Such needs can be met from within the rich spiritual traditions of the Church. The New Age Movement may well be a timely reminder for the Church to draw again from the well, so that others may be drawn to a 'more excellent way'. That 'Way' is a title of Jesus, 'who is the cosmic Christ of this and every age, to whom be the glory—to the ages of ages!'

IAN MAHER, CA

*Ian Maher is Church Army Captain, New Cross, London*

**D. W. Patten *Catastrophism and the Old Testament*, Pacific Meridian Publishing Company, Seattle, USA, 1988, 289 pp., paperback, \$14.95**

Who has not, at some time, when reading the Scriptures, wondered at the marvellous and extraordinary events recorded therein—water piling up like a wall, large stones falling from the sky on the same day that the sun stood still for many hours, a well-dowsed sacrifice burned up by fire falling from the sky and a sundial that went backwards for a while, not to mention a worldwide flood? It is easy to dismiss such events as myth or imagination but for those who hold the Bible to be the words of God the question arises 'Just what did happen?' and to those of scientific bent 'Just what was the physical nature of these events and by what mechanisms did the LORD accomplish them?'

Mr Donald Patten, the author of this book, asked himself these questions too, but went further. Having been exposed to the ideas of Immanuel Velikovsky, he could see the likely planetary catastrophic nature of these events. To this, in conjunction with Ronald Hatch, an orbital analyst and a member of his team, basing their thoughts on Biblical chronology, they realized that there was periodicity in these events and that it was highly likely that it was the same visiting body making regular journeys to the vicinity of the earth. The result was two books in the late Sixties and now, on his retirement from his position as a Professor of Geography, a new book, first of a trilogy, 'Catastrophism and the Old Testament'. Meanwhile, in co-operation with his small team, he has produced a dozen or more papers on Biblical catastrophism and related subjects, including several for 'Catastrophism and Ancient History' and 'Aeon'.

Although influenced by Velikovsky, Patten, no slavish imitator, bases his findings on Mars (rather than Saturn, Venus and Mars at various times) as the visitor 'wot dunnit'. Mars was in 2:1 orbital resonance with the Earth making a return crossing of the path of the Earth once every two years. Jupiter and Saturn were also in orbital resonances of other ratios and, depending on their relative positions to the Earth-Mars system, produced perturbations in it. Every 108 years the distance of closest approach was minimal and once every five such approaches, 540 years, there was a major 'event' (the Noachic Flood, the Tower of Babel, the Long Day of Joshua). Many catastrophic authors have tended to ignore interplanetary electromagnetic forces but in his book Donald Patten shows that these normally outweigh their gravitational counterparts in producing changes of motion when two planetary bodies are in close proximity to each other. In addition they produce specifically electromagnetic effects such as the 'fire from heaven' which ignited Elijah's sacrifice on Mount Carmel.

At this stage the query will inevitably arise as to how effectively Mr Patten has demonstrated his thesis. In the mind of the reviewer, admittedly no expert in astronomy, the demonstration is quite convincing. The author bases his concepts on Newtonian mechanisms, geomagnetic principles, gyroscopic theory and historical accounts and the use of Occam's razor. There are plenty of diagrams and one or two photographs to aid comprehension of the textual descriptions. 'Historical accounts' include the Old Testament, Greek and Roman historians and the Greek myths and are complemented by the results of recent space research missions.

There are some areas where further work could well have payed off. Occam's razor is somewhat subjective and different observers can well perceive differing processes as providing the simplest solution that fits the facts. Moreover, did God use it every time? or, since He 'moves in a mysterious way His wonders to perform', did He use a more complicated way on occasion? One particular case which the reviewer leaves to the reader to resolve, concerns the Pillars of Cloud and Fire which, with the associated manna-fall, lasted forty years (during which Mars retreated twenty times) and which is very difficult to solve on the basis of a Mars flyby (normally come and gone out of range in less than a couple of days).

As regards presentation, part of the book utilizes a 'debate' format, expanding the, by now somewhat tedious, 'creationist-evolutionist' arguments to a four-way 'flat creationist-uniformitarian-theistic evolutionary-planetary catastrophist' confrontation. The reviewer would have preferred a 'tell-it-as-it-is' approach leaving such

arguments, which do but engender strife, to the reader if he so desires. The author, to lighten what could have been a somewhat 'heavy' subject, also uses humour. Although welcome, this is hardly necessary since he writes in an engaging and, for the non-specialist scientific reader, an easily understood manner. Not all of us have the same appreciation of the ludicrous and the reader may find Mr Patton's 'Montana-style' not to his appreciation.

Now, why read 'Catastrophism and the Old Testament' at all? Not only is it an absorbingly 'good read' but it is amazing what incidental information one picks up, not only from the book but also from the supporting references, on Scientific and Biblical subjects which had previously mystified. As a bonus, to reword a well-known dictum 'the past (and the present) are a key to the future'. There are chapters in Revelation which cry out for discernment in the light of the knowledge you will have gained!

So, buy (or, at least, borrow) it! You will not put it down easily before reaching the back cover!

DEREK R. QUESTED

David Hay *Religious experience today. Studying the facts*, London: Mowbray, 1990, 114 pages. ISBN 0-264-67072-8

Even in our secularised society, most people say that they believe in '(a) God'. That might be expected from Romans 1:19-21. More surprising perhaps is that half the respondents to a British survey in the mid-1980s recounted some occasion(s) when they were aware of a presence or power outside themselves. Dr. Hay's little softback is a handy introduction to the collection and interpretation of such polls and anecdotes to flesh them out.

David Hay challenges the Church to be more open to the implications of professed spirituality outside organised religion. He points out the importance of a sense of God's presence to the terminally ill and indeed the chronically sick. He advocates the education of all children to become aware of inner experience and of others' outlooks on deeper meanings to life. This is not to take a particular position on evangelism, interfaith relations or religious education in schools. Rather, Hay is urging an empirically based attack on the last taboo, which is not sex, death or madness but baring our deepest feelings about life. Scientific rationalists should start being rational and scientific about religious experiences too.

The framework of Hay's book is the story of the Research Centre that was founded at Manchester College in Oxford by his fellow-zoologist, the late Sir Alistair Hardy, and of his own involvement in

such work, including a period as Director of the Centre. As a Unitarian foundation, the College had always been interested in the universality of religious belief. Hay is a Roman Catholic and committed to a theology of Grace. Nonetheless, he shares Hardy's hope that materialism marching under the banner of science can be beaten back by a broader use of the scientific method to study what they call 'the nature of human personality'.

Unfortunately, most natural scientists lack even an introduction to the human sciences, despite anthropology, sociology and psychology being over twice as old as nuclear physics, biochemistry and genetics, and a lot closer to everyday life. In their current forms, sciences of mind and society are as near neutral on extrascientific issues as are, say, cosmology, evolutionary biology and pharmaceutical chemistry. They provide academically well-defined technical challenges in the study of religious experience. Christians familiar with science should be wary of making empirical claims about human experience and behaviour either from verses of Scripture or from data that have not been collected and interpreted by the standards of the relevant scientific community. Hay sometimes describes regrettable amateurish efforts at anthropology or sociology and misnames them psychology, insofar as these fields remain distinct.

For example, the early anthropologists found that virtually every tribe they studied had a religion of sorts. Hay cites the use of these findings to conclude for the biological evolution of religion. Yet what the anthropologists saw was the key social roles of religious beliefs and practices. This no more requires specifically biological explanation than Richard Dawkin's 'memes' require genes. Indeed, elsewhere Hay makes a plea for the listening and the participative observation which are the key to the ethnographic method that divides the social tradition from the biological within anthropology.

An important chapter points the paradox of a taboo on religious talk when belief in God and religious experiences are so common. These phenomena need careful sociological and historiographic examination.

Hay regards the study of religious experience as scientific in that it is part of psychology in the broadest sense of empirically supportable generalisations about the mind. Hay points out that some early figures of American psychology such as William James, G. Stanley Hall and John B. Watson (founder of anti-experiential behaviourism) emerged from New England evangelicalism. James is best known for his book *Varieties of religious experience* (1902). Hay points to its predecessor in Jonathan Edwards' *Treatise concerning the religious affections*

(1746). Evangelicals today may note the implication that discernment of genuine faith has empirical elements.

As Hay states, a continued sense of communication with God, beyond the conversion experience, was important for Edwards. Yet Hay seems to be concerned primarily with particular moods and moments of insight, rather than with settled attitudes and outlooks. He quotes the occasion that Edwards recounts of an altered awareness of nature. Also, Hay construes 'experience' in a strictly subjective way, with neither anything objectively out of the ordinary occurring nor any direct outworking of the event into practice.

There are both spiritual and technical difficulties with this approach.

No doubt believers have emotional times with God and there may hardly be faith where there is no feeling. Yet real encounter with God has contents of belief and consequences for living. Can an account of religious experience be viable without objective and practical elements?

The technical difficulty applies to the empirical study of any phenomenon lacking both a definable origin and a specifiable effect. Many early experimental psychologists (the Introspectionists) tried to build a science out of pure subjective experiences and failed. The philosopher Ludwig Wittgenstein later showed why (and he was working on a religious agenda, according to Fergus Kerr, *Theology after Wittgenstein*, 1986): our private experience has to be formed out of and expressed in terms of our public life. Thus, it may be a sign of personal maturity to interpret some isolated experience as religious, as developmental psychologist Margaret Donaldson implies by the second part of her recent book *Human minds*, but that account makes sense only as informed by religious communication and community, whether in the flesh or from literature.

Recent surveys of unusually intense sensory experience indicate that it is little if any more unusual than events to which other surveys give a religious cast. The responses to a poll of religious experience will depend on what feels appropriate to the respondent while facing the source of a question worded in a particular way.

That does not make the survey results or the anecdotes any less real. What it requires is close examination of their connections to the rest of the respondents' lives and to the psychology and history of full-blooded religion. Even supposing that it was an epileptic fit on the road to Damascus, this cannot gainsay how amply that experience of Jesus Christ was displayed in the life and teaching of the Apostle Paul.

D. A. BOOTH

*Dr Booth is Professor of Psychology, University of Birmingham*

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United Kingdom Office:  
Latchett Hall, Latchett Road,  
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The *Faith & Thought Bulletin* first appeared in 1985 under the title *Faith & Thought Newsletter*.

The new title reflects a wider coverage, since it will contain some short articles, notes and book reviews, in addition to the news items hitherto, which would not fall within the purview of the journal.

It is published by The Victoria Institute and mailed free to all Institute members, along with *Science and Christian Belief*.

The journal *Science and Christian Belief* is published jointly for VI and CIS. It replaces the CIS (previously RSCF) *Newsletter* and the VI journal *Faith & Thought*, the final number of which was volume 114 No 2 October 1988.

Editorial address:

A B Robins BSc PhD  
185 Wickham Road  
Croydon  
Surrey CR0 8TF

Administration address:

Brian H T Weller  
Latchett Hall  
Latchett Road  
London E18 1DL  
081-505 5224

ISSN 0955-2790

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