

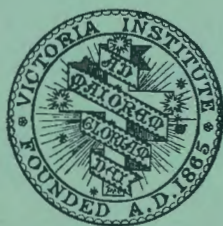
1977

Vol. 104

No. 1

# Faith and Thought

Journal of the Victoria Institute or Philosophical Society of  
Great Britain



*Published by*

**THE VICTORIA INSTITUTE**

130 WOOD STREET, CHEAPSIDE, LONDON EC2V 6DN

Tel: 01-606-2471

Summer 1977

## ABOUT THIS JOURNAL

**FAITH AND THOUGHT**, the continuation of the **JOURNAL OF THE TRANSACTIONS OF THE VICTORIA INSTITUTE OR PHILOSOPHICAL SOCIETY OF GREAT BRITAIN**, has been published regularly since the formation of the Society in 1865. The title was changed in 1958 (Vol. 90). **FAITH AND THOUGHT** is now published three times a year, price per issue £1.50 (post free) and is available from the Society's Address, 130 Wood Street, Cheapside, London, EC2V 6DN. The price of recent back issues (when available) up to the end of vol. 100 is 80p (post free).

**FAITH AND THOUGHT** is issued free to **FELLOWS, MEMBERS AND ASSOCIATES** of the Victoria Institute. Applications for membership should be accompanied by a remittance which will be returned in the event of non-election. (Subscriptions are: **FELLOWS**, £7.00; **MEMBERS**, £5.00; **ASSOCIATES**, full-time students, below the age of 25 years, full-time or retired clergy or other Christian workers on small incomes, £1.50; **LIBRARY SUBSCRIBERS**, £5.00. **FELLOWS** must be Christians and must be nominated by a **FELLOW**.) Subscriptions which may be paid by covenant are accepted by Inland Revenue Authorities as an allowable expense against income tax for ministers of religion, teachers of RI, etc. For further details, covenant forms, etc, apply to the Society. The Constitution and Aims of the Society were last published in **FAITH AND THOUGHT**, vol. 98, No. 1.

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2 Thornton Court, Thornton Road, Cambridge, CB3 0NS.

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UK ISSN 0014-7028

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A Journal devoted to the study of the inter-relation of the  
Christian Revelation and modern research

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## Editorial

In our last issue we published a list of members of the VICTORIA INSTITUTE. In the war years and after, when the office of the Society was moved frequently, much filing information was lost. As a result the register of members is far from being consistently presented. Eventually we should like to state (1) the date of joining the Society for the first time; (2) any degrees possessed; (3) whether the member has held office in the Society or has published in the JOURNAL; (4) whether he has at any time been awarded a prize or prizes offered by the Society. Though lack of proper records made it impossible to give all the information desirable, we thought it best to publish the list as supplied by our Secretary Mr. Brian Weller. We invite members when they are writing either to him or to the Editor to indicate if they would like the entries under their names changed. We shall aim to bring the list up to date every other year.

We are sorry to learn of the death of Mr. A.G. Tilney, aged 85. Mr. Tilney joined the V.I. in 1940, and took an active interest in it to the end. For 21 years he was Secretary of the Evolution Protest Movement which prospered under his leadership. Our sympathies are with Mrs. Tilney who survives him.

*Retirement of Mr. R. Inchley.* A reception was held on Friday 28th January at the Ivanhoe Hotel, London, to mark the retirement of Mr. Ronald Inchley after forty devoted and successful years with the Inter-Varsity Press. Mr. Inchley has been the leading figure behind the scenes for forty years at the Inter-Varsity Press, in a period which has seen the transformation of religious publishing in this country.

In January a new fortnightly magazine *The Third Way* (The Thirty Press, 19 Draycott Place, London SW3 2SJ) £7.50 p.a.) made its appearance. It aims to make evangelical Christians more consciously socially-minded. After a not too encouraging start, we have found the second and subsequent issues more interesting. The second issue for instance, contains an informative history of Protestant-RC relations (by Derek Williams, the Editor); a fine article on Mao's China (by George Patterson); a survey of false theories of the Genesis Flood (by Victor Pearce) and reviews — one of them by F.F. Bruce on J.A.T. Robinson's paper-back, *Can we Trust the New Testament?* (Mobrays, £0.75) in which he summarizes his larger work (see this JOURNAL 103, 145). We wish this new venture every success.

\* \* \*

*Erratum* 103, 169 on line 3 insert the word *isochron* in the gap.

## Discussion

Comments on *Theological Aspects of Ecology* by E. David Cook (102, 184) sent by Dr. S.G. Browne.

1. A deep problem is posed by our compassionate interference with natural regulators of population growth. By means of relatively inexpensive public health measures, we reduce the death rate, and have to face the results — a population increase of 1.8- 4.6% per year. God-implanted instincts and man-mediated compassion appear to be responsible for the present problem.

2. The oil-rich sheikhs introduced a huge spanner into the works. Developing countries needing insecticides, fertilizers and abundant water to take advantage of the new strains of rice, wheat and maize, face prohibitive fuel costs for the production and transport of fertilizers and the pumping of water for irrigation.

*Reply by Dr. E. David Cook*

1. Dr. Browne draws attention to the major problem facing medicine today. Man is now able to play "God" in terms of prolonging life and controlling disease and death. This is balanced by the discovery of birth control methods and population control. It is odd to blame either man, in his compassion, or God, in His creation, for the present situation. If man has freedom, he must also bear responsibility for his actions and his decisions. Man has no choice, but to use his skills. He needs to recognize that skill needs to be controlled by compassion; but a surfeit or absence of either leads to totalitarianism or emotionalism. Man must be himself, recognizing that he is finite and limited. Thus he has no ultimate control over all consequences. This must not lead to inaction, but to an awareness of contingency and inadequacy and thus a need for reference to One greater, more perfect than he. One almost accepts that if God did not exist, then it would be necessary to create Him. But He does; so it is not.

2. The selfishness of the oil sheikhs not only affects the better off European nations, but also the Third World countries. No man is an island, least of all in the compound effects of what the Bible calls "sinning". The behaviour of the oil-rich nations simply reinforces the view that man - rich or poor - is self centred and lacking in genuine love for his fellows. It is not economics which will create a new man and new attitudes, but moral and spiritual regeneration. Economic motives in ecology are pure selfishness. If we begrudge the right involved in ecology, it must be on moral and spiritual grounds. My initial paper was one attempt to outline a genuinely Christian approach to a moral crisis.

\* \* \*

*Sidgwick not a Spiritualist* Dr. E.J. Dingwall writes "Your review of Turner's book (103, 14) is very good as I expected, although there are one or two things that I could criticize. At the top of p.15 I don't think it is right to couple Sidgwick with Wallace and Myers as Sidgwick never turned to Spiritualism like the other two and indeed like Mrs. Sidgwick did".

# News & Views

## EARTHQUAKES

Until very recently geologists have generally held that the major changes in the earth's climate and geography have taken place slowly over hundreds of thousands of years. New evidence however is pointing to a different conclusion.

*Triggering Effect* In a recent paper James Kennet and Robert Thunell (*Science* 1975, 187, 497) describe results obtained from 320 cores obtained from all the main oceans of the world, save the Arctic. In every core it was noticed that there are two great deposits of volcanic ash corresponding to two periods over the past 20 million years, the second within the past 2 million. The theory of plate tectonics makes this understandable since strong volcanic activity in one region may be transmitted through plates to great distances setting up volcanic and seismic activity which, in turn, is transmitted to adjacent plates. Since the boundaries of the plates cover a large part of the globe it appears that sudden onsets of world-wide activity are possible.

The study of ocean cores is considered to be more revealing than other methods since there has been so little disturbance in the deep oceans. It is suggested that a violent shake up of the earth's mantle can precipitate an ice age. We are reminded of many passages in the Bible which suggest that there will be violent world-wide natural disturbances in the earth's surface in the 'great and terrible day of the Lord'.

*Chinese Quakes* The Chinese claim to have predicted one major earthquake successfully and by doing so to have saved several thousands of lives. In 1966 Chou En-Lai, the Chinese Prime Minister,

decided to make put the prediction of earthquakes high on the priority list for science. Ten thousand Chinese are now professionally employed in the programme and amateurs are encouraged to report anything they observe which might be relevant. A growing swarm of small shocks preceded the quake on Feb. 4, 1975 and this together with a change in the tilt of the ground and reports of curious animal behaviour led to the prediction. There was one false alarm after which people lived in the open for two days but a second evacuation of the city of Haicheng, with 100,000 inhabitants, was later ordered with six hours to spare. The city was completely devastated. (*Nature* 258, 295.)

However, the 1976 earthquake in NE China caught the Chinese unawares. In addition to other damage, and an undisclosed but apparently enormous number of dead, it is reported (*Times*, 9 Aug) that an entire hospital and a train were engulfed at Tangshan, 100 miles East of Peking. Compare the biblical story of the earth opening her mouth and swallowing up those who had rebelled against Moses, Num. 26).

*Dating* Mud is being slowly deposited in the Dead Sea, approximately 1 cm. every 12 years. Whenever there is an earthquake the churning up of underground waters causes springs in the vicinity to pour out water containing finely suspended white material (clay?) which is discharged into the Dead Sea. Thus, in 1943 the water acquired a distinctly white hue a week before the earthquake of that year, and the whiteness persisted for several months.

Dr. A. Ven Manahem (*Nature* 262, 200) finds that cores taken from the bottom of the Sea are marked with white bands marking such events. Correlation of the bands with records of past earthquakes has proved successful, and the single core examined shows all the earthquakes back to 31 BC. It is hoped that longer cores will soon be available by means of which it should be possible to check on whether some episodes of biblical history (destruction of Sodom and Gomorrah, and of Jericho, etc) were connected with seismic activity and if so to date them.

*Turkish Earthquake* *The Life of Faith* (19 Feb 1937) recently carried an article about the Turkish earthquake by Simon Evans ("Second Thoughts about Earthquake Relief"). A Christian who visited the area found that a German army medical unit sent in aid had returned home after doing just about nothing; that tons of medicines lay untouched at the Van airport; that the 60-tent 'city' set up in Van to house the homeless was near empty, that goods marked "Earthquake Relief" were commonly found for sale in local shops.

Monetary aid was available in plenty but Muslims cannot envisage Christian charity — gifts from abroad raise suspicions of political

or commercial pay-off. Corruption and deceit are the norm even in the presence of acute suffering. Organisation is hopelessly lacking: "Because no one trusts anyone else, no one can take the initiative and say what is needed, and where ... The most depressing aspect of the whole affair has been the lack of real compassion shown by those concerned in helping the survivors. To many of these organisers the villagers are just junk anyway, uneducated, illiterate, and worst of all Kurdish".

#### AMERICAN AND ENGLISH CREATIONISTS

In our last issue (p. 158) we published an article by John Byrt, Secretary of the Creation Society in Australia, in which he highlighted some of the fallacies about science which have gained credence in USA.

We are glad to note that a reaction to these views is setting in. In *News Letter* No.16 (Jan. 1975) of the recently formed North American Creation Movement (Sec. and Editor, W.D. Burrowes, Box 5083, Stn. "B" Victoria, B.C. Canada) the Editor urges fellow creationists to remember that the Bible makes no claim that the earth is only a few thousand years old and that it is folly to mix belief in the Bible with belief in such a surmise. The strange "canopy" theory, for so long a favourite with USA fundamentalists, has also come under attack by T.V. Oommen (*Bible-science News Letter*, Dec. 1976) and by J.E. Strickling of Georgia who writes a critical note on "The Waters above the Firmament" (*Creation Research Society Quarterly* 1976, 12(4) 221) in which he points out that the "vapour canopy" hypothesis, is incompatible with Genesis I. Birds fly in the open firmament of heaven (Gen.I:20). But the Sun and Moon are also in the firmament. So the "vapour canopy," if there was one, must have enveloped the sun, the moon and perhaps the stars too!

Finally, the new issue of CRS for March 1977 (13(4), 202) contains an article by Robert E. Kofahl who argues convincingly that all attempts to square the canopy with science are doomed to failure. The canopy, if it existed, must have been held aloft miraculously. Nor is it possible, in conformity with physics, to postulate water or ice in any kind of orbit to account for the water of the Flood.

Physically, the canopy theory has always been suspect. When it came falling down it is supposed to have produced the Flood. But cloud remaining aloft could only produce a flood a few inches deep as simple calculation shows. If, however, the canopy was higher up and arrived, perhaps, from space, it would liberate



enormous energy in descending to earth. It is not easy to see how such energy could be dissipated without a huge rise in temperature. Let us hope the hypothesis will soon be forgotten.

Unfortunately the earlier USA fundamentalist arguments are spreading to this country. Not only was an English edition of John Whitcomb and Henry Morris's *The Genesis Flood* published in 1969 but a summary of its arguments appeared later written by David C. Watson (*The Great Brain Robbery*, Henry E. Walter, Worthing, 1975). David Watson's later book (*Myths and Miracles*, Walter, 1977 £1.50) was recently sent to us. It consists of comments on Genesis 1-11 and asserts categorically that to believe the Bible we must hold that the sun and stars were created a few days after the earth which, like them, has only existed for a few thousand years, that the coal seams were laid down at the Flood etc. The canopy is accepted as fact and the suggestion made that in pre-Flood days it shielded mankind from dangerous radiation from space allowing people in those early ages to attain to the great ages of the antideluvians.

A valuable feature of highly unorthodox scientific literature is that it sometimes high-lights facts which are over-looked in orthodox circles. A case in point is the existence of human footprints contemporaneous with dinosaur tracks (dated 100-150my) in the Paluxy River at Glen Rose, Texas. A 45-minute colour-film strip "Footprints in Stone," is now showing in USA (available from the Bible-Science Association). The facts seem to be indubitable - they have been confirmed by repeated expeditions and new tracks have been found on digging to lower levels. Some of the tracks show large feet, but there are also footmarks of children and even primitive shoe marks. What do they mean? The CRS uses them to prove that the earth is young. The natural interpretation is that man-like creatures existed on earth in the days of the dinosaurs: they cannot have been numerous and must have died out. No skeletons have been found in the area - either of men or of dinosaurs.

*Bible Science News Letter* for Mar. 1975 contains an assortment of questions put by some of the 60,000 people who have seen the film. Regretably, answers given are of the usual mocking-at-orthodoxy type, especially as regards dating. Viewers were even told that light from the most distant stars might reach us in 15 years!

To end on a positive note, it is a pleasure to say that the standard of the finely produced *Creation Research Society Quarterly* has greatly improved of late. In the March 1976 issue (see also above) Professor Robert W. Bass of Brigham Young University, Utah, writes an unusually informative and critically documented article on "Darwin Denied: the Superstition of Stochastic Succession" (p. 197-200). It is written in conversational form

and collects and documents much anti-orthodox material in short compass. The same author also contributes a note on "quantum Psycho-Physics" (pp. 215-6) which is concerned with views expressed by E.H. Walker (*Mathematical Biosciences*, 1970). If the 'Copenhagen interpretation' of quantum mechanics is accepted, we humans are capricious robots since all quantum-mechanical transitions are supposedly random events. Walker urges that some transitions cease to be random in a brain but are under the control of a non-physical factor. In confirmation radioactive decay can be brought under control of mind (see also this JOURNAL 99, 80). This seems to confirm concepts such as "free-will" and "soul".

### BIG BANG COSMOLOGY

It has long been held that the presence of helium in the universe is best accounted for in terms of a 'big bang' at the beginning of the universe. It appears that similar considerations account for the presence of deuterium (heavy hydrogen). Assuming a reasonable value for the total mass of the universe the ratio of helium to deuterium comes out about right. Recently the various other ways in which deuterium might have been formed have been examined in detail but it appears that all of them run into great difficulties — either because too much of other light elements such as lithium, or too much radiation (X-rays) would have been produced as well, or because the conditions for the formation of deuterium are also the conditions for its destruction. It is considered just possible that deuterium might have been produced in neutron stars but this is not considered likely. It appears that the presence of deuterium and helium in the universe is still most easily explained in terms of the 'big bang' hypothesis. (*Nature* 263, 198.)

Hannes Alfvén, Nobelist, astronomer and professor of plasma physics at Stockholm, has recently attacked 'big bang' cosmology. (*Times Higher Educational Supplement*, 3 Sept 1976) He is at pains to point out that he is not therefore advocating the steady state theory of yesterday which is unsupported by observation. Nor does he suggest that any other theory is better and should be put in its place. His aim, rather, is to point to the dangers inherent in all theories which go very far beyond observation.

He starts by retelling the story of the ancients who, because they were so sure that the geometrically minded gods which made the world must have made a good job of it, must have based reality upon circles, since these were conceived as perfect figures. And so arose the cycles and epicycles of the Ptolemaic system. The ancient geometers did not worry much about facts: later, in Galileo's time, it was argued that if the telescope showed spots

on the sun it was the fault of the telescope, not the sun, for sunspots were impossible.

Greek science, or rather mathematics, started with some pleasing and fascinating discoveries, notably in geometry and in music which was proved to entail mathematical harmonies, but the Greeks allowed the truths they knew to develop into a doctrinaire system which increasingly diverted attention from the real world, from interest in observation and in science.

Alfvén thinks that the same factors are operating today. The general theory of relativity is pleasing to the mind and out of it, as Lemaitre showed, it is *possible* (but not obligatory) to build a theory of an expanding universe. Hubble confirmed that the universe is indeed expanding. Extrapolation backwards brought the universe back perhaps to a point, or maybe to a small sphere which some have made out to be much less than 1 cm in diameter! But we cannot extrapolate backwards so far with safety, even though the general conclusion that the universe must once have been much smaller than it is now is doubtless sound enough. It is when we bring it to the point stage, or near, that the difficulties commence. The black body background radiation is cooler than we expect; the quasars do not seem to be as uniformly arranged around space as we might have expected and there are other difficulties. Not that they are insurmountable by any means, for interactions of matter subsequent to the 'big bang' must surely have had their effect. But the point is that, as with the older Ptolemaic system, we can always explain every new point that turns up if we are prepared to invoke more and more *ad hoc* assumptions — add an extra epicycle and all is well till you meet the next difficulty, and then you add another — and circular motion is never questioned. Are astronomers doing the same today, Alfvén wonders?

Most serious development of all, perhaps, is the tendency to look down on the experimentalist and the observer. Many of the scientists who developed general relativity "had never visited a laboratory or looked through a telescope, and even if they had, it was below their dignity to get their hands dirty. They looked down on the experimental physicist whose only job was to confirm the high brow conclusions they had reached, and those who were not able to confirm them were thought to be incompetent. Observing astronomers came under heavy pressure from theoreticians". How like the ancient Greeks!

None of this directly concerns Christian faith. The general tenor of discovery confirms that the universe was once vastly different from what it is today. If it started off with a 'big bang' with an extremely small but supremely powerful bomb, or with a larger but less powerful one, it makes no difference. In

either case the rules are outside the laws and ken of science: in either case the extreme degree of care and thoughtfulness put into the universe is the same and points to a Creator of all.

Another point arises. It is often said that as science advances God is squeezed out of the gaps where He was formerly supposed to lurk. But in fact what we please to call the advance of science may simply be the formation of what Alfvén calls a myth. And as myths are generated they have to be encumbered increasingly with *ad hoc* hypotheses to keep them in existence at all — more and more of those epicycles!

*Continuous Creation* K.M. Towe's argument (*Nature* 1975, 257, 115) that continuous creation cannot be true because if it *is* (in the Dirac form, *viz.* that atom creation is proportional to atoms already present) new atoms will have hidden themselves in ancient silica crystals which ought to have enlarged and/or changed density as a result, has been challenged (*Nature* 261, 438) and Towe agrees with the criticism. The new matter (in amount, 40% of the old), it is argued, cannot be interstitial. But it must be there — attached to the outside of crystals if not to the inside so the grain size of older rocks ought to have increased. Has it done so? Seemingly not — but the point must be kept in mind even though it seems bizarre.

### NOISE AND HELPFULNESS

Our world is becoming extraordinarily noisy. That excessive and long lasting noise exerts a deleterious influence on man is common knowledge, effects varying from interference with concentration to ear injury and increasing deafness when noise levels are excessive. However, it is not usually considered in connection with ethical questions.

That helping one another is a common Christian duty is a fact which no one doubts. K.E. Matthews and L.K. Caron of the University of New Hampshire have investigated the effect of noise on helpfulness. (*Jour. of Personality and Social Psychology*, 1975, 32, 571)

In one type of experiment they conducted, an experimenter drops a pile of books when getting out of his car and walking to the adjacent house. This was done in relative quiet but also when a noisy 87dB lawnmower was at work in a nearby garden. The books were designedly dropped when someone was passing in the street and the experiment was repeated many times. When the street noise was

normal one fifth of passers-by helped to pick up the books but this dropped to a tenth when the lawnmower was at work.

In a repeat of the experiments in which the experimenter pretended to have a broken arm and wore a plaster cast on his right arm, 80% rushed to assist him when the noise was off, but only 15% when the noise was on. This is interpreted to mean that in noisy situations it is much harder to keep our eyes open to the needs of others — a point Christians might well bear in mind.

### PARANOIA IN INDIA

In the past, European specialists, working in third world countries, have often made discoveries, chiefly in the medical field, of great benefit to the peoples of the countries concerned. As a result it has come to be assumed, perhaps, that they have some sort of right to undertake investigations of this kind.

A case in point is an investigation of mosquito control in India undertaken by WHO (World Health Organisation). Unfortunately it dawned on certain minds in India that researches of this kind, financed by the USA, might have a "vital and direct bearing on biological warfare" and for this reason the Indian government put a stop to a recent project. *Nature* refers to this as an "appalling misunderstanding on the international science scene" and to the Indian arguments as a "chain of logic tenuous in the extreme" (*Nature*, 256, 355).

The project involved releasing large numbers of male mosquitos (the males do not bite or carry disease), previously rendered infertile, to mate with the indiginous females. Both radiation and chemical methods were used to render the males infertile, but the Indians were fearful that the chemicals used might be carcinogenic and also that one of the species of mosquito under study might transmit yellow fever. Perhaps the USA was even planning to transmit yellow fever in India, they conjectured, and in any case how would the English react if a team of foreign specialists were to release "new strains of pigeons in Trafalgar Square"? (*New Scientist*, 9 Oct. 1975)

### ANALOGIES AND IDENTITIES

In a commentary on Revelation (*I Saw Heaven Opened*, IVF, 1975) the author, Michael Wilcock comments on the subject of analogies in a way that we have not seen before.

The question arises in connection with the groups of apparent explanations of the symbols that are used by St John in the Apocalypse. Every now and again, but in a most erratic manner, these 'explanations' recur: the seven stars are the angels of the seven churches, and the seven lampstands are the seven churches" (1:20); seven torches of fire which are the seven spirits of God" (4:5) etc.

Mr. Wilcock suggests that our difficulties stem from the fact that we tend to equate mysteries with puzzles. "As for the puzzle of the seven lampstands, the solution to the puzzle is that they are seven churches." In fact what the passage may mean is, "Here is the Mystery of the Seven Lampstands. I call it the 'seven lampstands' although of course it could equally well be called 'the seven churches', since both expressions refer to the same thing".

Let us quote ( 154) "It will be seen that on this view 1:20b is not strictly an identification. If it were, John — or the angel — would be talking about a symbol, 'lampstand' which represents a reality 'church'. This, we begin to see, may be a misunderstanding, based probably on the unspoken assumption (which we know is not correct) that 'mystery' in verse 20a means 'puzzle', and that 'lampstands' = 'churches' is the answer to the puzzle. But what the angel is saying when he identifies 'lampstand' with 'church' is not that one is a symbol while the other is what the symbol 'really' means. He is saying that here are two things which correspond to each other, being *equally real from different points of view*."

Other examples from the Apocalypse are given but perhaps the most interesting illustration comes from St John's Gospel, chap. 6:32f. Christ is the true bread, the true vine and so forth. This means that He is *real* bread since only He can satisfy the *real* hunger of man. "But if you assent to that, what are you saying? Picture the Last Supper: at the table sits Christ, on the table lies a loaf. Which is *allegorically* bread and which is *really* bread? The answer is obvious, we might think. But the unexpected answer of John 6:32 is that the real bread is the person, not the thing!... the quality of 'being bread'... belongs to the loaf on the table only in a secondary derived sense." The same principle applies to marriage. John in Rev. 21 sees the real bride and not the symbol. As Paul makes plain, human marriage is the symbol of the relation of Christ to His church. A similar view was expressed by R.C. Trench (*Notes on the Parables of Our Lord*, 1877 p 15), the "'Kingdom of God' is not a figurative expression, but most literal: it is rather the earthly kingdoms and the earthly kings that are figures and shadows of the true".

## JULIAN AND THE TEMPLE

S.P. Brock. (*Palestine Expl. Qtly.* 1976, 108, 103) has found a letter previously overlooked, written c.400 AD by Cyril, bishop of Jerusalem, describing the events of 19 May 363 AD. Julian the Apostate wanted to rebuild the temple at Jerusalem in order to please the Jews, displease the Christians, and nullify our Lord's words (Mt. 24:2). The day after the workmen started to build the earth quaked and fire belched forth from the foundations killing many. In addition the clothes of bystanders (in this account, the unbelievers) were marked with crosses — which must also have seemed a great miracle to the bishop.

The entire episode was often cited as a case of divine intervention by later Christians. That something unusual happened cannot be doubted: it is attested even by Marcellinus the pagan historian who accompanied Julian on his visit to Palestine, and there are other accounts.

In later times the crosses on the clothes were discussed *ad nauseam*. W. Warburton in his *Julian, or a Discourse Concerning the Earthquake* (London 1750) suggested that lightning implanted the crosses. Athanasius Kircher (1601-1680) cited a similar case c.1660, after an eruption of Vesuvius. "The mineral vapours were, by the texture that belongs to linen...easily determined to run along in almost straight lines, crossing each other, and consequently to frame spots resembling, some one, and some another kind of crosses" (Warburton p.125.) Sensible enough! Boyle and others cited other cases. Warburton drew the moral that we ought not to be too ready to laugh at what seems like an old wife's tale! It was quite the fashion to do so in his day and he wrote his book to refute the prevailing tendency. He starts; "A sovereign contempt for the authority of the Fathers...is what now-a-days makes a Protestant in fashion."

## SMELL

The sense of smell is, perhaps, the most mysterious of the senses. We know that nerve fibres in the nose as elsewhere are either activated or not activated, there is only one kind of message they can carry. Yet the sense of smell enables us to distinguish an enormous number of different odours; and not different only, but often extraordinarily characteristic.

Many theories have been proposed. Are there particular sites in the nasal membrane which react to molecules when their shapes and sizes are just correct? ... does the brain recognize a code so that different combinations of yes/no tell it to smell say ammonia or cacodyl? ... are we dealing with absorption bands in infra red radiation? ... Is it possible there is a limited number of definite pure smells and the others are mixtures - as in colour television where all the different hues can be reconstructed by mixing three in varying proportions (the simplest theory of all!).

This last theory seems ruled out. By arranging a large number of smells in linear order each one placed next to the one it resembles most closely, it has now been found that there are no sharply defined zones corresponding to primary odours (Schiffman, *Science* 185, 112). However, no other theory is satisfactory either and it is pointed out that the number of theories is now actually increasing with time rather than diminishing (*Nature* 251, 97)!

An extraordinary feature of smelling is the way it links with aesthetics. Many smells are pleasing, even beautiful in their way: others are neutral and others again revolting. The variety is enormous - at least 50,000 smells are distinguishable and the number is probably much higher than this. Each sensation is elicited by a minute quantity, sometimes it seems only a few molecules, of a chemical which stimulates nerve fibres. Another wonderful feature of smell is that a smell we have not smelled for many years, perhaps, will suddenly evoke long-forgotten memories.

Smell shows us how incredibly complex the brain and mind must be. We seem capable of receiving an almost limitless number of different sensations. In this connection the Editor will never forget the sensation caused by the cutting of an eye muscle during a surgical operation - intense, hardly to be described as painful, yet quite unlike any other sensation ever received in his life. That was thirty years ago.

## MEMORY

For the Christian memory is a subject of cardinal interest and importance. There can be no reward for goodness or judgment for sin, either in this life or in the life to come, without memory. But how is memory stored and how can it persist beyond the destruction of the brain? These are questions we cannot even



begin to answer, but we must try to keep abreast of work in the memory field.

Colin Blakemore devoted the whole of one of his Reith Lectures (published in *The Listener* 2 Dec. 1976 705-708) to memory. The facts are not in question but it may be said at once that they are at least as puzzling and seemingly self-contradictory to the materialistic scientist, as to the Christian.

Memory is of two kinds (*at least* two kinds): short term and long term. We remember say, a telephone number, for a minute or so but after that it is lost beyond recall — unless, of course, we make a conscious effort to put it into our memory store. After that it may remain for a long time, even for life.

The work of Penfield and others shows that the structure called the hippocampus in the temporal lobe of the brain is connected with long term memory. Electrodes used to stimulate the area bring old memories to mind. Slight movements of the electrode change the memory. It seems as if a vast store of old memories is located in this centre from which they can be jerked out, as it were, by electrical stimulation.

What happens when the hippocampus is removed? In 1953, believing that the bad epileptic seizures of his patient (called Henry M.) might be so cured, a surgeon removed the hippocampus on both sides of Henry's brain and the patient was subsequently kept under psychiatric observation for many years. Henry's short term memory is seriously impaired: to remember even a simple number he must resort to fantastic and complex tricks to aid retrieval. In the ordinary way, every moment of his day is fresh: the ability to plant memories in his long term store has gone. Even the memory of a few years prior to 1953 has failed to survive. He still suffers the same grief every time he is told of the death of a close relative who died in 1950. But oddly enough he still remembers very old memories and habits which date from his early years. So some memory must be possible without the hippocampus.

In large measure the mystery of our bodies is resolved when we discover that they work like the machines which we make: limb movements are explained by levers; the heart is a pump; kidneys are like filters, the pH of blood is buffer-controlled, etc. But it is hard to find satisfying analogies for memory. Despite the very limited resemblances, it is most unlike paper on which we write, or the ferrite cores of a computer memory, or even a hologram from which an entire picture is retrievable even after

a part is destroyed. (Compare K. Lashley's early experiments which showed that loss of memory or habits learned by rats depends on the amount and not the precise location of the parts of the cortex destroyed). All analogies with man-made retrieval systems seem to fail.

What *is* memory. In what language is it coded? Does remembering involve the synthesis of "specific chemical molecules in the brain, the structure of each molecule representing a remembered event?" Is it stored as a sequence (as in DNA or a protein) or a shape (as in proteins)?

In 1968 George Ungar made the startling claim that memory is encoded in specific molecules. Extremely unsatisfactory experimental support for this view was forthcoming (*New Scientist* 8 June 1972, p.546; 8 Mar. 1973; *Science* 176,942 etc.).

How could this be possible? A.R. Luria (*The Mind of a Mnemonist*, 1969) describes the case of a man almost incapable of forgetting anything - his great difficulty lies in learning how to forget the trivia that clutters his mind. The number of 'bits' of information he stores must be prodigious. A young woman with photo memory could look at a visual pattern of up to a million dots, and hours, or even days, later she could recall this eidetic image and combine it with another pattern shown to the other eye, the two patterns together producing a picture. *Nature* 1970, 225, 346.

To store memories, with their bewildering variety, large molecules are called for. But, apart from nucleotides (amongst the most unchangeable of chemical substances) and proteins, (which spell out, in translation, the same sequences as DNA and RNA) where are they to be found? Such large molecules could not escape detection. The chemical theory deems impossible.

Can memory depend on a changeable "circuit of nerve cells". Here Blakemore did not elaborate. But the difficulties seem immense. Why does a particular criss-cross of nerves code for my childhood memory of my father holding a cage-full of rats, my desire to handle them and his consequent rebuff? If these events set up complex connections in my brain, how do I *remember* the complex code involved?

In short, a materialistic theory of memory seems difficult to hold. Blakemore suggests that the hippocampus may be involved with retrieval of memory rather than memory itself. In that case perhaps everything is stored in long term memory and effort to remember is effort to learn how to use the complex mechanisms of

the hippocampus to retrieve otherwise 'forgotten' memories. The subject is difficult!

Much recent work confirms that sentences are remembered primarily in terms of underlying ideas rather than words. The sense of a sentence is remembered rather than the syntax. We may forget if a specific element of meaning was conveyed by a noun or a verb: recall may involve the creation of a new differently worded sentence (See *New Scientist* 2 Oct. 1975 p.6 *Nature* 251 704 etc.). No one has suggested how an *idea* might be encoded in a materialistic world!

### ORIGIN OF LANGUAGE

There has been a good deal of discussion in late years as to whether Neandertal man could speak. P. Lieberman *et al* (1971-75) have argued that he was unable to do so. D. Burr (*Man* 1976, 11 (1), 104) after comparing measurements of three groups representative of modern man, Mesolithic man and Neandertal (two specimens) man, can find no substantial difference. Measurements were chosen to be those best representative of the vocal apparatus. Burr concludes that Neandertals must have possessed the gift of speech. Many, however, would doubt if this kind of evidence can settle the question. It is not enough that man is anatomically able to make language noises, he needs to be taught to speak. Wolf children brought up by animals in the wilds do not know how to use language.

Discussion also centres on the ability of non-human primates to speak, or at least learn languages. There is much haziness as to the definition of language but it seems that these primates do learn to use a communication method and even to show some appreciation of the structure of sentences - for example by being able to alter the word sequence but not the meaning of a sentence. However this is the result of teaching: there is as yet no evidence that it is of use in the wild.

Man's ability to communicate by speech enormously enhances his power to adapt to his surroundings and to develop technical skills. If various races of men over hundreds of thousands of years had been gifted with speech, why were they so unable to develop civilisations? Style in axe-heads, cave paintings etc. persisted over enormous periods with little change. This reminds us of the situation among the social insects where communication is possible but not speech. It would be easy to think that speech only started eight or ten thousand or so years ago, at the end of

the last ice age, as was suggested by Sir Richard Paget (*Nature* 1945, 156, 209). But it is very hard to see how the matter could be finally settled one way or the other. The early chapters of the Bible probably suggest, though they do not actually say, that man was taught to speak by God who, appearing in the form of man, was Adam's companion in the Garden of Eden. But of course not all Christians take the passage literally.

There is an interesting chapter (Lecture 7) on the origin of language by A.J.P. Kenny in the Gifford Lectures *The Development of Mind* (Edin. UP, 1973). Non-verbal communication, Kenny points out, is widely used both by man and animals, but there is no evidence to support the view that it somehow developed into verbal communication. Kenny argues that Chomsky's view as to the innate grammar structure in the human brain (or mind) is incompatible with natural selection. But even if Chomsky is wrong the difficulties are not relieved. Language involves the use of symbols but these must be used in accordance with conventional rules. Now rules can be broken; for there is no law of nature that our utterances mean what they do. Moreover, when a rule is violated there is no implication that it was wrongly framed. To use speech at all, a man though he may be unconscious of the rules, must distinguish between correct and incorrect applications of the rules. A language-using individual in a society where there is no language is at no advantage, so that natural selection is not helpful in discussing the origin of language. Unlike maze learning, language could not originate in trial and error learning.

In the discussion which followed Waddington remarked that evolutionary biology is full of hiatuses. Worms, insects and invertebrates appear suddenly in the record of the rocks: intermediates between phyla are found occasionally but are very rare. So we must not feel too disappointed if an intermediate between prelanguage communication and speech is missing.

But there was a difference in principle, replied Kenny "which had not been faced up to. For example, in birds the intermediate forms which theory demands ought to be there and might one day be found." "The special difficulty with regard to the origin of language is the difficulty not of providing an intermediate case, but conceiving exactly what is an intermediate case between linguistic and non-linguistic behaviour."

An interesting point was raised by R.J. Andrew in a review of John Napier's *Roots of Mankind* (1971) (*Nature* 236, 272.) If chimps could talk, it is surely highly significant, he said, that they do not. Contrary to popular ideas, vocal language is not physically out of the question for non-human primates: "I have myself isolated a full range of vowel sound from baboon grunts" says Andrew.

The use of symbols is not, of course, enough to ensure language. A good illustration is afforded by the honey bees who cannot communicate the fact when honey is vertically above them, "There are undanceable truths..." as J.B.S. Haldane put it. (Letter to B. Russell, 5 Nov. 1953. BR's *Autobiography* 1975 ed p.585).

### STAR OF BETHLEHEM

The star of Bethlehem might have been a nova but it seems that there was no nova at that time. Was it then the planet Venus? Probably not, for the Magi would have been familiar enough with the appearance of Venus, the morning and evening star. Dr. D.W. Hughes (*Nature* 1976, 264, 513) of Sheffield University thinks it was the rare triple conjunction of Jupiter and Saturn when these two planets come close together three times within half a year. This occurs but once in about 120 years and so but once, if then, in a life time and it happened in 7 BC which is regarded by many scholars as the most probable date for the birth of our Lord.

At conjunction the two planets, appearing very close together, appear like a single very bright star. Babylonian tablets found at Sepharvaim show that the conjunctions, which took place on 29 May, 29 Sept and 4 Dec. had been predicted. In ancient astrology Jupiter was a royal star and Saturn was the protector of Israel while Pisces was associated with the Jews. The Magi might then have started their journey of 550 miles across the desert after the first conjunction, the second would have confirmed their expectation when they were near Jerusalem and, after meeting Herod, the third pointing to the South would have led them to Jerusalem.

Other theories are, of course, possible, especially as the date of birth of Jesus is not absolutely certain. A comet appeared in 5 BC which may be relevant, it is also possible that some purely terrestrial phenomenon was involved.

## DESERTIFICATION

An article in the *Times* (by Pearce Wright, 22 Feb. 1977) gives a vivid account of the encroachments of deserts. Along one frontier of 1200 km in Central Sudan the desert is now advancing at 5-6 km a year. At the village of El Bashiri the waters of the oasis supply the needs of the inhabitants together with 250,000 animals. Two decades ago Saharan sand was 150 km to the north, "now a semi-circle of glistening dunes are poised on the edge like a golden tidal wave about to break over the beach". And so with many other oases.

Desertification is man-produced — over-grazing and irrational cultivation play their part. Today the rise in price of petroleum products (bottled gas, Kerosene) is forcing third world villagers to return to wood, charcoal and dung, the traditional fuels. The cutting of woodlands greatly increases the pace of desertification. Arab states are about to spend billions of dollars of oil money to reclaim some areas of desert but will it be a case of too little too late?

The UN plans a conference on desertification this year (*New Scientist* 14 Oct. 1976, p.108). The planting of suitably deep-rooted trees seems to offer the best hope but ambitious programmes can be disappointing. By 1963 the Chinese had planted 70 million hectares with trees around the Gobi desert, but the survival rate of saplings was only 10%. In Ethiopia villagers, reckoning they have little to gain in their feudal society, have often quite deliberately planted seedlings upside down.

## THE DEATH CAMPS

Terrence des Pres's *The Survivors: An Anatomy of Life in the Death Camps* (CUP 1976, 218pp) tells a story of terror and suffering which has been told many times before, but hardly better.

Apart from the main facts, sometimes almost too horrible to print, several points of Christian interest emerge in the discussion.

Firstly, the author is perplexed (p.vi). How best can he describe the horrific ways in which men treat one another? According to Tolstoy and Hemingway, a stance of detachment, cold

and factual, generates an irony so virulent as to lead to cynicism and despair. But when, on the contrary, feeling is allowed to enter freely, the agony of millions is reduced to a few moments of self-indulgence. Only a quasi-religious language of ultimate concern will serve, says the author. But we may wonder if he is fully successful. Preachers and Christian writers down the years have felt a similar dilemma. How shall we speak of God's judgment? To the cynic hell is a joke: to one depressed, fiery gospel preaching which wallows in judgment talk can lead to despair. It is not easy to know how best to speak.

Why were the incredible cruelties of the Russian and German camps perpetrated? Franz Stangl, commandant of Treblinka, was questioned on this very point by Gitta Sereny (p.61)

G.S. Why, if they were going to kill them anyway, what was the point of all the humiliation? Why the cruelty?

F.S. To condition those who actually had to carry out the policies. To make it possible for them to do what they did.

Inmates of camps were first reduced to stinking objects of disgust. Long deprived of latrines and water with which to wash, killing them proved easy enough.

There is an interesting page (p.48) on the value of international protest. For many years the British Government with inadequate support from France and Russia, sought to secure the rights of Armenian Christians, who had repeatedly suffered from periodic pogroms. In 1915 when Turkey was lined up with Germany nothing could be done. The Turkish government proceeded to annihilate all Armenian Christians: villages were burnt, the inhabitants killed or driven into inhospitable deserts, and left to starve. A million Armenians perished, but with the war raging international horror was minimal and a few years later Turkey pow-wowed with other countries in the League of Nations as if no crime had been committed. As a result, when, in WW2, Hitler proposed the genocide of the Jews he reckoned that world conscience could be safely ignored. "Who, after all" he asked his General Staff "speaks today of the annihilation of the Armenians?" If he did to Jews what Moslems had done to Christians it would soon be forgotten, he reckoned. As J. Ellul has stressed so strongly, Christians have a duty to denounce wrong irrespective of private advantage or political issues (See this JOURNAL 100, 299).

## SHORT NOTES

*Solar Systems.* Despite much effort, attempts to discover stars with planetary systems have so far failed, the only exception being the long known Barnard's star which is believed to have large planets comparable to Jupiter and Saturn in orbit. Several new techniques are now available (*Icarus* 27,1, 13, *New Scientist* 25 Mar. 1976 etc.) and the search continues. George Gatewood (*Icarus* 27, 1) points out, however, that the sun is still the only star known for certain not to have a stellar companion and that single stars are rarer than once supposed. Planets associated with double stars would be unsuited for life. (See also this JOURNAL 102,107).

*The Loch Ness Monster* continues to feature in the news, and several new books on the subject have appeared. The best appears to be that by Dr. Roy P. Mackal of the University of Chicago (*The Monsters of Loch Ness*, 1976, MacDonald and Jane's £4.95; Futura £1.50) who treats the subject critically and is sure there is something there. Just possibly, however, it is a colony of giant eels.

*Noah's Zoo.* In an article appearing in *Bible Science News Letter* (July 1976) Dr. T.V. Commen of Illinois, asks how it is that (assuming Noah's Flood was world wide) pairs of animals from thousands of miles away made their journey to the ark. For animals not living in the area the journey must have taken years. How was it done? He makes the astonishing suggestion that Noah was already in charge of a large zoo from which the animals were selected.

*Tibetan Buddhism.* Neville Maxwell has recently visited Lhasa in Tibet (*Sunday Times* 14 Nov. 1976) He finds Lamaism now virtually extinct and the Potala converted into a museum. "The imprint of religion...has disappeared. The prayer flags... which used to flutter everywhere are gone; prayer-wheels which people would spin as they walked or sat are no longer seen". In 1955 a Westerner never met a Tibetan who was not devoutly religious: today, "no one to whom I spoke admitted to religious practice or belief". Asked why he had abandoned his religious practices a Lhasa tailor said: "Well, I had been praying all my life and it had never done me any good...I'd often been sick and the monks hadn't cured me. But when the reforms started my life got better. There didn't seem much reason to bother with religion: I gave it up".



*TV is Over-exciting.* In a recent book (*The Pre-School Book*, Sedgwick and Jackson, 1976, £3.50) the author, Brenda Thompson, blames TV for many of the problems experienced by teachers. Exciting programmes keep children up too late at night and leave them enervated and emotionally drained. She suspects that poverty, lack of talent and low intelligence may be but minor reasons for poor progress at school. "I really have known children habitually to fall asleep sitting bolt upright. Quite recently I watched with fascinated horror as a six-year-old boy simply keeled over, having fallen asleep standing up. We have come a long way from medieval times when even Bible stories at bed time were proscribed as being too destructive of sleep - for grown-ups as well as children. (See B. Smalley, *The Study of the Bible in the Middle Ages*, 1941) One wonders how the modern child, his mind emotionally drained and over-excited, can ever learn to pray in earnest.

*Earth's Early Atmosphere.* R.T. Brinkman (*Jour. of Geophysical Res.* 1969, 74, 5355, see this JOURNAL, 103 161) showed that the theory of a late build-up of oxygen in the earth's atmosphere is almost certainly wrong. A similar conclusion is reached by J.C.G. Walker, L. Margulis and M. Rambler (*Nature* 1976, 264, 620) who, after re-examining the evidence afforded by many sciences, come to the conclusion that the atmosphere must have been rich in oxygen long before the start of the Cambrian period when multi-cellular organisms first appeared. They suggest that the oxygen was produced by blue-green algae which appear as far back as 3,000 m. years after which the earth's surface was well-protected from UV light by the ozone layer. The long delay in the onset of the Cambrian development is attributed to the time taken for the complex sexual reproductive mechanism to evolve - but this is pure conjecture.

*Pain* (see this JOURNAL 102, 176; 103,1) Later work (*Nature* 263, 240; *New Scientist* 21 Oct. p.159) has revealed the existence of several enkephalin-like substances, one of them 50 times as potent as morphine.

*Witchcraft.* A report from Johannesburg (*Times* 24 Jan. 1977) states that African police arrested 155 Africans suspected of complicity in burning alive 14 people for alleged witchcraft in the homeland of Lebowa.

*Archaeology of Bible Lands.* Despite the beauty of their photography Magnus Magnusson's BBC 2 programmes given under this title have been much criticised, both for their style and for their one-sidedness at least with regard to the earlier period. Donald Wiseman comments on Magnusson's summary dismissal of evidence which points to Abraham, Joseph and Moses as historical figures. MM made no mention, for instance, of the Brooklyn papyri which confirms that Asiatic and Hebrew slaves were sometimes given high positions in Egypt. The views and findings of many archaeologists were simply ignored (*Third Way* 1977, 1(3), 11). In a longer article (*Life of Faith*, 19 Feb. 1977) Kenneth Kitchen of Liverpool University gives a detailed list of many of the omissions and errors. Magnusson's "expertise is in the twilight of Scandinavian legend" with the result that he spots folklore and legend where a knowledge of Ancient Near Eastern textual resources would have led to a very different interpretation.

*Noah's Ark.* *Bible-Science News Letter* (Sept. 1976) contains an interesting account of supposed sightings of Noah's Ark on ice-covered Mount Ararat. Three of the accounts seem to agree well as to details and comparison with aerial photographs of the mountain point to a locality where the Ark might be found in the summer time when some of the ice melts.

*The Great Pyramid.* It has long been believed by some Christians that the Great Pyramid is the altar in the midst of the land of Egypt mentioned in Is. 19:19 and that it tells prophetically the course of history. Now Edward Kunkel has come up with a new theory. Finding it difficult to imagine how the ancients managed to move the great stones of which the great Pyramid is built, he suggests that they used a complex system of canals, locks and barges. The 15-40 ton stones were floated on barges from quarries up river and were then lifted up the sides of the structures by a stairway-like series of locks, much like that in use at the Panama Canal. For this purpose it was necessary to pump the water to the higher levels, and the interior chambers of the pyramid are parts of the hydraulic ramp pump. Rooms thought to be tombs were air-compression chambers and the hallways were pipes. Kunkel is said to have built and patented a scale model of the pyramidal water works and to have translated the hieroglyphics in the King's Chamber and found that they consist of directions for building the pump. If ever there were mummies in the pyramid they were put in as an afterthought. (*Bible Science News Letter*, Dec. 1975. The source reference is not given.)

*Ocean Pollution.* New forms of possible or actual pollution keep turning up with bewildering frequency — and several have been noted in back issues of this JOURNAL. A recent issue of *Biological Reviews* contains an article on "The Pathology of Marine Algae" by J.H. Andrews (1976, 51 (2), 211-253). It surveys the all-too-little known subject of diseases of sea weeds and marine plankta, a considerable section being devoted to diseases caused by man's activities. In most instances such diseases are of little or no importance, but the fungal 'red wasting disease' of *Porphyra* ('nori') which is used for food in Japan (1974 production 250,000-300,000 tons) has sometimes destroyed entire crops in some areas. Little is known about the effects of pesticides and related compounds on marine algae but mutations caused by dumping of radioactive wastes might have serious consequences. The possible dangers of polluting the ocean seem, however, to be endless.

*Psychology and the Public.* In an interesting article in *Spectrum* (1976, 8 (2), 4) Professor Malcolm Jeeves comments on the way psychology is presented to the public. He has nothing to criticise in the way psychological work is written up in the journals, he says, for hypotheses are suggested tentatively only and are never presented dogmatically. But "by the time they are popularized and applied tentative results become established dogma. Fact has become confused with fiction". And again, "What is most disturbing is the way in which extrapolations once made so readily become established dogma". He illustrates the point by taking four lines of research, each of which has been distorted in its presentation to the public.

*Darwinian Fitness.* J. Krebs and R.M. May had an interesting article on the evolution of altruism in a recent issue of *Nature* (260, 9). They point out that the argument is often used that altruism cannot have been evolved by natural selection because, if an animal gives its life for others, it cannot pass on its genes to its offspring. But the argument is wrong, because it is the fitness of genes which matter in evolution, not the fitness of an individual. Full siblings share on average 50% of their genes by descent, nephews and uncles 25%, first cousins 12.5, and so on. If a man dies to save his siblings and more than two of these survive his altruism increases the fitness of the genes, in the Darwinism sense. Therefore altruism might have evolved. This argument seems valid enough. It leaves open, however, the cardinal issue of how altruism arises. It shows, merely, as with many similar arguments, that if there is a gene for altruism which occurs occasionally in a species, Darwinian natural selection might possibly account for an increase in its incidence.

*Nature a Person.* The habit of personifying nature was well illustrated by what Professor Henry Hill, discoverer of sunquakes, said during a recent encounter with the *New Scientist*. The oscillations of the sun were first observed in 1972 but were not understood. "Then we saw the oscillations again in 1973. 'Nature was talking to us in a big way but we weren't listening yet'" (*New Scientist*, 20 May 1976).

*Saint Januarius.* (See this JOURNAL 103, 63) 10,000 people packed the cathedral at Naples and the square outside on the morning of 19 Sept. 1976 and just after 10 o'clock Cardinal Ursi, the Archbishop of Naples, announced that the saint's dry blood had become liquid. It is suggested to us in a letter (from Dr. E.J. Dingwall) that perhaps in May, when the miracle failed to take place, a junior priest, who did not know how much shaking was required for the thixotropic contents to assume the liquid state, had been holding the phials. The Cardinal, however, told the congregation that the Saint's refusal to perform his usual miracle in May was connected with the earthquake in Friuli which followed a few days later. Again, what sort of Christianity is this? (BBC News 19th and *Times* 20 Sept. 1976).

*Turban or Biretta?* How did Eastern Christianity and Islam get along together before the final fall of Byzantium? There was intense rivalry, of course, and endemic warfare too, for Byzantine emperors thought they were viceroys of God and Caliphs reckoned they were viceroys of Allah. But at a symposium convened to examine the matter (reported in the *Times*, 31 May 1976) Sir Steven Runciman, the historian, told how diplomatic relations were always conducted with the greatest respect, and overall there was much co-operation. The Christians, indeed, regarded Islam not as a separate religion but as a wayward Christian sect. Both respected not only their biblical but their Hellenic heritage and the Christians felt that they had much more in common with Islam than with Papal Rome. Only a few months before the final fall of Byzantium its last ruler is reported to have said: "Sooner the Sultan's turban than the Cardinal's hat".

J.A. WALTER

SOCIOLOGY AND RELIGION — ARE THEY LOGICALLY COMPLEMENTARY?

Molecules do not listen or change their ways when chemists talk about them, but feed-back is never absent when sociologists talk about people. This is but one of the differences between physical science and sociology, a subject ably surveyed in this paper which examines whether sociological and other kinds of knowledge about man can be thought of as complementary.

The complementarity of scientific and religious statements has been frequently argued (e.g. MacKay 1965, 1967, 1974a,b). However, 'complementarity' philosophers do not claim that all forms of knowledge are complementary with religious statements. There is reason to suspect that, since God has created one world, forms of knowledge should have some coherence at least one with another, but the chaotic effects of sin suggest that all may not be totally coherent, especially in the world of man as opposed to the world of nature. It is therefore worth looking in some detail at the kinds of statements made about man and society by social scientists and examining the bearing of such statements on scientific, personal, and religious language. I will focus in particular on sociology, partly because it highlights many features of the social sciences generally,<sup>1</sup> and partly since it is the discipline with which I am most familiar.

MacKay's definition of complementarity goes as follows (1958: 114-5; 1974b:242):

Two (or more) descriptions may be called logically complementary when (a) They have a common reference, (b) Each is in principle exhaustive, (in the sense that none of the entities or events comprising the common reference need be left unaccounted for), yet (c) They make different assertions, because (d) The logical preconditions of definition and/or use (i.e. context)

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I am indebted to Donald MacKay, Charles Martin & Godfrey Williams for comments on earlier drafts of this paper.

of concepts or relationships in each are mutually exclusive, so that significant aspects referred to in one are necessarily omitted from the other.

To sum up my argument, I will maintain that (d) frequently does not distinguish sociological from other descriptions even if criteria (a) - (c) are met, and so sociological language cannot technically be described as logically complementary with other forms of language. This is important to understand if we are to begin to clarify the relation between sociological and religious statements about man. I arrive at this conclusion by examining the relation of sociological language to the oft-mentioned distinctions of observer vs. participant language, and normative vs. indicative ('ought' vs 'is') statements.

### *Observer Language and Participant Language*

*The logical limits of science:* Central to the analysis of scientific and personal/religious language as complementary is the identification of the one as the language of observers and the others as the language of participants. This is one of the ways in which scientific and personal/religious languages are claimed to be mutually exclusive in their use. Thus:

In a science you are keeping yourself out of the picture as much as you possibly can. In an arts subject you are throwing yourself into the picture as much as you possibly can. (Ingram 1965:85).

This distinction is logically necessary if science is to make statements of prediction. MacKay (1955:16) follows Popper in maintaining that the scientific attitude must be one of withdrawn detachment from the object of study:

The point is this, that if you have a predicting, calculating mechanism or human being, such a predicting mechanism cannot possibly predict exactly the future of any system which includes itself. The reason is that if you try to make it allow for the effect of its predictions on the system, it needs to know the prediction before it can calculate what effect this will have, and you simply set it chasing its own tail.

MacKay has drawn out some of the implications of this in his argument on logical indeterminacy - that predictive, causal, objective, scientific statements do not logically exclude freedom of choice (1967).

Thus what distinguishes scientific from other kinds of language is that the scientist takes the stance of the detached observer. Now all this has to do with the *logic* of science; when we come to look at the *practice* of science we find things a bit more blurred. MacKay is at pains to point out that detachment can be hard to achieve even when we are observing objects other than ourselves, but becomes even more problematic when we observe society (e.g. 1974a:34-6 1955:17). If the study of society is to be termed a social *science* then it must be a different kind of science from that which makes exact predictions. In several writings MacKay has pointed out the limits of science as a method of study when it comes to studying man (e.g. 1963:165-6), and it is essential that we are aware of these limitations in an age (perhaps now fast slipping away though?) in which science is hailed as the most important form of knowledge. Complementarity has usefully enforced linguistic apartheid in past decades when deterministic science was attempting a take-over bid. I suggest in this paper that we now need tools for *integrating* languages if we are to comprehend the nature of sociological talk, which I argue necessarily involves both scientific and value-laden elements.

*The sociologist as participant observer:* It is an oversimplification to split language up into participant language and observer language. MacKay (1955:15-16) notes an intermediary form:

...an observer relationship which is not one of impersonal detachment; it is what you might call the relationship of *observer-participant*. For example, think of a father watching the first steps of his small son. He is an observer, but he is not detached. At the sight of his son's tumbling his reaction is not to predict the path which the child's body will take but to leap forward and catch him. He is an observer-participant: he still acts and feels as part of the situation which he is observing.

This is in fact a good characterisation of some sociological perspectives - to observe and describe society leads one on to question whether what one is observing is desirable and, if not, how one may intervene in order to change it.

I will now elaborate on some of the ways in which the sociologist is an observer-participant. Remember, the aim of this review is that, if it can be shown that *both* observer and participant language is inevitable in empirical descriptions of society, then sociological descriptions are different from, yet have certain similarities with, both scientific (= pure observer)

and personal (= pure participant) statements – thus sociological language and these other languages are not completely mutually exclusive and so cannot qualify as strictly complementary.<sup>2</sup>

The sociologist studies society – something he is part of, involved in; something he has been socialised throughout his life into seeing in particular ways, ways which are bound up with his whole lifestyle and identity. His vested interests in believing society to be of such and such a form do not just involve his pocket but his whole personality. The sociologist is not a god transcending the world of human beings, and his attempts to lift himself out of society and be like God are bound to fail. Those, like the early 19th Century French sociologist Auguste Comte, who have tried to do just this appear to us as we look back at them to be very much creatures of their own times. So the sociologist cannot be a scientist if this means he has to cease being a participant and to extract himself from society so that he may observe without bias. On the other hand the sociologist wants to say something more than the novelist and the artist for he does not want merely to add to the pile of personal views about society.

This problem has not been solved by sociologists, and there are at present several schools of thought on the matter. What does seem clear though is that it will not be solved simply by putting sociology into one of the two slots of natural science or art.

What then characterises sociological views of man? Firstly, the sociologist should be aware that his analysis is not neutral but socially conditioned. This does not mean that his analysis is causally determined by his social position but that it was not, and never could have been, worked out in isolation from the social environment which constitutes his very being. The sociologist is

a definite individual in his real relation to other individuals and groups, in his conflict with a particular class, and, finally, in the resultant web of relationships with the social totality and with nature (Horkheimer 1972:211).

The sociologist recognises that he is not an individual in society such that the two can be separated at will, but that he is a person-in-relation (Niebuhr 1956). Abstract the person from the relations and he ceases to exist. This distinguishes sociology from natural science if the scientist claims to be able to separate himself from his data; also from the artist who feels no need to be self-reflective about his position in society.



Secondly, the sociologist should not only be aware of the social influences on his sociological analysis, but should also attempt to monitor them actively and to clarify them. It is not his duty to eradicate them, for that is impossible, but to state what they are. In this respect he is like the logician who, rather than pretend he has no initial assumptions, states what they are at the outset. The similarity ends at this point though, for the sociologist's social position and interests, unlike the philosopher's assumptions, do not have a simple determinate effect on his subsequent argument. Nevertheless, the sociologist should state what his involvement in his subject is — it's rather like asking members of parliament to state what their financial interests are. It's not that an MP with financial stakes should not enter parliament, but that, if the electorate is competently to judge his political actions and claims, then these stakes should be made public. Thus the sociologist's theories may be judged not only in terms of their internal logic, but also in terms of what is known about his involvement in the subject. We should know the total context in which he does his work; for example, knowledge that he is against communism or that his research funds come from a particular government department may help us to understand why he chose to select certain data for comment and why he interpreted his data the way he did. By itself, this will not enable us to assess the truth of his conclusions, but it may enhance understanding and criticism of it.<sup>3</sup>

This sort of knowledge is important because it is most unlikely (contrast the natural sciences) that we can repeat the sociologist's study by going out and collecting exactly the same data. A prerequisite of the experimental method of natural science is that it should be repeatable and written up so that another scientist could repeat the experiment (though I suspect many scientific reports are not and could not be so written). The scientist abstracts from the infinite complexity of reality by trying to create a situation in which all the known variables bar one are kept constant, and this enables his experiment to be repeatable. The sociologist is not in such a position. Firstly the experimental method is very often not possible. One reason for this may be that the societal event to be studied, if put into an experimental situation, would be altered out of all recognition; an example would be a coronation — unless there is a real monarch being really crowned it would by definition not be a coronation. Indeed this is so with countless social events: rearing children, giving a lecture, making love, dying, praying, breaking the law, all of these if put into an artificial experimental situation which is not real to the participants, cease to bear any close relation to their reality in the real world.

Secondly, the experimental method involves some control over the subject matter, and often the sociologist does not have this right over fellow human beings.<sup>4</sup> The experimental method involves the conscious manipulation of variables; usually the sociologist has no right to play around with people's lives in this way and he has to wait until the variables change of their own accord or he has to search till he finds another otherwise similar group for whom the variable has already changed: hence the value of historical and comparative cross-cultural studies. Thirdly, even were a particular experiment possible, the event studied may never happen again or it may not be possible to predict when it would happen again, and so it is not possible for another sociologist to repeat the study.

There are other ways in which the experimental method is of dubious value for sociology, but I hope to have made the point by now. This is that it is intrinsically difficult to check a sociologist's data; one never quite knows whether, if one had been in his position, one would have collected the same data, or whether the situation has now changed. One has therefore to read between the lines in order to assess the data — and to do this one has to know not only about his theoretical and philosophical assumptions but also his position *vis-a-vis* his subject matter, the reasons for his study, and his political and religious (including atheist or agnostic) commitments.

The social scientist's awareness of an explication of his involvement in his subject matter is not an esoteric contemplation of his intellectual navel by which he does penance for not being able to fulfil the conditions of natural science. It is an inherent part of the process by which intellectual work is made public, thereby enabling criticism from others which in its turn is the only way in which knowledge can be advanced. The position I am advocating is well put by Gouldner (1970:497) in his plea for a 'reflexive sociology' to replace the 'methodological dualism' by which many sociologists have attempted to ape the natural sciences:

Methodological Dualism entails a fantasy of the sociologist's Godlike invisibility and of his Olympian power to influence — or not influence — those around him, as he pleases. In contrast...a Reflexive Sociology believes that sociologists are really only mortal; that they inevitably change others and are changed by them, in planned and unanticipated ways, during their efforts to know them; and that knowing and changing are distinguishable but not separable processes. The aim of the Reflexive Sociologist, then, is not to remove

his influence on others but to know it, which requires that he must become aware of himself as both knower and as agent of change.

The natural scientist reduces the natural world to objects because he wishes to manipulate it in his experiments and control it in his applied technology.<sup>5</sup> If something can be conceived of as an object, determined by specifiable forces, then this gives the knower power over the object. This view of science has generally been supported by Christians on the grounds that it is part of the divine mandate to man to have dominion over the earth. The inappropriateness of this philosophy to the study of human society should be obvious, for our apparent ability to coerce nature in no way justifies coercion of our fellow humans. Indeed, the sociologist should see his fellow man not so much as an object which he studies but as a fellow being who is likewise attempting to understand his relation to society. The realisation of the sociologist that he is like other men in that his view of society is not unbiased or 'value-free', but is committed and involved, enables him to see others not as objects to be experimented *on* but as people to study *with*, what Gouldner (1970:490) calls 'brother sociologists'. Thus self-reflective awareness by the sociologist enables not only better criticism of his work by others, but also enables him to conduct his research in a spirit of humble cooperation rather than arrogant manipulation.

How does the sociologist become self-reflective? One way is through the comparative method. The sociologist is not free or able to consciously control and manipulate the social phenomena he wants to study, but he can 'tour around' the world in order to see how it looks from different positions. Perhaps the classic example of this is Max Weber's study of the relation between society, economy, and religion by comparing their inter-relations in ancient Judaism, Christianity, China, and India. Related to this is the historical method, in which the phenomenon is seen through the eyes of different societies as they have existed historically. A classic example here is Karl Marx's study of the connections between modes of production, relations of production, and forms of society, as they appeared progressively in Roman society, feudalism, and capitalism.

As he tours around, the sociologist begins to see how things look from various vantage points; then he can put the perceptions of different groups into some perspective — but this perspective is always his own. It is rather like surveying a piece of land from various vantage points with the intention of making a map but finding that the various readings do not exactly fit together.

The geographer, if he takes his readings correctly, finds that they are complementary; the sociologist, if he understands people correctly, very often finds their views are contradictory. Their different perspectives do not automatically fit together, so the sociological map can only be made if the sociologist uses some framework of his own with which to put his data into some coherent perspective. Some use a rather stronger framework than others; Marx, for example, fitted his historical data into a very powerful framework, whereas Weber was content with a looser framework. This meant that Weber did more justice to the complexity of society, but at the cost of having a few more loose ends than Marx. But some kind of framework is essential if sociology is not to degenerate into a splurge of unrelatable so-called facts.

This review of some of the ways in which the sociologist is involved in the very processes which he is observing, and of some of the ways in which sociology comes to terms with this situation, could be extended in several other directions. Suffice it to say for the time being that, although there are proven methods of systematically studying society (e.g. the cross-cultural method) which distinguish sociology from the other social sciences and from the personal viewpoints of individuals, nevertheless the sociologist is not and cannot be detached in the manner of the natural scientist. The social scientist has to be an amalgam of participant and observer, and his language reflects this; put another way, he often has to attend simultaneously to two or three of the several aspects of reality.

### *Facts and Values*

I have noted that the claim that scientific and religious or personal languages are complementary rests on the assertion that the one derives from the stance of the observer while the others derive from the stance of the participant. Another related distinction crucial to the complementarity of science and religion is that between facts and values, between statements of 'what is' and 'what ought to be'. Thus, one cannot logically derive 'ought' from 'is', and a key charge against humanists is that they often attempt to do just this (C. Martin 1973:90). Also one cannot derive empirical descriptions of 'what is' from what one believes to be the case on *a priori* grounds which was the logical mistake of Christians who opposed Copernican astronomy. Thus many conflicts over science and religion can be seen to be illusory once we have understood that normative and indicative statements should not be confused.

But things become more difficult to grasp when we consider statements about society rather than the natural world. Indicative ('is') statements derive from an observer stance, normative ('ought') statements from a participant stance. But as we have discussed above, the sociological perspective involves a mixture of these, and this means that empirical descriptions of society are normative as well as indicative since the observer is also a participant in the situation. As MacKay puts it (personal communication):

There is a normative as well as an indicative ingredient in any purported description of a social situation that is offered *in* that situation.

This then prompts the question of what is the relation between the indicative and normative ingredients of a sociological description? It is important to answer this, or else we may expect reincarnations of the spurious 'ought from is' and 'is from ought' howlers. I suggest that the relationship is twofold:

(1) Although empirical descriptions of society cannot be logically derived from normative commitments, they do rest on and are prompted by normative concerns. For example, it is often the belief that something has gone wrong with society that prompts a social scientist to start an investigation — there are other motivations but this identification of 'social pathology' is often an important one. The economist, for example, may study inflation because he believes it to be bad, the psychologist may study mental illness because he is confronted with people in distress and unable to cope with life, Marxist sociologists analyse the dynamics of capitalism because they believe man to be oppressed and alienated, and contemporary social scientists study poverty in order to find out who is below the poverty line. These moral concerns do not cease once the investigation is under way; normative aspects show up all the way along the line in the definitions of mental illness, poverty, etc. which the social scientist uses, and efforts to rid his studies of these normative ingredients end up importing new norms (see Taylor, Walton & Young 1973:ch.5 for a critique of the attempt to de-norm the discipline of criminology.)

Other sociologists choose their subject matter, not because they believe it to be going wrong, but out of genuine curiosity as to how the social world works (Berger 1966:36). But, as I discussed earlier, they too are part of this world, with vested interests and culturally conditioned views which affect their sociological investigations. Further, if their theories are to remain comprehensible, they have to use concepts in everyday use —

status, class, inequality, power, integration, adaptation, etc. which, however clearly defined, are still inherently normative.

However, sociologists have not always been prepared to admit the normative bases of their work. Sociology is a relatively new discipline and it needed to struggle in order to achieve recognition, most crucially in America from the 1930's to the 1950's, a period characterised by the enormously high prestige of the natural sciences, and it is not surprising that sociologists latched onto the methods of the natural sciences as the means to enable sociology to take off. In much the same way in the 19th Century, the earliest sociologists had borrowed the prestigious doctrine of evolution from biology — a doctrine which conveniently legitimated not only their anti-religious bias but also their commitment to *laissez-faire* capitalism, thus giving them an ear among the politicians. The modern variant of this is the belief among many sociologists that they should and do separate their sociology from their personal commitments — the belief that they can do and think and believe one thing as a sociologist and something else as a citizen or religious believer. This appears to be the position taken, for example, by Peter Berger in his *A Rumour of Angels* (1971), somewhat surprisingly perhaps in view of his sensitive earlier discussion (1966) on the relation between sociology and freedom. This position is now being increasingly criticised. Kolb (1961:6) has discussed how difficult psychologically it is to hold one set of values as a scientist and another set as a human being. Friedrichs (1970:ch.7) has shown the deficiency of the idea that one can play one role as a sociologist and another as a citizen without the two impinging on each other, for the very idea that one can split up the complex unity of a person's life into discrete 'roles' is an invention of sociologists themselves. The concept of role is maybe a useful way of simplifying and hence gaining some sociological understanding of the complexities of life in a complex society such as our own, and as such it has become a standard tool for many sociologists. But the person who believes in the necessity of splitting social scientific from personal roles cannot surely allow himself to take a sociological concept like 'role' and make it into a moral and philosophical concept directing and legitimating his activity as a person. Or, if he *can* transfer concepts from sociology to morality and philosophy at will like this, then this surely shows that there is a good deal more interplay between his life as a sociologist and the rest of his life than he would claim. Either way he is being inconsistent.

Even were the sociologist able to detach himself and his values from his study of society, society would still not detach itself from him. Society provides the wherewithal with which to study society; the sociologist studies the very thing that in one way or another gives him the money, the education and the hardware with which to do this, and one can hardly imagine that his education was neutral or that money comes with no strings attached. This is an entirely more complex situation than that in which the natural scientist finds himself, for he is not in the position where the very thing he is studying provides the funds for his study. Molecules don't commission research; society does. And if it be objected that sociological research which is funded independent of government or industry is free from this circularity, this is by no means so, for those of independent means derive their income from some form of economic activity and that activity cannot be neutral with regard to society. For the sociologist to claim that he is detached and unbiased suggests a diagnosis of near-total blindness which is most disturbing among someone entrusted with the empirical study of society.

(ii) Not only do descriptions of what is going on in society rest on normative assumptions, but these 'is' descriptions provoke questions of 'ought', either in the sociologist or in his lay audience. Indeed this is a valuable function of sociology — rather than smothering moral questions (as is sometimes thought by those who fear the spectre of determinism in sociology) sociology serves, or should serve, to prod us to ask moral questions. We tend collectively to invent our own mythical version of what society is like, and a function of empirical sociology is to show what society is really like (real in terms of the sociologist's normative starting point). Empirical sociological descriptions should make us exclaim 'Gosh, if *that's* what society's like, I wonder if it ought to be like that?'

Merely to describe what is happening in society is inherently critical, for it forces us to ask whether society should be that way; this is different from the scientist's description of nature — we would never dream of asking whether nature ought to be the way the scientist has found it to be! Thus, for the christian social scientist Ellul (1965:xxiv), "to bear witness to the fact of the technological society is the most revolutionary of all possible acts". The sociological description should trigger off a personal and ethical response.

It is only in the last few hundred years that people generally have begun to lose the assumption that things must always be the way they are now; it is only relatively recently in human history that we have engaged in political debate, that we have felt that there is some choice in the way our society is organised. And perhaps it is only even more recently that we have believed ourselves to have any choice in the kind of economy a country has. Sociology has become part of this process of enabling people to think, "Is the way things are now the best way they could be? What kind of modifications to society and its economy could actually be made? Do I have to live the way I have done up till now?" The relation between necessity and freedom, between how society is at present and how we ought to change it for the future, between theory and action (or 'praxis') is one of the continuing debates of sociology, but what cannot be doubted is that there is a close and intimate relation between the two.

That sociological findings trigger off an ethical or normative response has implications for sociological method in that the subject matter is liable to change as a result of the efforts of those who study it. Whatever sociologists discover about social processes is sooner or later communicated to a lay audience and this presents people with the opportunity to modify their behaviour in the light of what sociology has discovered. This is one reason why there are probably no discoverable, perpetual social laws akin to the laws of natural science. For whereas the natural scientist affects only the matter he is currently studying, the social scientist, through publication of his findings, can affect his subject matter in the future. As a hypothetical example, sociologists could discover that, say, second-born children do worse at school than do first-born, but this would not represent the discovery of an all-time law, for were parents to become aware of this finding they might become extra concerned about the prospects of their second-born offspring and give them extra tuition or other help, thus in time nullifying the sociologists' findings. Or, publication of a sociological finding could lead to the particular phenomenon becoming exaggerated. For example, it has been found that delinquency (as measured by committals to court) is associated with a disturbed family background; this finding is now so commonly known that children from good families tend not to get referred to court on the grounds that they are probably not 'really' delinquent and their homes will correct any wayward tendencies they may have. Thus the court figures show an even closer association between bad home background and delinquency.



Molecules never learn of what the chemist discovers about them; but people do hear of what the social scientist discovers. Indeed it would be wrong were they not to hear, for then knowledge would rest in the hands of an *élite* which would thus have a power which it could potentially misuse.<sup>6</sup> A nation for example in which social scientists advised the government in secret memoranda and in which their findings were not made public would be on the verge of 1984 where concentration of knowledge in the hands of an *élite* gives it the power to manipulate society at will.<sup>7</sup> Lest this sound absurd, it is worth remembering that anthropology has been in a similar position; written in the language of colonial administrators (also comprehensible to the new indigenous *élites*), anthropological findings rarely filter back to the tribesmen they concern and represent a body of knowledge which can be used by administrators, politicians, and planners to manipulate the people. The disinclination of the poorer and less powerful in our own society to read sociology — indeed, given the jargon, their inability to read it — gives a similar advantage to the administrators who have commissioned so much social research in Britain. Hopefully this imbalance in the distribution of knowledge is changing now that many minority and subordinate groups are organising themselves in self-help and liberation groups and are enlisting social scientists as advisers.

Sociology, if misused, can further the enslavement and manipulation of man; if made public, it can further human freedom. MacKay has pointed out in his argument on logical indeterminacy (1967; 1974a) that as soon as you tell a person that his behaviour can be explained by a causal theory, the situation is changed, the theory becomes out of date, and the person is free to modify his behaviour. Social science, if communicated, automatically changes the social situations it purports to know about; it gives people in those situations choices as to what they should do about their increased knowledge about these situations. Sociology thus makes us more responsible for it forces us to respond. It cannot tell us what we must do, for social science cannot supply the final purposes toward which we direct our lives. But it does increase knowledge about our situation and this puts us in a position of increased choice and responsibility. We become more aware of the consequences of our actions and of the costs which different courses of action involve (D. Martin 1973; Friedrichs 1970). This is not to say that people should evaluate actions purely in terms of the consequences, for there is still the question of how to evaluate various consequences. Sociology cannot tell us how to act, but it does increase our responsibility and it may increase our freedom.

However, there is another side to the story. Although there is no logical imperative that it *must*, it frequently happens that sociology *does* alter our values and concerns. Partly this is because it shows us that much of our life which we had previously assumed could be lived no other way is in other societies and other cultures lived in very different ways. We learn that what we had thought was a necessity is in fact a historically relative societal product, one which may be changed. Partly too, our values change because sociology shifts our focus away from the individual onto the level of society. For example, some students, intending to go into social work because they are concerned about poor people, deprived families, old folk, etc., enrol in a course of sociology. There they find they have to study very broad issues such as the nature of industrial society, and they begin to see that the problems of poverty, deprivation, or old age, are products of our kind of society, and that personal social work can achieve much less than they had supposed. Personal troubles become public issues (Mills 1970), and the values of individualistic social casework seem to evaporate, leaving the student jobless and unprepared (for example, theologically) for the unexpected entanglement with politics. This is not to say that the prospective social worker must react to sociology in this way, merely that it is one way (and a fairly common one) and it illustrates how one's values may be changed via a course in sociology. A rather different response is to be completely bored by the seeming irrelevance of vague sociological theories to the real life business of meeting people in need — but this response too involves a change in values in that the student henceforth places less value on academic qualifications and more value on experience. A third and perhaps more constructive response is that sociology can point out the limitations of social work without denying its validity, and this would alter the values of the student who had hitherto envisaged social work as *the* solution to all our problems.

### *Sociological Language and Religious Language*

I have tried to show that sociology involves a mixture of the observer and participant stances and that this produces some interesting inter-relations between factual and normative statements about society. The demonstration by previous authors of the complementarity of natural scientific and personal/religious statements has rested on distinctions between scientific and other languages *vis-à-vis* their presuppositions and contexts of use, roughly as follows:

SCIENTIFIC STATEMENTSPERSONAL/ARTISTIC/RELIGIOUS STATEMENTS

Objects	Persons
Detachment	Involvement
Observer	Participant
Facts	Values, beliefs, opinions
Neutrality	Commitment, meaning
Causality	Freedom

I have suggested that sociology has to use a mixture from both columns. To talk sociologically about society one has to talk about persons. And because persons as they act in society can be conscious, purposeful, rational and creative, they cannot be reduced to objects in the style of the natural sciences. To do this would lead us to conceive of society as a static set of forces moulding and coercing individual members, and although this picture may be true some of the time it leaves us with no way of understanding how society changes and has become the way it is now, no way of understanding how society is affected by the actions of its members. The social behaviour of human beings is not like a physical object in that it cannot be understood solely with the natural scientific concepts of causal determination and random variance (although human beings undoubtedly can be socially coerced and at times do behave randomly). Marxist and existential sociologists have realised this and have produced more adequate sociological models than could be derived from natural science. This is not in the least to advocate that sociology can or should only make personal statements, for society and social behaviour do show regularities and there is a great need for sociology to involve systematic empirical observations made with a carefulness equal to that of the natural sciences. Society consists of a complex and variable intertwining of social necessity and individual freedom interacting with each other, and for the sociologist to use solely the methods of the arts or solely the methods of science is to miss the nature of his subject matter.

This means that there are elements that sociological language has in common with both the language of science and the language of personal communication, personal commitment and religion. Thus, although there are differences between sociological and religious language, their preconditions and contexts of use show some similarities and so are not mutually exclusive in every respect; hence they are not logically complementary in the terms

of the definition of complementarity quoted at the beginning of this paper. I do not intend here to explore what relationship does exist between sociology and religion — it is enough for one paper to demonstrate that social science and religion are *not* logically complementary.

This conclusion is important. Many Christian students feel as threatened by sociology today as did their forebears by evolutionary theory and determinism in the natural sciences. There is a great need to clarify the relation between religious faith and sociological knowledge, and it is important to realise that the relation is not, strictly speaking, one of logical complementarity. (This conclusion that the two are not logically complementary has been arrived at in this paper by starting with the concepts previously used in the argument that natural science and religion are complementary. However, since I have arrived at a negative conclusion regarding the complementarity of sociology and religion, this conclusion could also be accepted by those who have reservations about the argument for the complementarity of natural science and religion.)

There is not space here to explore the relation further, but I personally believe that sociological and religious views do have different and definable terms of reference, and these are in urgent need of exploration (Lyon 1975 is a start). For example, sociology uses retrospective data and cannot begin to make exact predictions or to talk with any certainty about the future. This separates it not only from natural science but also from the vision and hope of religious faith, which looks forward and provides specific motives for action. Secondly, whereas the sociologist can only see society from within, the claim of those who believe in revelation from a transcendental God is that religious language involves knowledge about man and society from a totally outside perspective.

That sociology and religion are not logically complementary does not mean that they may not be compatible in some other way. Further there are valuable ways in which they can speak to each other. Religion can be constructively sceptical about some of the humanist assumptions of sociology and Christians have a part to play in the current debate within sociology as to theory and method. Sociology is undergoing what Kuhn (1962) would term a revolution in which several different theoretical paradigms are being discussed in the light of empirical evidence (Friedrichs 1970). On the other side of the coin, sociology raises theological issues. It reminds us that even revelation from a transcendental God has to be mediated culturally if we are to receive it, and this raises the question of whether some cultures

enable or hinder communication from God to man. Sociological statistics show correlations between belief in Christ and membership of racial and class groups — do the values and lifestyles of some groups hinder the spread of the Gospel, and if so does this mean we need to redeem or reform cultures and social structures as well as individuals? Our conceptions of God, like other forms of personal knowledge, vary from one culture and social group to another — should we be thinking more about what kinds of social groups embody the Kingdom of God? Our knowledge of God has changed over the centuries — how does the Holy Spirit work through historical change to bring us near to God anew in each era? Some have begun to think of the theological implications (e.g. Segundo 1974), but we have a long way to go yet in clarifying quite what sociology and religion may and may not say to each other.

## NOTES

- 1 Not all social science can be included in my argument; the behaviourist psychology of B.F. Skinner, for example, is more akin to natural science than to much of sociology.
- 2 The reader should note that there is some internal disagreement within sociology as to the nature of the subject and its subject matter; the position I advocate is thus one among several.
- 3 This procedure must be handled with care. The *reductio ad absurdum* is that one can debunk any work by uncovering the socio/economic/political interests of the author; but then the debunker can be debunked by the same procedure. Thus an infinite regress is set up in which no knowledge is possible, including the idea that one can debunk knowledge in this way, in which case one cannot be sure of the veracity of the original debunking. I therefore advocate this procedure be used with a degree of humility and fairness, lest it be turned back upon oneself.
- 4 Of course, sociologists *do* (often intentionally) affect other people when they publish. Rather than reducing the force of the present argument about the manipulation of people in experiments, this serves to highlight the peculiar ethical and logical dilemmas of publishing sociological findings, which I discuss later.
- 5 This does not apply to all science. Astronomy and ethology, for example, deviate from my rather simplified model of the experimental method in ways rather similar to sociology.

- 6 It is also arguable that in certain situations, e.g. concerning children, it would be wrong *were* they to hear. The ethical issues here could well do with the pondering of a few christian minds.
- 7 Against this, it is arguable that the complexity of society is increasing faster than our knowledge of it, and thus our ability to manipulate society is decreasing.

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R. K. HARRISON

THE ANCIENT KINGDOM OF EBLA

What may well prove to be one of the most significant archaeological discoveries of the century, outstripping even the celebrated Dead Sea scrolls, was announced in 1976 by a team of Italian archaeologists working at a site in Syria.

Drs. Paolo Matthiae and Giovanni Pettinato, of the University of Rome, leading a group which was excavating Tell Mardikh, a sun-baked mound some thirty miles south of Aleppo in Syria, reported that they had uncovered the remains of an ancient city-state of a distinctively Semitic character.

As has happened previously in archaeological work, early soundings uncovered a large collection of inscribed clay tablets amounting to around 16,500 in number. Although these have only been partly deciphered up to the present time, they have revealed that the ancient kingdom was known as Ebla, and that it flourished between the twenty-sixth and the twenty-third centuries before Christ in Syria. There is no mention of Ebla in the Bible, but the name does occur occasionally in the literature of the ancient Hittites, Egyptians and Sumerians.

Like the ancient Canaanites and others, the people of Ebla had their own distinctive way of writing their language, and this was unfamiliar to the archaeologists. On examination it proved to be a mixture of syllables of the kind common to cuneiform writing, and logograms, or symbols which stand for a concept or an entire word.

The process of deciphering was fortunately hastened by the fact that people in the ancient world, like their modern counterparts, often needed dictionaries when reading or writing the languages of other nations. The Eblaites, who apparently had important cultural and commercial connections with the Sumerians of southern Mesopotamia, were no exception to this practice. At an early stage the archaeologists came across a bilingual vocabulary list of about a thousand words in both Sumerian and Eblaitic, and this provided an important clue to the nature of the local language.

When words began to be recognised in the clay tablets, the archaeologists were astonished to discover that Old Testament persons and places were mentioned frequently, and that the syllabic spelling of the names was almost identical with their counterparts in Hebrew. For example, the tablets spoke of Abraham (*Ab-ra-mu*), Esau (*E-sa-um*), Eber (*Ib-run*), Israel (*Is-ra-ilu*) and others,

all of which are clearly recognisable. Places that have been identified so far in the tablets include Megiddo, Hazor and Jerusalem. The latter (*U-ru-sa-lî-ma*), is of particular interest to scholars because it constitutes the earliest known mention of this celebrated site, and is perhaps a thousand years older than any other surviving literary reference. To add to the mounting excitement, the archaeologists discovered in the collection of tablets accounts of the creation of the world and its subsequent destruction by a great deluge. Both of these correspond very closely indeed to the Genesis narratives, and are evidently copies of quite early literary sources.

It is now apparent to all those who have examined preliminary reports of the discovery that an important Canaanite empire was in existence in Syria some 4,500 years ago, and also that the tablets will have a great deal to tell us about the origins of the Hebrews. It was at this time that the nomadic ancestors of this people came from Sumer in southern Mesopotamia, and moved north and west in the general area of Syria and northern Palestine, settling ultimately in Canaanite territory in the time of Joshua.

Of great importance for the historian is the fact that the precursors of the later Hebrews are mentioned by name in the Tell Mardikh texts. Thus Eber, an early ancestor of Abraham, is usually thought of by scholars as the individual who gave his name to the later Hebrew people. The presence of his name, and those of certain of his descendants, in the tablets would indicate that if such persons as Eber, Abraham and Esau did not actually live in the kingdom of Ebla at some period, they certainly belonged to the same west-Semitic culture and were very familiar with that area of Syria.

Our knowledge of the earliest phases of Hebrew history will also be enriched by the obvious Canaanite background of the Eblaic tablets. We may expect to glean more information about the peoples and conditions in existence before the flood, and perhaps to obtain a corroborated and expanded form of some of the early genealogies in Genesis. Already the texts have shown that Eblaite religion was a composite of Sumerian and Canaanite gods, the latter including, Baal, Chemosh and Dagon, familiar to readers of the Old Testament. Dagon seems to have been the principal Eblaite god, who was perhaps an agricultural deity and represented as having the hands and head of a man but the body of a fish.

Of the many promising features connected with this remarkable new discovery, one is that the tablets seem to have been unearthed at the central court of Ebla, where provisions were housed and tribute was collected. The literary nature of many of the tablets would perhaps indicate that a scribal school was attached to this court. Since ancient Near Eastern kingdoms normally had a library attached



to the palace, it may be that subsequent excavations will uncover another large hoard of tablets from the royal archives at Ebla. So exciting has this prospect proved that archaeologists and Biblical scholars who normally express themselves in measured prose are employing exaggerated, almost ecstatic, language in their description of the possibilities presented by this situation.

There is no doubt, of course, that this totally unexpected discovery will bring about far-reaching changes in the opinions of scholars, especially those of the liberal school, about the nature and quality of the early material in Genesis. To the astonishment of the archaeologists, the new sources are very much closer to the Old Testament than any other literary material which has yet been discovered.

The very fact that narratives about creation and the flood were in existence in written form at least 2,300 years before Christ was born has furnished a conclusive refutation of the view that such Old Testament material had been handed down orally until about the time of king David (*c.* 1,000 BC), and only then committed to writing with any consistency.

Theories of the composition of Genesis will likewise come in for severe reassessment, and if the new discoveries are at all in accord with similar scribal material from the Near East, they will deal a decisive blow to the literary-critical theories so beloved of nineteenth century European scholars and their followers. One of the more realistic attempts to explain the composition of Genesis has seen it as comprised mostly of eleven tablets, written in Mesopotamian fashion, and readily identifiable from the narratives themselves. It is interesting to note that the Eblaite creation and flood narratives were preserved in tablet form, and it will be instructive to compare and contrast them with the Genesis material once the Ebla tablets have been published.

Even at this preliminary stage, scholars are being compelled to regard the very early historical records of Genesis with much greater seriousness than has been the case previously in a great many circles. Now this material has become rooted as never before in a sophisticated Canaanite culture which was flourishing in Syria about 2,500 BC.

Some scholars are already saying, and with evident justification, that the Eblaite sources have opened up an entirely new chapter in the history of the Near East. What can also be said is that this material is probably the most significant of its kind ever to be recovered, and that its effects on Old Testament study will be noticeable for many years to come.

Quite obviously, only the very earliest stages of the discovery can be discussed at the present time, and at that in only the most preliminary and tentative manner. Further articles will appear on this topic when more substantial information is forthcoming.

Reprinted with permission from *The Life of Faith* 7 Aug. 1976. Professor Harrison is Professor of OT at Wycliffe College, Toronto.

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We were unable, owing to a postal failure, to include this article in our last issue. Later reports (*Times* 15 Jan. 1977) emphasise that the State of Ebla flourished a thousand years before the Israelites appeared in the Middle East. "The recurrence of names such as Abraham, Ishmael and David means only that such names were common in the area at the time" — it does not prove that the inhabitants of Ebla were the ancestors of the Jews, for much can happen in a thousand years. Interestingly, one tablet records a merchant's invoice of goods despatched to the cities of Sodom and Gomorrah, which are mentioned very early in Genesis (10:19). The Eblaites were conquered in 2,300 BC and finally destroyed by the more war-like Mesopotamians — *Editor*

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NANCY ELKIN

MIRACLES: PHINEAS IN THE SERVICE  
OF GOD IN THE ZOHAR

In this unusual essay Nancy Elkin analyses, in her inimitable way, the doubts of modern man about the God whose ways are past finding out. Is it true that no one knows about God's miracles save God Himself?

The passage quoted below from the *Book of Zohar* tells how the Kabbalist Phineas, the great Simeon ben Yohai's father-in-law, expresses appreciation for a miracle which God supposedly worked on his behalf. By implication the question of whether God has continued to work miracles on our behalf — now, in this age — is brought into focus:

We are told that God alone works great marvels, for his mercy is forever enduring. How much good God brings to people, how many marvels he initiates for them everyday, and yet nobody knows about them except God himself.<sup>1</sup>

This comment in its own way defines the basis for religion: when something beneficent falls to us, we attribute it to God. Religion's problem, however, is what to say when beneficence abandons us. Certainly Western civilization has educated people to look for causes behind events; yet we are given to suspect that the truly important things are fatally ordained and that we are not to try to touch the spiritual gearbox of the universe. In fact it is under lock-and-key; it is password-protected.

Phineas is neither a genic prophet nor a pre-confirmation simpleton; he simply relates things back to himself in an unaffected and rather emotional fashion, as if he was privy to God's innermost secrets. His attitude could be considered borderline solipsism, were it not for its non-toxic, mildly oneiric nature. But in view of the risks involved in summing things so tidily, we step back from Phineas's immediate presence, take a long and thoughtful look at him, and cease to take him seriously.

Yet Phineas has actually found the sweet-painted-lady in God's nonlegalistic, underpoliced, injudicial universe: our longing for miracles — for a kind of compromising of the divine body — derives strictly from the order of things. Phineas, God's sleuth, exclaims, Ah, ha — some cosmic mischief has been abroad here — but we, pedestrian and impassive, are not impressed. So Phineas must resort to a declaration of miracles in order to elevate the direly commonplace into the numinous, and if in his overenthusiasm we are made to feel a bit restless, it is because we have no sublime cables-of-greeting from heaven, as he does. Phineas assumes that if we were to have the same information about the universe that he has, we would feel the same way.

But given the ignominious extent to which we are uninformed, there do seem to be perplexing and multiphasic differences between ourselves and the Kabbalist. Whenever God works an anonymous change, Phineas guesses what has happened and we, as men of the word, do not. Is it not ungenerous of God, so to speak, to have been so miserly with such crucial data? Does it not beg the teleological question? Ought we to assume that God's deliberate pulling of the wool over our eyes has a function? Would he want to prevent our impetuosity? Such insinuations with regard to God's nocuousness would be offensive to Phineas, given his open-armed embracing of God's every act, but despite this, man perseveres in giving his testimony.

God, then, works wonders on left and right and yet appears to be no more industrious than an itinerant sundowner; and although during the period of the Old Testament he never hesitated to set Gabriel's cornet ablowing in praise of his own mercies, by the time of Phineas God's forbearing spirit was beginning to go unsung. Hence the Kabbalist's quick footwork in getting the praise-be-the-Lord train back on its rails. Modern man would question if God is worthy and deserving of such chivalrous handling.

We admit that it is not the appropriate response to abuse the concept of God in this way; the Zoharian *non sequiturs* and mixed metaphors with which the Kabbalah is so copiously filled should only be explained in religious terms, since any other approach does them an injustice. But the human race is in the throes of a massive abortion, and while we need God's comfort — he does not seem to be here. He visited the planet, or the dimension, or the spatial plane, a few times — to talk to the forefathers, to heap compliments and reprimands upon the human race — and then he blasted off again. Where is God when we need him?

Men feel ashamed of this necessity for leadership: ashamed of the God-requisite. Nonetheless, fears are notoriously tenacious, and man has yet to get used to the fact that he must have his ration of miracle-working in this era too, if he wants to maintain even the semi-state of autonomy he now has. God is about in the world, working invisible wonders for his own enjoyment. Does He think man needs him less than before?, we know man's need of Him is greater. God is having a telecommunications problem, we suppose; or using a different radio frequency to ours. We scan the skies; he hides behind black stars. We search for him electromagnetically; he evades us by sliding down rainbows. We beg bones in heaven's back alleys; he heads racy for some other astronomical body. We have compromised ourselves for God, he has paid us, and now he is off on a voyage whose course has no bearing on where we are now and where we would have hoped to be in the future. And yet we search, we search.

What, after all, is the Bible full of if not subpoenas to God? Writs of *habeas corpus* against his kidnapers — since he has of course been taken hostage? Open letters to the powers-that-be and the powers that should have been? We often feel that we were but a hairsbreadth away from persuading him to return, when he suddenly met a new challenge and left us to face our failures alone. The wonders are over and the marvels are past; now all we can do is ease our burden with the makeshift miracles that technology offers.

But lest we drink too deeply of the devil's poison, the Kabbalah comes to the rescue in the person of Phineas, that ever-resourceful fantasist when it comes to explaining away God's frequent absences. Rather than appearing as God's nemesis, Phineas is featured on the bill as ours: we must conform to the convenient view of God as the stern but well-intentioned bumbler, he says, if we are to have any rationalization at all for why we stand so bewildered in the supposed presence of God's grace. That grace — that geometrically involuted curve of passion and paradox that God has wound about us like the desperate web of a dying spider — binds us tight, and yet leaves us feyly free to touch the web, and question it, and fear it. The graces of God are the greatest mystery in that they inform other mysteries: the miracles of God. Yet, though grace inform mystery, mystery underlies our orphanhood as well — and it is with this claim, this accusation, this knowledge that our rejection of Satan does not necessarily entail an acceptance by God — that we wonder at Phineas, and gaze at him with a wry bitterness.

So God's world is wanting in our eyes. But a stubborn faith in God's ability to make entropy obsolete — by appearing in the world even when the thermodynamic function says there is no chance of his appearing — turns and twists in us like the creature that lies at our soul's core; in fact that faith and that creature are

one and the same entity. Of God's true nature we know nothing, except that it is not to humiliate us that he works his miracles, but to buoy us up in that great sea of aimless forces across which Satan sails.

#### REFERENCE

- 1 Based on a passage in "The Wisdom of the Zohar: Texts from the Book of Splendour", Vol. I, F. Lachover and I. Tishby, 3rd. ed., 1971, The Bialik Institute, Jerusalem, pp. 11-18. Paraphrased translation is mine.

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#### BOOKS

"One of the diseases of this age is the multiplicity of books; they doth so overcharge the world that it is not able to digest the abundance of idle matter that is every day hatched and brought forth into the world" Barnaby Rich, 1613 (Quoted *Nature* 262, 731).

CARL F.H. HENRY  
SCIENCE AND FAITH

In this brief survey of the mutual relations of faith and science, Dr Carl Henry stresses the changed attitudes among scientists who now flirt freely with previously forbidden metaphysics.

The topic is "Science *and* Faith," not "Science *or* Faith." That is highly appropriate. A century ago not a few scientists were disposed to categorize faith as unpardonable ignorance. Today faith is more widely recognized to be an indispensable element of all human understanding, not excluding that of scientists. Faith is an integral feature of both scientific and religious thought.

In science, faith provides an explanatory principle that supposedly best fits and explains the data. Max Planck spoke of the "imaginative vision and faith" that stimulates the scientist to sponsor new hypotheses. Like Newton, Planck and Einstein were strongly motivated by faith in the orderliness of nature. Other scientists have been motivated by faith in the interconnectedness and symmetry of nature. Moreover, the scientific community assumes what it cannot with absolute certainty demonstrate, namely, that the scientific method is basically sound.

Most also believe that honesty in reporting results is desirable, although in some countries scientists modify or rearrange their results politically.

The biblical view of faith centres, of course, in a personal redemptive relationship to the God and Father of Jesus Christ. But it also takes note of faith in a wider sense. Hebrews 11:1 speaks of faith as "the substance of things hoped for, the conviction of things not seen." Faith is subscription to convictions for which empirical warrants are lacking. What distinguishes *blind* faith from *intelligible* faith is that the latter has adequate evidential supports whether such evidence is empirical or trans-empirical. In each case evidence must be appropriate to the object of inquiry. Biblical faith is grounded in the self-revelation of the living God, verified by the prophetic-apostolic witnesses, and tested by the criterion of logical consistency.

Scientific theories are not the result of inductive inference; they are a product of creative imagination. On the basis solely of empirical methodology, the scientist has no legitimate metaphysics at all. The day is long past when science could claim special honour on the ground that it does not traffic in metaphysical concerns. Without some metaphysical assumptions, science can hardly get underway. Some of the most noteworthy advances in modern experimental physics have been engendered by imaginative metaphysical theories.

Scientists often emphasize that they are preserved from postulating imaginary beings like elves or spirits (some would add God also) by the fact that their hypotheses are empirically tested. Scientists a few generations ago spoke confidently of causality, whereas in our day they speak more guardedly only of a sequence of events. A brilliant mathematician like Whitehead spoke of "prehensious" and "neutral entities." Natural selection, gravitational fields, atoms and electrons are among the invisible postulations of science. Whether scientists believe in elves may well depend upon which generation of scientists one asks.

In any event, two things are clear. First, mathematical formulas represent a statistical averaging of a limited range of data. Scientific readings need not represent the way in which nature actually and objectively functions. The scientist does not tell us how nature is objectively constituted, but only what works best for purposes of prediction and control. In short, he is more occupied with what is *useful* than with what is objectively *true*. Second, because of the limits of the empirical method, every claim the scientist makes is subject to revision. He must stand ready to alter each and every pronouncement. Such revision is the price of progress in empirical science. Empiricism supplies no bases for fixed and final truth about anything.

Scientists sometimes claim to hold an advantage over theologians in that they deal with empirically observable realities, whereas theology is preoccupied with non-empirical metaphysics. The force of this claim depends, obviously, on an unspoken assumption. That assumption is that metaphysical realities are less significant or less real because they are not empirically observable or verifiable. But I have already emphasized that this empirical limitation does not keep scientists themselves from flirting with all manner of metaphysics. Yet more can be said. One might reply, with equal force, that theology has over the physical sciences the advantage of dealing with invisible spiritual realities. Revealed religion does not flirt with those Homeric gods with which scientist-metaphysicians play touch-and-run from generation to generation. It deals with the one living God known in His self-revelation.



The Christian faith is not the enemy of science but is, in fact, the *mother* of science. Many philosophers have pointed out the theological and philosophical assumptions which led to the rise of science in the Western world rather than in the Orient. Whitehead singled out, first, the Hebrew-Christian emphasis on a sovereign God of creation, so that all reality was to be explained not by many gods or principles but by a single explanatory principle, and second, the classical Greek emphasis on reason. The Greek view, however, included Plato's notion of the obduracy of matter — its resistance to the eternal forms — and Aristotle's notion of the overpotency of matter so that the forms could not wholly contain it. But Christianity traced the whole of finite reality to one sovereign Mind and Will. We know, of course, that Western science soon came to regard Christianity not as its mother but, rather, as an estranged *mother-in-law*. Christianity emphasized that God is related to created reality in a variety of ways, including the repetitive and the miraculous. But science was interested in prediction and control, and could not tolerate the unpredictable intrusion of a sovereign Will. In our day many scientists view Christianity not simply as an estranged mother-in-law but as an *outlaw*.

Christianity teaches that man is, by creation, a creature of faith. He will embrace either the living God or some false god or alternate principle of ultimate explanation or value. The scientific world is full of "Homeric gods" although many scientists — some of world prominence — are devout Christians. Christian theology does not debunk or demean science because it can give only an empirical reading of events. Such knowledge has vastly aided our comfort and convenience even if it has not made us wiser or better. There is surely room for a two-tier approach to reality by methods appropriate to particular objectives.

Science can make no claim to depict objectively the course of nature, far less history, and still less the nature of the invisible world. There can be no decisive empirical arbitration of what could have occurred in the past or of what will occur in the future. Neither the biblical miracles nor an eschatological climax of human history are ruled out by science. On the basis of so-called current scientific laws one cannot rule out any particular event in the past or future. In fact, counter-instances or unforeseen exceptions make for progress in science.

The factuality of miracles turns on the adequacy of testimony and evidence, not on observation limited to the present or upon an empirical method which does not deal with the transcendent. To assume that empirical observation is the only method of knowing the real world is merely to assume that all reality is perceptible by the senses. Yet the ancient Hebrews knew that the living God is invisible, immaterial spirit. Only false gods and graven images

fall within the arena of empirical perception. Theology is not without false gods, but it is not without adequate criteria for identifying the true God.

[Based on an address recently given by the author at Hong Kong Baptist College, Hong Kong]

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#### OCCAM'S RAZOR

"There are some people who, brandishing 'Occam's razor' and fascinated by it, think it right for science to ignore half the properties of living things because they seem to complicate the issue; Occam's excellent principle [*Entia non multiplicanda praeter necessitatem*] must be used with care and not, as so often waved in front of us to introduce an entirely false simplification of the problem" Alister Hardy in I.T. Ramsey (Ed) *Biology and Personality*, 1965.

E.K. VICTOR PEARCE

A REAPPRAISAL OF TABLET RECORDS  
OF THE FLOOD.

In this paper Preb. Victor Pearce summarises the present position with regard to ancient records of the Flood.

In the near East archaeologists have unearthed tablets of various ancient peoples which give a very full account of the Flood. They come from the Sumerians of South Mesopotamia, a culture which came into being soon after the Flood, from their migrant Eblaite Society in Syria, and also from the Babylonians who were much later, c. 1900 BC. The biblical account also appears to be based on tablets, apparently, as we shall see, older than any of the above. In addition, there are Hindu, Persian, Chinese, Japanese and Titetan records of the same event.

As André Parrot points out, it is difficult to doubt that such detailed and persistent records have a factual basis.<sup>1</sup> "There can be no question that the Flood marked a clear break in history." he writes, "The memory of it remained vividly in mens' minds as well in Mesopotamia as in Palestine". And again, "The cataclysm was accompanied by destruction on such a scale, and made such an impression, that it became one of the themes of cuneiform literature".<sup>2</sup>

We learn from the Bible and from many ancient tablets in the Near East<sup>3</sup> that the refuge centre was artificially provided by the building of a huge boat called the "Ark".

Some might object that the Bible should not be brought into a scientific discussion on the distribution of man. Such an objection cannot be maintained in the light of modern archaeological methods even if the Bible be regarded as folklore. For though at one time folklore and mythology were disregarded by archaeologists, opinion has now changed; there have been many instances in which folklore has proved to be a reliable guide to discovery. The earliest to demonstrate this was Schliemann who believed that when, in the sixth century BC, Homer wrote about Helen of Troy and the Wooden Horse, his folklore sources had foundation in fact. Consequently Schliemann went to the site: he was able to find evidence of seven stages of the history of Troy, the sixth being that associated with Helen of Troy 1,200 BC. Likewise, the Greek epic of the Minator and the

Labyrinth, apart from its mythological content, has some basis in fact, as shown by the excavations at Knossos on the Isle of Crete. The Labyrinth Palace of Minos was unearthed by the archaeologists: a labyrinth of rooms and passages it certainly is, for today one can easily get lost when investigating and photographing the excavations. Even Ulysses' expedition for the Golden Fleece is probably a reference to the early method of gold prospecting by placing a fleece in a river to collect the floating gold dust. The gold dust settled into a fleece as the water flowed over it.

Thus, whether mythological or not, the tablets referring to the great Flood which wiped out mankind are certainly worthy of attention. As regards the account in the Bible, this is the purest account that has come down to us: it is devoid of the gross romancings and polytheistic fantasies of the later myths. If Schliemann could take the story of Helen of Troy as a guide to his excavations, there is no reason why we should not be guided similarly to an interpretation of archaeology. In this connection Dr. Schonfield,<sup>4</sup> tells us that Israeli archaeologists frequently use the text of Scripture as a guide to their excavations and find it accurate even to small details. Already several archaeological enigmas have been solved as a result.

To what extent are such records, mythical or otherwise, to be taken as evidence of the reality of the Flood? Let us look at what some of the tablets say.

The Sumerian tablet WB62 consists of eighteen lines and gives the names of the ten kings who reigned before the Flood. An interesting factor is the great length of life credited to these individuals.<sup>5</sup>

It is strange that at Hacilar, Turkey, which is a pre-Flood site, and at al Ubaid which is immediately post-Flood, there are skulls in which the teeth are worn right down to the gums. It seems hardly possible that a grain-diet could explain such rapid wear as the teeth are hard and undecayed. Longevity may well be the cause.

Among the names on the tablet are included individuals known from other tablets. The names of five pre-Flood cities are also given.

Tablet WB444 then takes up the story. As is common in such tablets, there is a recapitulatory note to link up the preceding tablet with the sequel. It mentions the name of the last king, and that there were eight others, and names the five pre-Flood cities. Then appear the words:- "The Flood came up. After the Flood had come kingship descended from heaven. The kingship was at Kish".<sup>3a</sup> A list of post-Flood cities and kings follows.

The words "The Flood came up" correlate with the expression in Genesis 7. "The fountains of the great deep were broken up". It confirms that the greater volume of water came up from the oceans, rather than as rain coming down from the clouds. The rain was probably a preliminary due to the atmospheric disturbances accompanying the cataclysm.

These post-Flood cities are in South Mesopotamia, and accord with the biblical statement that a considerable time after the Flood, the descendants of Noah descended from the East, from the mountain plateau of Iran, to settle on the mud-flats of Mesopotamia. This means that the dispersion must have first migrated slowly along the plateau heights south eastwards from Armenia. There is evidence of grapevine-growing starting in Iran at this time as reflected in Gen. 9:20. "Noah the farmer was the first man to plant a vineyard. He drank some of the wine and became drunk". Elam the son of Shem (Noah's son) gives his name to that part of Iran (Elam. Gen. 10:22).

At Susa, the capital of Elam (Iran) traces of a cuneiform script on the oldest bricks was found to be in Semitic language. (i.e. the language of Shem)

The Ubaidian settlement of the marshes is regarded as an important phase in Near Eastern archaeology. Later, the population increased and city states were founded as mentioned in Genesis and on the Flood tablets.

The cities mentioned in Gen. 10:10, and 11:2 are correlated with archaeology as follows:-

Shinar — Sumer of the Sumerians.

Erech. Gen.10:10 — Uruk or Warka, whose king was Gilgamesh of the Gilgamesh epic.

Babel " — Babylon.

Calneh " — Nippur.

Accad " — gives its name to the Akkadian empire and language.

From South Mesopotamia one of the kings went north to rebuild the pre-Flood city of Nineveh. This is where excavation reveals a hiatus followed by a stratum of Ubaidian culture.

The Babylonian account is recorded in various tablets found in a number of the old city states of Mesopotamia. They should be referred to as the Akkadian accounts. They vary in their versions, indicating that as regards the Akkadian versions the Flood stories were told and re-told in their localities long before being recorded on the tablets.

It is evident that, relative to the original story, these tablets contain many deviations, accretions, and omissions, whilst a number of the historical personalities have become gods in the conception of the narrators. Thus Nimrod of Gen. 10:8-12 who features upon the hunter-palette, has become Ni-mur-rud the god to whom the Lagash temple is dedicated. He is also featured upon a mace-head. In all the tablets, the majestic monotheism of the Genesis tablets has become grossly polytheistic. In anthropology we see that monotheism is the more primitive conception, the supply of more and more intermediary gods or spirits between the High God and human beings being a later development. Even in Christianity this trend of human nature to add intermediaries, is seen in the addition of more and more saints and angels who are credited with controlling the various departments of natural phenomena.

Let us take, for example, the Akkadian tablets dated 2,000 B.C. The highly poetic description and romancing is typical of literary development rather than of an original account. There is a graphic description of the storm which is brought about by agency of the gods of wind, water, clouds, canals, the deep, and of lightning. According to these tablets the bringing of the deluge was an outcome of much quarrelling among the gods. Some opposed it, others wished it to wipe out mankind, and the god Enlil was particularly angry that the god Ea had warned Uta-napishtim (Noah) to build a ship in order to escape. "As soon as Enlil arrived from on high, he saw the ship and was wrath. The god Enlil was filled with fury against the gods, 'Who then has escaped, when no man was to live through the destruction?' Nimerth opened his mouth and spoke, he said to warlike Enlil, 'Who but the god Ea can imagine such schemes?'" When the supreme goddess Ishtar arrived from on high, she forbade Enlil to approach the sacrificial offering made by Uta-napishtim (Noah) when the flood was ended, "Let the gods approach the offering, but let not Enlil approach the offering because he did not consider, and brought on the deluge, because he consigned my people to destruction!"

There is in all this little conception of God's grief at the sin of mankind as in Genesis 6:5-14. This is the type of detail which would be unpopular and get left out of later secular accounts.

The Lord saw that the wickedness of man was great in the earth, and that every imagination of the thoughts of his heart was only evil continually. And the Lord was sorry that he had made man on the earth, and it grieved him to his heart. So the Lord said, 'I will blot out man whom I have created from the face of the ground, man and beast and creeping things and birds of the air, for I am sorry that I have made them.' But Noah found favour in the eyes of the Lord. These are the generations of Noah. Noah was a righteous man, blameless

in his generation; Noah walked with God. And Noah had three sons, Shem, Ham, and Japheth. Now the earth was corrupt in God's sight, and the earth was filled with violence. And God saw the earth, and behold it was corrupt; for all flesh had corrupted their way upon the earth. And God said to Noah, 'I have determined to make an end of all flesh; for the earth is filled with violence through them; behold, I will destroy them with the earth. Make yourself an ark of gopher wood; make rooms in the ark, and cover it inside and out with pitch'.

The deluge, according to the Akkadian tablet, was so terrible that even the gods trembled and sought refuge. They crowded in a heap like a dog in his kennel and the gods and goddess wept for pity: "The gods were afraid at the deluge and they fled. They ascended the heaven of Anu. The gods cower like dogs and lie down in the open. The goddess Istar cries out like a woman in travail... The Anunnaki-gods weep with her, the gods howl, they sit down in tears."<sup>6</sup>

The description of details such as the shape of the Ark is more mythological in the Akkadian account than in Genesis. In the Akkadian epic the ark is cube-shaped, 120 x 120 x 120 cubits, and is divided into seven stories. Food in the form of bran in the morning and wheat in the evening was rained down from heaven, and was brought into the ship with beer and wine. Slaves and concubines were also brought on board.

The dimensions of the Ark given in Genesis are more realistic — 450 by 75 by 45 feet. These figures have a similar ratio of length to breadth of the most seaworthy vessels in the 19th. century, when large liners began to be built. Filby gives some details.<sup>7</sup> In contrast the Akkadian cubic vessel would spin around constantly. Again, the Akkadian account Uta-napishtim sent out a dove, a swallow, and then a raven. This order is rather pointless; the non-return of the raven, which might feed upon the corpses, would prove nothing. In the Genesis account the dove with its homing instincts was sent last and returned with an olive branch.<sup>8</sup> This indicated that the flood had receded from the lower slopes of hills which are the habitat of the Olive tree.

Thus the evidence points strongly to the priority of the OT account over the Akkadian. Here even the sceptical F.H. Woods admitted that "some few particulars in the Bible story may be actually more original than in the Akkadian version, while K.A. Kitchen of the School of Oriental Studies, Liverpool University comments as follows:-

"The contrast between the monotheism and simplicity of the Hebrew account and the polytheism and elaboration of the Mesopotamian epic is obvious to any reader. The common assumption that the Hebrew account is simply a purged and simplified version of the Babylonian legend (applied also to the Flood stories) is fallacious on methodological grounds. In the Ancient Near East, the rule is that simple accounts or traditions may give rise (by accretion and embellishment) to elaborate legends, but not vice versa. In the Ancient Orient, legends were not simplified or turned into pseudo history (historicized) as had been assumed for early Genesis." Kitchen gives reference to a number of examples.<sup>9</sup>

Modern anthropology has learnt to be cautious of subjective theories which are founded in isolation from empirical investigation. It has learnt how easy it is for the best minds to become so impressed by plausible theories simply because they sound good to Western ears. When field-work has revealed the theory to be contrary to fact, there has often been reluctance to think again.

A case in point is the readiness to accept that the story of the Flood in Genesis ch. 6 to 9, is a compilation from two separate sources, sometimes contradictory, called "J" and "P". This theory was completely subjective. It was framed without reference to archaeological investigation, and has for some time resisted correction. Theological Colleges and schools should abandon it in the face of what is now known of the literary methods of the Ancient Near East. It is a fact that among all the thousands of tablets there is no known example of several accounts having been carved up and pieced together to make one record.

The compiler of Genesis is obviously anxious to preserve all the words of the tablet as they are too sacred to be lost, and so includes the recapitulation of the colophon which might be separated from the body of the text either by a line, or on the edge of the tablet, or on its baked clay envelope.<sup>10</sup>

Further evidence that the tablets which the compiler of Genesis included, were more archaic or original than the Akkadian tablets or even those of the Sumerians comes from the archaic nature of words in these sections, and also of the description of the topography when they were written.

The word translated "Ark" in the Hebrew is *Tebah*. Its original meaning has been lost. It can only be guessed that it meant something like "chest" or "box". After the Flood accounts of Gen. chapters 6 to 10, it does not appear anywhere else in the Bible. As the Babylonian accounts do not use the word, but use the ordinary word for ship, we naturally conclude that the latter



were written long after the Genesis account. Even the word in Exodus 25:10 for the ark of the Covenant is the different word, *Aron*. In contrast the word *Tebah* occurs in the Genesis Flood tablets 26 times. Very significantly it appears equally in the supposed "J" and "P" section (eleven<sup>11</sup> times in "J" and 15 times in "P"), yet it never occurs again even in those passages of the Old Testament which are supposed to belong to "P" document.

In Genesis the ark is said to have been made of *Gopher* wood. Again this word is never again used in the Old Testament, so that no-one knows its meaning. The word was old even by Moses' time. Similarly the meaning of *Tsohar* (Gen. 6:16) has to be guessed at. Translated "windows" it probably means ventilator judging from its cognates, because the word for "windows of heaven" (Gen. 7:11) is a different one.

Incidental topographical remarks are sometimes revealing. The territory of the Canaanites is described as extending to Sodom and Gomorrah in terms which shewed they still existed when the sixth tablet was written. Gen. 10:19. Sodom and Gomorrah ceased to exist in Abraham's time so he must have received it from an ancestor. Again, *Egypt* is still the name of the ancestor who migrated from Mesopotamia to found the land of Egypt (10:13).

A unique feature of the Genesis account is its succession of dates and periods with repeat phrases. It is as if they were copied from original diary entries or ship's log, perhaps recorded by a primitive mnemonic system of symbols. Renfrew makes some interesting references to such proto-writing which would have been in use before the time of the Flood.<sup>12</sup> He refers in particular to the Tartaria tablets of Vinca chalcolithic period following the Starcevo neolithic. These three baked tablets were found in Romania, but some scholars think that their style shows Near Eastern influence.

He also refers to the mesolithic village of Lepenski Vir in the Balkans 5,500 BC. These religious symbols indicate an economy based upon fishing in the Danube, and are therefore a diffusion of the Danubians from the Near East. The symbols serve as aids to prompt the memory for a chant which probably constituted an oral tradition.

In conclusion, present evidence points increasingly to the view that the Genesis account of these early times pre-dates all other accounts known to us.

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- 7 F.A. Filby, *The Flood Reconsidered*. 1970 p80.
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- 10 V. Pearce, *Who Was Adam?* Paternoster, 1976 p19.  
P.J. Wiseman, *Discoveries in Babylonia* 1946. Chap.5.
- 11 Ref 7, p93 and P.J. Wiseman, *op.cit.* Chap.6.
- 12 C. Refrew, *Before Civilization*, 1973, pp.177, 182.

[According to press reports G. Pettinato who is studying the Ebla tablets has found one which states that the heavens, earth, sun and moon were created in that order - the same sequence as in Genesis. However, concerning the sun and the moon, the Hebrew perfect tense meaning completedness signifies that they were created earlier but only observable on the fourth day when the atmosphere cleared. This would indicate that the less precise Ebla tablets were a later derivation from the Genesis source.]

# REVIEWS

W.M. Capper and D. Johnson, *The Faith of a Surgeon*,  
Paternoster Pr. 1976, PB, £1.80.

The name of Professor Arthur Rendle Short (1880-1953) will be familiar to members of The Victoria Institute which he joined in 1920, of which he was a Vice-President and to which he lectured on two occasions ("Recent Literature on the Origin of Species" in Vol 61 and "... on the Origin of Man" in Vol 67). We welcome this biography by Dr. Douglas Johnson and (the late) Dr. Capper. Rendle Short ('the Rendle' as we affectionately called him in our student days) was a man respected, hero-worshipped, loved, by younger Christians who could only worship and thank God for such a man. In an era when Bible-loving Christians were subjected to scorn in academic circles this lion-hearted giant would suddenly appear on a weekend in our midst: his sermons and talks impressive, unemotional, lecture-like, precise, his knowledge seemingly stupendous, his loyalty to the Christian cause rock-like, his knowledge of Scripture impressive. The young Christian took courage. Monday morning came and the Rendle had gone!

How little we knew! In the background was the spirit of George Müller of Bristol and Rendle's own father, there was Mrs. Short too who helped him so much. We knew nothing of these influences. Nor of his early poverty when for year after year this brilliant man, who had won every prize London University could offer in Medicine, held unpaid hospital posts on the lower rungs of the ladder. In that cruel system the hospital would pay for a coach to take him where he was required but he could not take advantage of such generosity because he could not afford a sixpenny tip for the coachman. Nor did we know anything of his wonderful munificence when at last fame and success had crowned his labours.

Reading this book one wonders how it was possible for one man to do so much - research, operating, teaching both surgery and physiology, regular preaching, constant attendance to the affairs of the Open Brethren, editing, writing on medical and Christian

matters, endless correspondence, regular travelling to British Universities to speak to students, examining (for FRCS), unending study (he mastered both Greek and Hebrew), to say nothing of rearing three children. His secret? He never wasted a moment. Never once did his housekeeper see him idle over a period of thirty years.

This is an excellent and moving book which will be much appreciated, especially by those of us who knew Rendle personally. As a biography it is a little unusual — the aim being to let Rendle Short's deep convictions come to the fore as much as possible, including his advocacy of Open Brethren principles. This is as Rendle Short himself would have wished it — of this there can be no doubt.

REDC

Alan Eyre, *The Protesters*, The Christadelphian, 404 Shaftmoor Lane, Birmingham, B28, 8SZ, 1975 PB, 197pp, £1.50 (£1.70 post free).

From time to time since the early years of the Christian era men have studied the Bible for themselves and have discovered that its teaching is often far removed from what passed as Christianity in their day. The chief issues raised in this book are believers' baptism, prophecy (especially the millennial reign of Christ on earth), personal immortality dependent on acceptance of the risen Christ, the eternity or otherwise of hell, the nature of the Trinity (somewhat overdone especially as the subject has occasioned so much disagreement), Christian pacifism, love for and toleration of those who differ from us, the egalitarian structure of the church, and, finally, the significance of the Lord's supper.

Many of the little known characters here sketched are connected with the Radical Reformation and lived in the 16th century. In those days conversions were frequent and many evil men were won to the Lord. So long as they lived lives of sin the Church, RC or Protestant, left them in peace but too often when they read the NT and sought to follow its teachings they were persecuted to the death. Many stories of suffering and murder are here detailed together with some beautiful unembittered declarations of faith in Christ. Pressurised by Zwingli, the government of Zürich revived an ancient law of Justinian to make repetition of baptism a crime punishable by death (p.50). Many Brethren were executed by drowning — which Zwingli mockingly called "their third baptism". In 1529, at

Speyer in Germany, RC and Protestant authorities in conference agreed to inflict the death penalty on all "rebaptizers" in all territories of the Holy Roman Empire. Calvin was even more merciless than Zwingli and wrote a ferocious tract against "anabaptists". Many Brethren, Hübmaier, for example, escaped to Moravia. Later the persecution there was so intense that the country was depopulated. The RC church, accordingly, promulgated a dispensation permitting polygamy to restore the population (p.77)! Many thousands perished, every conceivable cruelty being freely employed. Some escaped far into Russia where their descendants live to this day. Luther advocated the severest penalties for arrested Brethren — between 1526 and 1530 over 3000 Brethren were murdered by his followers. A photograph shows the cages used at Nürnberg in which Brethren were exhibited: the iron work was so constructed that it was impossible to sit or stand in them. It was not a case of religious war — the Brethren were pacifists and carried no weapons.

William Tyndale was strongly influenced by the Vaudois and Brethren in Christ — he was deeply committed to believer's baptism, the second coming of Christ and the mortality of man on which, together with other issues, he broke with Luther. Sir Thomas More scorned his belief in Christ's return asserting that the faithful enter into bliss, not at the second advent, but at death to which Tyndale replied:-

I marvel that Paul has not comforted the  
Thessalonians with the doctrine, if he had  
wist it, that the souls of their dead had  
been in joy; as he did with the resurrection,  
that their dead should rise again

Like thousands of others Tyndale was martyred. Many other interesting characters are discussed, including Sir Isaac Newton who was an "anabaptist", by conviction, though secretly.

This is an impressive, well-written book. It is somewhat spoiled for the orthodox Christian by the prominence given at the end to the founders of Christadelphianism, John Thomas and Robert Roberts. The author thinks of Christadelphianism as the natural offspring of the Radical Reformation whereas many other Christian groups could make such a claim with equal propriety, moreover many of the views expressed by Christian Brethren in the past are widely held today among Protestants in all denominations. The views here singled out for comment are too confined to those expressing Christadelphian doctrines: thus there is little or no mention of salvation by faith alone and the oath-taking issue is

omitted. Nevertheless the book is scholarly, and appealing. The style is simple. Though there is no precise documentation, considerable research has obviously been involved in its writing. It deserves to be widely read. RCs and Protestants tend to be reared to see their spiritual forefathers on one side or the other: in fact both sides were diabolically cruel and merciless towards vast numbers of saintly Christian believers whose only desire was to follow the teaching of the Lord and His apostles.

Regretably there is no index.

D.L. Baker, *Two Testaments: One Bible*. IVP., 554 pp., £4.95.

The IVP has recently introduced the policy of publishing Ph.D. theses on important biblical topics, and this book is the first such to appear. In format it is reproduced photographically from the author's typescript, and its layout is easy to follow.

Dr. Baker gives an exhaustive survey of recent scholarly debate on theological relationship between the OT and the NT limiting his enquiry to the theological relationship and excluding linguistic, historical, ethical and other considerations so as to keep the material within manageable compass and on the grounds of the priority of the theological issue. Dr. Baker examines approaches to the relationship between the Testaments which have given undue priority to OT or NT to the detriment of the other, finds them inadequate, and then examines a number of 'biblical' solutions. He draws on Vischer's Christological solution and von Rad's 'salvation history' solution, though with reservations about both, and his own preferred understanding of biblical unity is typological. He is at pains to emphasize that this typology is in no way symbolic or allegorical but rather genuinely historical, being the study of historical and theological correspondences between patterns of events, on the basis of God's consistent activity in history. Thus in both testaments there is a unity of witness to God and his actions, a unity which is also Christological since Christ fulfills the promises of the OT.

The book is characterized by comprehensiveness of treatment, and each scholar's position receives judicious assessment. Occasionally the summaries of arguments are a little lengthy, particularly those of van Ruler and Bultmann. And sometimes the coverage is unbalanced. For example Vischer is given 20 pp while Barth, whose view is similar and from whom Vischer derived his general approach, is only given 2 pp, and that despite the admission that "in spite of the wealth of writing about Barth, there is no detailed study of his view of

the relationship between the Testaments" (p.230). Likewise G.E. Wright, who made "one of the most significant contributions to understanding the theological relationship between the Testaments" in his 'God who acts' is only given one page (p.327). Of course, the substance of Wright's position is given in the discussion of other scholars; but if his treatment was so significant does it not merit fuller discussion, if necessary at the expense of the other scholars mentioned?

It is a pity that no discussion of the question of canon is given, not even in an appendix. For it is important to the argument that the OT and NT give a fundamentally consistent witness of God in a way in which other ancient near Eastern and Rabbinic literature does not, and this is assumed throughout. Doubtless it is true; but it does not help the discussion concerning the role of e.g. the apocryphal and pseudepigraphic literature.

A notable feature is the extensive bibliographies cited; they are frequently inserted in the text and are all set out in a 145 pp bibliography at the end. They cover critical discussions of many leading scholars, especially Bultmann and von Rad, and also numerous other topics, particularly the relationship between history and theology in the biblical writings.

One is grateful for such a clear and full treatment of the unity of the two Testaments, one which will provide a useful basis for further work in the debate over the practical relevance of the OT for today.

WALTER MOBERLY,

Marjorie Reeves, *Joachim of Fiore and the Prophetic Future*, SPCK, 1976, 210 pp., £3.95.

In this fascinating sequel to her earlier book, *The Influence of Prophecy in the Later Middle Ages*, Marjorie Reeves sketches in the career and influence of one of the least known of great medieval monks. Joachim of Fiore was a Calabrian abbot, a contemporary of Richard Coeur-de-Lion (whom he met on Richard's way to the Crusades). In his early years he was under the influence of St Bernard of Clairvaux and joined the Cistercian order, but eventually he left to found his own community of St John in Fiore. Its career was not brilliant, and in 1570 it rejoined the Cistercians. But by then Joachim's fame and influence had spread far beyond the confines of either order.

Like many twelfth-century thinkers, Joachim was obsessed with history, especially the future. He regarded the witness of Scripture

as sufficient for the past and suggestive of the Last Things, but thought its silence about the present age a major difficulty. In the usual medieval manner he was convinced that this gap could be made up by an allegorical interpretation of the Bible, and his works were dedicated to this end. Miss Reeves rightly stresses the strong trinitarian basis on which his theories were constructed. According to Joachim, each Person of the Godhead revealed Himself in a particular dispensation of history. Miss Reeves is careful to point out, however, that Joachim never lapsed into tritheism and unfailingly stressed the unity of God, both in His essence and in His historical actions.

The most interesting section of the book deals with Joachim's doctrine of the new men, the *Viri spiritualis* who would arise in the last days to judge the world. This idea soon sparked off a number of millenarian holiness movements which troubled the later Middle Ages. Most of the remaining chapters deal with these groupings, especially the anti-clerical and anti-imperial factions in the Italian city-states. There is considerable overlap here with Norman Cohn's now-famous *Pursuit of the Millennium*, which should be read in conjunction with this book. Cohn gives a better overall picture of the period, especially in Germany, but the reader of *Joachim* will be grateful for the additional light it sheds on the main instigator of the quest. It will also be of interest to students of modern millenarianism, many of whose themes and exegetical methods were amply prefigured in the twelfth century. Joachim was a better theologian than his modern imitators however, and his views consequently are of much greater importance.

The chief fault of the book is that it says too much about fifteenth- and sixteenth-century prophetic movements (already well-covered by Cohn, and indeed by Miss Reeves herself) and too little about Joachim's own work. A detailed analysis of the latter is even more urgently needed now that his importance as a mystic and thinker is coming to be recognised. Another problem is that Miss Reeves tends to use medieval Latin spelling (e.g. *etas* for *aetas*) which is both disconcerting and unnecessary. It is also inconsistent through the book, which is bound to mislead readers unfamiliar with Latin. On the other hand the print and typeface are excellent, and largely free of errors. For those who wish to learn more about late medieval prophecy and its leading exponent, no better introduction could be recommended.

GERALD BRAY



## SHORT REVIEWS

John White's *The Cost of Commitment* (1976, IVP, PB, 91pp £0.60) is a terse, very helpful study of the suffering which must come to every disciple who is faithful to Christ.

Derek Kidner's *A Time to Mourn and a Time to Dance* (110ff, £1.20), is a short commentary on Ecclesiastes. The relevance of this book to mankind today is emphasised. Today, as in ancient times, vanity, emptiness, pointlessness is the lot of all who do not remember their Creator.

M.A. Smith, in *The Church under Siege* (IVP, PB, 277pp £2.25) tells the story of Christianity from Constantine to Charlemagne. The book is well illustrated, the printing and format excellent and the writing most readable and interesting. The author draws lessons from the past, for example, that failure to define meanings exactly can lead in the end to all kinds of dissension. The book, a continuation of the author's earlier *From Christ to Constantine* is worthy of wide circulation.

H.M. Carson's, *Dawn or Twilight* (IVP, 1976, 172pp, £1.00) is a well revised edition of the author's *Roman Catholicism Today* (1964). It is an excellent study of the contemporary RC world. Stress is laid throughout on the large amount of agreement between RCs and Protestants, yet no divisive issue is shirked. Catholic Pentecostalism, and the new wind blowing in RC circles receives due attention.

The Sheldon Press have republished Carol Blum's *Diderot: the Virtue of a Philosopher* which first appeared in 1934. (1974 182pp, £5.50). Diderot, who for many years sponged on his father whose advice he rejected, wanted nevertheless to feel respectable and to be admired by others. Rejecting religion; he sought virtue without it, in conformity with the prevalent 18th century view that a society of atheists might be as virtuous as a society of Christians. This book is a study of Diderot's self-questioning attempts to attain virtue.

Stanley L. Jaki has recently translated and edited J.H. Lambert's *Cosmological Letters on the arrangement of the World - Edifice* (1976, Scottish Academic P. £6.50). The letters were written in 1760 onwards. The work is of historical interest.

Like many others of his time Lambert, a foremost mathematician, supposed that the universe is thickly populated with living thinking beings which all heavenly bodies are well able to support. This view, essential to a teleological theory of nature as the author understood it, was contrary to the evolutionary view, to the notion of the infinity of the Universe, and to the possibility of catastrophes by collision of heavenly bodies. The book "illustrates both the success and the risk of trying to fathom the construction of the Universe mainly with the eyes of the mind."

\* \* \*

We have received vol. 5, with a combined index to vols. 1-5 of *Symposium on Creation* edited by D.W. Patten (Baker Book House, 1971-5). The new volume contains some interesting articles, among them a documented and able account of the Galileo story ("Galileo and the Church by T.H. Leith) and an interesting article on "Genetics and Jacob's Flock" by W. Dennis Burrowes.

Of especial interest also is a paper by Robert L. Whitelaw on radiocarbon datings (see this JOURNAL 99, 14). The C-14 datings published in the Journal *Radiocarbon* to the end of 1974 now number 20,000 and still the same pattern emerges, suggesting that living matter was common before 5000 BC but then suddenly became rare, building up again steadily to modern times.

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