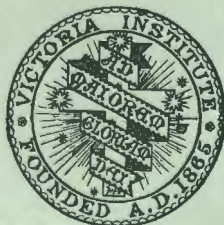


Faith and Thought

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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 (Vo. 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, 29 Queen Street, London, EC4R 1BH. The price of recent back issues (when available) up to the end of Vol. 100, is 80p (post free), thereafter £1.50.

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** £10.00. **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.

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FAITH AND THOUGHT

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

AGM 1979

The report of the AGM published in this JOURNAL, vol. 106, No. 1 did not include item 6 of the business contained in the formal notice sent out in advance of that meeting. The amendments were detailed in that Notice and duly carried at the AGM.

As it is now ten years since the Constitution was previously published we are printing it below and all the amendments which have been previously agreed at different dates are incorporated in the document. The objects of the most recent amendments were the clarification of a procedural rule and the need to increase the size of Council.

The Constitution

Adopted at the first Annual General Meeting of the Members and Associates, May 27th, 1867, with Revisions of 1874-75, 1910, 1912, 1920, 1938, 1939, 1952, 1967 and 1979.

1. *Objects*

THE VICTORIA INSTITUTE, or PHILOSOPHICAL SOCIETY OF GREAT BRITAIN, was established in 1865 for the following objects: viz:-

First To investigate fully and impartially the most important questions of Philosophy and Science, but more especially those that bear upon the great truths revealed in Holy Scripture: with the view of reconciling any apparent discrepancies between Christianity and Science.

Second To associate together men of Science and authors who have already been engaged in such investigations, and all others who may be interested in them, in order to strengthen their efforts

by association; and, by bringing together the results of such labours, after full discussion, in the printed Transactions of an Institution to give greater force and influence to proofs and arguments which might be little known, or even disregarded, if put forward merely by individuals.

Third To consider the mutual bearings of the various scientific conclusions arrived at in the several distinct branches into which Science is now divided, in order to get rid of contradictions and conflicting hypotheses, and thus promote the real advancement of true science: and to examine and discuss all supposed scientific results with reference to final causes, and the more comprehensive and fundamental principles of Philosophy proper, based upon faith in the existence of one Eternal God, who, in his wisdom, created all things very good.

Fourth To publish Papers read before the Society in furtherance of the above objects, along with full reports of the discussions thereon, in the form of a Journal, or as the Transactions of the Institute.

Fifth When subjects have been fully discussed, to make the results known by means of Lectures of a more popular kind, and to publish such Lectures.

Sixth To publish English translations of important foreign works of real scientific and philosophical value, especially those bearing upon the relation between the Scriptures and Science: and to co-operate with other philosophical societies at home and abroad, which are now or may hereafter be formed, in the interest of Scriptural truth and of real science, and generally in furtherance of the objects of this Society.

But so that nothing shall be done which shall not directly or indirectly advance the Christian religion as revealed in Holy Scripture.

2. *Membership*

(a) The Society shall consist of Fellows and Members elected as hereinafter set forth and signifying interest in the Society's charitable work by financial contributions thereto.

(b) The roll of Fellows of the Society shall include such as are so designated on the 17th day of November 1952 and such other persons (whether previously Members or not) as the Council may deem proper.

(c) The roll of Members of the Society shall include those so designated on the 17th day of November 1952 and all others subsequently admitted by the Council as Members.

3. *Council*

The government of the Society shall be vested in a Council (whose members shall be chosen from among the Fellows and Members of the Society *and be professedly Christians*), consisting of the President, the Honorary Treasurer, and not exceeding thirteen others.

4. *Election of Council and Officers*

The President, the Vice-Presidents, and the Hon. Treasurer shall be elected annually at the Annual General Meeting (which shall normally be held on the Saturday nearest the 24th of May) with power to the Council to fill up any casual vacancies.

At the Annual General Meeting in each year, one-third of the other members of the Council or if their number be not a multiple of three then the number nearest to one-third shall also retire in order of seniority of election to the Council, and be eligible for re-election: as between members of equal seniority the members to retire shall be chosen from among them by ballot unless such members shall agree between themselves. Casual vacancies may be filled up by the Council and shall require ratification at the next Annual General Meeting.

5. For such annual elections nominations may be made by Fellows of the Institute and sent to the Secretary not later than 1st March in any year. The Council may also nominate for vacancies, and all nominations shall be submitted to the Fellows and Members at the time when notice of the Annual General Meeting is posted.

If more nominations are made than there are vacancies on the Council the election shall be by ballot amongst the Fellows and Members in good standing and present at the Annual General Meeting.

6. *Membership Procedure*

Any person desirous of becoming a Fellow or Member shall send to the Secretary an application for admission, which shall be signed by one Fellow or Member Recommending the Candidate for admission. Upon such application being transmitted to the Secretary, the candidate may be elected by the Council, and enrolled as a Fellow or Member of the Victoria Institute, in such manner as the Council may deem proper. Such application shall be considered as *ipso facto* pledging the applicant to observe the rules of the Society, and as indicative of his or her desire and intention to further its objects and interests; and it is also to be understood that only such as are professedly Christians are entitled to become Fellows.

The Council shall have power when it deems proper to delete the name of any Fellow or Member from the roll.

7. *Council Business and Rule Making*

The quorum for meetings of the Council shall be five. The Council may make such rules as it considers desirable for furthering the objects of the Society and regulating its business including (a) the setting up of an Executive Committee to include the Chairman of Council, the Hon. Treasurer and another or others of the Council to transact routine business (b) the setting up of other *ad hoc* committees to which may be appointed persons who, though not members of Council, are specially qualified to advise on some particular subject (c) arrangements for associating university and other students and Christian workers and others as Associates in the work of the Society.

8. *Papers*

Papers presented to the Society shall be considered as the property of the Society unless there shall have been any previous engagement with its author to the contrary, and the Council may cause the same to be published in any way and at any time it may think proper.

9. *Property Trusteeship*

The whole property and effects of the Society shall be vested in such Bank or Trust Corporation as the Council may direct and held in trust for the Institute. The Council is empowered to invest from time to time in or upon any investments for the time being authorised by statute for the investment of trust funds by trustees, and in and upon such other investments as the Council shall be advised by competent stock and sharebrokers and the Council shall have the usual powers of trustees in regard thereto.

10. *Funds, etc.*

All moneys received on account of the Institute shall be duly paid to its credit at the Bankers, and all cheques shall be drawn, under authority of the Council, and shall be signed by any member of the Council and countersigned by the Honorary Treasurer or the Secretary.

11. *Audit*

The accounts shall be audited annually by a Chartered Accountant to be elected at an Annual General Meeting of the Society for the following year, and this Chartered Accountant shall make a written Report to the Council at the first Meeting after such audit, and also to the Institute, upon the day of the Annual General Meeting next following — stating the balance in the Treasurer's hands and the general state of the funds of the Institute.

12. *Changes in the Constitution*

No change in the Constitution or the policy of the Society shall be decided upon by the Council without prior notice being given in writing to the full Council and all Vice-Presidents and past Presidents at least six weeks before the meeting at which such change shall be voted upon and all those entitled to receive such notice shall be entitled to attend, speak and vote at such meeting. Any such change shall require ratification at the next Annual General Meeting.

THE FUTURE OF THE INSTITUTE

A special combined meeting of Council and the Editorial Committee was held on 7 November 1979. The meeting was held to discuss the current state of the V.I. in all its aspects. As all readers of FAITH AND THOUGHT will know, a questionnaire was sent out in June 1979 and an analysis of the replies and comments made was circulated prior to the meeting.

In addition the provisional accounts were available. The year ended in September showed a slight surplus but this was entirely due to generous donations received as a result of the appeal and could not be expected to recur. An increase in income of about £2000 per annum (100%) is necessary for the Institute to continue to function effectively.

Almost all of the replies to the questionnaire and letters received expressed a strong desire for the V.I. to continue, although a few indicated that their support was conditional upon the V.I. making certain changes. The views of those present at the meeting were in broad agreement with the majority of the correspondents and the discussion continued on three main areas.

- (1) The objectives of the V.I.
- (2) FAITH AND THOUGHT.
- (3) Meetings.

Objectives

It was clear that the areas of the V.I. and the Research Scientists' Christian Fellowship (RSCF) overlapped, partially but not completely, and that the RSCF and the Universities and Colleges Christian Fellowship (UCCF) had a larger membership. However the V.I. was concerned with broader issues than RSCF, and did not exclude non-graduates.

It was felt that many members of UCCF were ignorant of the existence of the V.I. and that every effort should be made to dispel that ignorance. The current aim of the V.I. was to provide informed comment on science and its implications, rather than to make contributions to original scientific thought, which should be made within the appropriate specialist journals. The emphasis both in meetings and the JOURNAL, should be on review articles and comments on current thought, designed to meet the needs of those *not* specialising in the areas in question.

FAITH AND THOUGHT

A number of replies to the questionnaire indicated dissatisfaction with the journal in its present form. Some felt that *NEWS AND VIEWS* should be produced separately as a newsletter (perhaps monthly) and many wanted the quality of printing to be restored. It was agreed to retain *NEWS AND VIEWS* for the present and to improve the production if possible within the current financial constraints. It was also agreed to increase the size of the Editorial Committee, it was suggested that the Committee might go to Cambridge for a meeting to see how best to help the Editor.

Meetings

The need for more discussion at meetings, aided by prior circulation of abstracts of papers if possible, was emphasised. The possibility of having regional meetings jointly with RSCF was to be investigated.

Finally it was agreed that membership subscriptions would not be increased until 1981 but that an increase then was inevitable. It was decided that the Library Subscription should be raised to £10.00 starting with vol. 107.

EDITORIAL

This issue of *FAITH AND THOUGHT* (vol.107 No.1) is being published before that of vol. 106, Nos. 2 and 3 combined. The latter is due to contain the material given at the May Symposium 1979 on "Ideology and Idolatry in British Society" together with other material by the Ilkley Study Group of christian sociologists. However, there have been delays in collecting the material together and it was thought better to proceed at once with the publication of vol. 107, No. 1, rather than wait until the completion of vol. 106. It is hoped however that this will not be long delayed.

News & Views

THE ALTAR

According to Exod. 27:1-8 (see also 38:1-7) God commanded Moses to have an altar constructed on which sacrifices were to be burnt. The dimensions were to be 5 x 5 x 3 cubits (say 7½ x 7½ x 4½ feet) and the structure was to be made of acacia wood which was then to be covered with sheet bronze.

Wood was burned on this altar and the carcasses of animals, to be sacrificed after cutting into pieces, were either consumed in the flames or roasted for eating after dedication to God.

In a recent article (*Palestine Exploration Qtly*, 1978, 110, 35) Niels H. Gadegaard argues that the description (Ex.27) of the altar, allegedly written by 'P', must be legendary. The reasons he gives are (1) that a wooden altar could not possibly have withstood large fires; (2) that ancient bronzes which contain 10-17% of tin all melt within the range 755-1010°C and that fires would have melted them. A wood fire would give a temperature of 1000° and 800° even in the ashes. No bronze would withstand constant fire on its surface: even if it did not melt the microstructure of the metal would change resulting in loss of strength.

Gadegaard concludes that an altar of the kind described in Ex.27 could never have been used to burn sacrifices. He cites the story of how, at the dedication of Solomon's temple (1 Kings 8:64) burnt offerings were offered in front of the temple "because the bronze altar before the Lord was too small to hold the burnt offerings...." and he suggests that perhaps the same was done in earlier times. However, it is evident from the text that this was most exceptional. (Incidentally Solomon's altar was much larger than that of Ex 27 - 20 x 20 x 10 cubits, 2 Chron. 4:1).

Gadegaard's difficulties seem rather artificial. The wooden structure, which was made of planks, was hollow, ("make the altar hollow, out of boards", Ex. 27:8) and was presumably a bare framework to be covered with metal. There is no reason to think that the bronze sheeting withstood repeated fires. Even if, in the central area, the metal melted through there was a bronze grid below ("Make a grating for it, a bronze network, ... put it under the ledge of the altar so that it is half way up the altar" vs 4,5) which would have served to prevent the entire fire and sacrifice falling to the ground.

Since the area was quite large, $7\frac{1}{2} \times 7\frac{1}{2}$ feet, with the fire in the middle, the wooden support under the metal round the rim need not have become unduly hot, especially as blood was sprinkled "against the altar on all sides" (Lev. 1:5; 3:8.) That occasional replacement of the metal was necessary is evident from Num. 16:36-39 where we learn that 250 censers were hammered out "into sheets to overlay the altar". The implication is that bronze sheets were kept in store as replacements. Doubtless the wood was also replaced when necessary. Gadegaard's article is a good example of how elementary science can be misused to discredit the Bible.

SMOKING AND SELF-DESTRUCTION

Argument on this subject is perennial. Tobacco companies are now being blamed, apparently rightly, for exporting to Third World countries high tar tobacco cigarettes of a kind that they would be unable to sell in the West (Mike Muller, *New Scientist*, 8 June, 1978, p. 679) M.J. Leach, of the British-American Tobacco Company, argues that the case against smoking has not been proved for "no amount of statistics can ever reveal causality". Which is true enough from a philosophical point of view, but then as Mike Muller asks in reply, "How do you show that gravity causes apples to fall from trees?" — for the only evidence is statistical! (*New Scientist*, 13 July, 1978, p. 133).

Asbestos is now regarded as a carcinogen: the incidence of lung cancer among asbestos insulation workers is eight times that for the population at large. However the risk for non-smoking asbestos workers is only marginally increased, while that for smokers is increased 92-fold. An explanation has been suggested (*Nature*, 1978, 275, 430).

It is possible that the danger of smoking is not confined to those who actually smoke. Professor R.J.C. Harris, showed that lung cancer could be induced in 4% of experimental mice by letting them breathe cigarette smoke for only 12 minutes a day for their normal life span (mentioned in a Letter, *New Scientist*, 27 Ap. 1978).

Christians, brought up as I was to think of smoking as sinful (or semi-sinful) must often have wondered if such training was not unduly narrow. It looks quite sensible today! While on the subject, the connection between smoking and cancer is no new discovery. I first heard of it around 1925-27 or possibly earlier and well remember a discussion on the subject (probably in 1928) with the late Dr F.C. Champion (writer of physics text-books) when we were fellow students at St John's College, Cambridge.

In a study of the causes of death of patients under the age of 50, conducted by the Royal College of Physicians (compiled by Sir Cyril Clarke, *British Medical Journal*, 13 Oct. 1978) it transpired that in about 40% of the cases studied the patients caused or contributed to their own deaths. This was chiefly by over-eating, drinking, smoking or refusing medical help that was offered or readily available. The wastage involved is enormous; an example is cited of a man of 24 who suffered brain damage and cardiac arrest from excessive drinking and for whom from the outset it was clear that recovery was impossible. For four months this man occupied a bed in a teaching hospital before he died. It would be natural to think that semi-suicide on the scale at which it now occurs was the result of lack of education or of intelligence. It is reported, however, that "there was little to indicate that lack of intelligence played any significant part". Men need the power of the risen Christ if they are to conquer themselves. We are often reminded by atheists that sound ethical principles can be formulated without mention of God. This is true but when a man desires to do wrong, it hardly helps him to know what is right. We need God to change desire (Ezek. 36:26 etc.).

DOLPHINS

(See this JOURNAL 100, 121; 101, 8) For some unknown reason dolphins (porpoises) accompany schools of tuna fish in the sea. As a result large numbers of dolphins (100,000 in 1976) are unintentionally caught and drowned in tunamens' nets and many attempts have been made in USA to save the animals by legislation and by changing fishing techniques. (*New Scientist*, 26 May 1977 p.445).

The killing of dolphins by Japanese fishermen who complain that the animals reduce their catch, has occasioned many protests in recent years. In a bay near the tip of Honshu Island, Japan, a glass fibre model of a life-sized killer whale was recently towed near 15 dolphins while recordings of a killer whale's cries were broadcast through the water. The dolphins took fright as expected and it is hoped that if model whales are made available, Japanese fishermen will no longer want to kill the animals. Recordings of distress cries of dolphins will, it is hoped, add to the effectiveness of whale models and sounds. (30 Nov. 1978 *Times*).

According to a report from Johannesburg "four fishermen have claimed that they were saved from being dashed to death on rocks in a thick fog by a school of dolphins which nudged them into a sheltered cover near Cape Town" (31 May *Times*). According to a *Times* report from Moscow (dated Aug 15 1978) Soviet fishermen off Kamchatka saw a sea lion surrounded by killer whales. It

cried out for help and immediately dolphins formed a ring round it and saved it from its enemies. (It should be added that recent reports of a killer whale in captivity show them to be gentle animals, even towards dolphins in the same water — though in the wild they do sometimes kill dolphins.)

The friendliness of these creatures is one of the many indications that nature is by no means all red in tooth and claw, cooperation being more important than competition. (Compare Prince P. Kropotkin, *Mutual Aid*, 1902, Lane edition 1972.) The dolphin's brain is as large as man's and comparably convoluted. It is said that there is no record of a dolphin attacking a man, even when ill-treated. The animals are highly intelligent and can even be taught to 'talk' in a simple way, as seen on TV. (See R. Sténuit, *The Dolphin: Cousin to Man*, Pelican, 1971; K.E. Fichtelais, *Man's Place: Intelligence in Whales, Dolphins and Humans*, 1973.) Their presence in the oceans may be seen by the Christian as a God-provided means for bringing even the fish of the sea (Gen 1:26) under the dominion of man.

A NEW ACCOUNT OF THE ORIGIN OF WRITING (by Colin J. Hemer)

Modern excavations all over the ancient Near East have brought to light thousands of small objects of fired clay which have in general received scant attention, being variously and conjecturally identified according to their differing shapes as nails, polishers, plugs, gaming pieces, female symbols, slingstones, marbles, pot-lids, and the like, when they are noticed and described at all.

In recent years Professor Denise Schmandt-Besserat has made a special study of these neglected objects, documenting her findings in several articles culminating in a contribution to the May-June 1979 issue of *Archaeology*.¹ She demonstrates their extraordinary abundance and spread in place and time, from the ninth millennium BC to the fourth, and from Beldibi, near Antalya in SW Turkey, to the eastern shore of the Caspian, and southward to Jericho and even Khartoum. Thus from Tepe Asiab, near Kermanshah in W. Iran, the site of an early farming community of 10,000 years ago, come 220 items of about 1-2 cm, round pellets, coils, discs, cones, ovoids, triangles, crescents, rectangles, T-shapes and animal heads, all in shapes easily moulded with the fingers before firing, some types with incised markings, some occurring in two consistently distinct sizes, and the spheres occasionally fractioned. The case seems clear now that these varied forms had a common function, and served as some kind of token for reckoning.

After millennia of remarkably widespread stability and continuity there seems to have been a major economic revolution about 5,500 years ago. This was marked by a new development of city life and the specialization of society, accompanied by a great increase of

long-distance trade and the consequent use of travelling agents and intermediaries. At the same time there was a corresponding proliferation and specialization of the tokens, which now attained their greatest abundance. The system became much more complex, with new shapes and distinguishing marks. Many of the tokens were now perforated, and thus adapted to be strung together. This suggests the possibility of communicating quite complicated transactions even between speakers of different languages. But the most interesting new development is that of the *bulla*, a hollowed sphere of baked clay, in size up to that of a tennis ball, whose use soon replaced the awkward stringing of perforated tokens and served as an "envelope" for them. Of some 300 specimens known from a wide area the greater number are sealed and intact, and rattle with the enclosed tokens, which may be tightly packed inside. They are authenticated by the seal device of the sender, and sometimes also by those of others, agents or witnesses. It is suggested that many of these complete examples are duplicates retained in archives. Very few such have yet been opened.

In a few known cases from two sites in Iran and one in Syria other markings have been found on the surface of a sealed *bulla* picturing the tokens inside. It was a short step to preserving the pictographic record on separate, the first convex and *bulla*-like, tablets instead of duplicating the whole contents. It is argued that this paved the way directly for a rapid transition to writing: the token system and the new discovery coexisted for a time, but in the early third millennium the tokens reverted to the reckoning of the home and market-place as in the abacus, while writing became launched on its separate and developing career. Professor Schmandt-Besserat now offers identifications of individual tokens, as they correspond with the earliest preserved Sumerian pictographs: a disc with a cross incised on one side stands for "sheep"; an ovoid with an incision across its greatest width (looking rather like an ice-cream cornet) stands for "oil". She also finds a sophisticated numerical system expressed by differences of size and marking as well as shape. These, and the corresponding Sumerian signs, are essentially abstract and conventional rather than pictorial. If she is substantially right in her reconstruction, writing originated not as a pictographic code determined systematically by the Sumerians on their precursors, but as a virtually fortuitous transition from a far more ancient and widespread pattern of reckoning and recording.

NOTE

1. D. Schmandt-Besserat, "Reckoning before Writing", *Archaeology* Vol.32, No.3 (May-June 1979), pp.22-31 (well illustrated); cf. "The Earliest Precursor of Writing", *The Scientific American* No.238 (1978), pp.50-59; "The Earliest Uses of Clay in Anatolia", *Anatolian Studies* Vol.27 (1977), pp.133-150.

ATHEISM AND THE NEW SCIENTIST

Secularists seem to have developed a clever trick for combatting Christianity. First of all mock at it, then, when objections are raised, choose the most extreme and unreasoned replies and give publicity to these only.

This remark is occasioned by a recent as well as older issues of the *New Scientist*. On 26 July 1979 Donald Gould, a regular writer in the magazine, published a satirical page on Divine Intervention. A RAF Hunter plane had recently crashed in the village of Tintagel, Cornwall, but by a series of amazing coincidences did little damage and hurt nobody. The local vicar, naturally enough, held a thanksgiving service and in his sermon attributed the good fortune of the village to the goodness of God. Gould, of course, true to type, mocked at the idea that Providence was involved. Why did not God let the beastly contraption fall in the sea, he asks, or was it that the inhabitants of Tintagel have some nasty little habits and "the Lord wanted to scare the living daylights out of them... I have another theory. I don't think God had anything to do with it. If He was that smart at handling bedevilled aeroplanes, he wouldn't have let that DC10 crash, would he? But He did."

A reply appeared in the issue for 23 Aug. It is headed *Vengeance is mine*. It says only that the writer (A.R. Mears) has "read the foolish piece of mockery contributed by Donald Gould" after which Rom. 1:18 is quoted: "For the wrath of God is revealed from heaven against all ungodliness of men who hold the truth in unrighteousness", a verse which is said "to be pertinent to his [Gould's] case". One can well imagine how Gould and his atheist friends reacted to this. I wonder how many other replies the *New Scientist* received to Gould's contribution. I myself wrote (letter acknowledged) pointing out that there are quite good empirical grounds for believing in Providence, quite apart from the difficulty of explaining it, and that for this reason mockery is unwarranted. To quote —

... No one pretends to understand the workings of Providence but it can hardly be claimed that evidence for its reality is lacking. Seeing that biblical miracles of a seismic nature are recorded as having occurred on or near geological fault lines (see *New Scientist* 7 June, 1978) they can hardly be dismissed one and all as mythological, but for God's people their timing was surely providential.

Coming to modern times was it a coincidence only that Hitler's Germany did not develop the nuclear bomb? Segré and Fermi observed uranium fission in 1934 but could not understand their observations, even when, in a published paper, Ida Noddack suggested fission.

Looking back, Segré says: "It (Noddack's paper) said that fission had been observed. Fermi and I read it and we still did not discover fission." The whole story of our failure is a mystery to me. I keep thinking of a passage from Dante. 'O crucified Jove, do you turn your just eyes away from us, or is there here prepared a purpose, secret and beyond our comprehensions?' (W. Emilio Segré, *Enrico Fermi*, 1970). Italy was Fascist in 1934 and Fermi owed his job to Mussolini. Had the discovery been made that a bomb was possible, Germany might have had it ready by 1939 — might have conquered the world by blackmail.

Rocket missiles, too, might have been developed earlier than they were. Was it by chance only that field mice impeded the pre-war work or, later, that in March 1943 Hitler dreamed that no rocket would land on England and so refused priorities for development (W. Dornberger, *V2*, 1954). Has Providence no part in the fulfilment today of 2½ thousand-year old prophecies concerning Israel? There is so much else that might be said. (See W.G. Pollard, *Chance and Providence* 1958.)

Dismiss it all as coincidence if you can Donald Gould, but at least remember the Golden Rule. Would you like to see the *New Scientist* used as an organ of mockery for beliefs such as yours?...

HUMAN RIGHTS — ISLAM

Human rights are much in the news, especially since the Helsinki Agreement which is not being honoured by Russia. An anonymous but highly informative article in *Circular* (No.14, July 1979) published by Clearing House on the International Conferences of Reformed Institutions for Christian Scholarship (The Director, Potchefstroom University for Christian Higher Education, Potchefstroom 2520 S. Africa: issued free) deals with what is certainly a more serious, but more neglected topic — the total denial of human rights to Christians as well as Jews in Islamic countries. The few passages in the Koran which speak of tolerance towards Christians and Jews are quoted, but Muhammad's teaching is ambivalent and in one passage (Surah IX: 29-31) he speaks of both as enemies to be tolerated only if they are humiliated by paying tribute to the Moslems. In all Moslem lands they are to be treated as inferiors.

As a matter of history Moslems have never been tolerant, even in Egypt where the Coptic Christians (now numbering 6m) long predated the Moslems.

The cases of the Copts and Palestinians are considered in some detail. "Nowhere in the Moslem world (except perhaps in Indonesia) do Moslems feel that a non-Moslem is one of us. And, nowhere do the minorities feel accepted." (W.C. Smith, *Islam in Modern History* 1959.)

In Lebanon Christians fear that if the Moslems gain more power the country will become totalitarian as has happened in "almost every Arab country which achieved independence since the end of WW2". To ensure that Moslem oil keeps flowing to the West persecution of Christians and Jews is not publicised in christian countries.

RELIGIOUS WICKEDNESS

Although the Koran speaks of God as all-merciful, such an idea seems foreign to many Moslems. The *Daily Telegraph* recently reproduced a photograph of devout Moslems, praying with their heads touching the ground. They were chanting in unison, "Death to the Shar". In Iran, Ayatollah Khalkhali, the Revolutionary Court Judge, was reported to have ordered a death squad to kill the Shah; "I order all students and Moslems in the US... to drag him out of hospital and dismember him". Ayatollah Khomeini, for his part, said, "I hope it's correct that the Shar has got cancer" (*D. Telegraph* 26 Oct. 1979). When President Sadat of Egypt said that such sentiments were a disgrace to Islam, Iranian leaders urged the Egyptians to kill Sadat too.

In this age of cruelty what example does the christian church set? Sometimes it is even worse than that set by Islam. Though many RCs we meet are kind and good people, what shall we make of the report by Major Nick Ridley of the Queen's Own Highlanders who describes a recent episode in South Armagh? At the border village of Crossmaglen the faithful were preparing for an important visit by Cardinal Fee, RC Primate of all Ireland. To make for a more friendly atmosphere Ridley lifted the road blockade for the occasion, with the result that the IRA planted a bomb in the village square which killed a Highlander. "The locals thought it was great fun" said the Major, "They stood around gigling with amusement as the soldier was lying bleeding on the ground. There was even a doctor there who made no attempt to help him." (*D. Telegraph*, 15 Oct. 1979). What, we wonder, did the Archbishop preach about? The RC hierarchy is now proceeding to punish scholars (notably Prof. Hans Küng of Tübingen) for lack of subservience to RC dogmas. We hear of no condemnation of those who flagrantly disobey the Sermon on the Mount.

POWDERS

If a brittle particle is squeezed sufficiently it will probably crack. When a powder is ground in a mortar the particle size is usually reduced. J. Kendall has worked on the theory of the powdering of solids (*Nature*, 1978, 272, 710). He finds that the force needed to crack a particle, and so reduce its size, increases rapidly as the particle becomes smaller: below a certain critical size no cracking occurs: instead the particle becomes soft and flattens. For each kind of solid there is, therefore, a limit to the fineness which may be achieved. Moreover prolonged crushing and grinding produces particles of uniform size — the harder the solid the smaller the size.

Thus nature sets a natural limit to the fineness of powders. Providentially so, for otherwise every attempt at grinding and crushing would produce at least a small proportion of powder so fine that it would become air borne and very soon would enter our lungs, often causing damage. Gold miners have experienced lung damage enough from the small particles formed by grinding silica (in which the gold is found) which is a very hard mineral: we may be grateful that such hard materials are rarely encountered.

Perhaps some such thoughts occurred to Isaiah (28:28) "Corn is crushed, but not to the uttermost, nor with a final crushing". Cartwheels crush it "but they do not grind it fine". "This also comes from the Lord of hosts, he is wonderful in counsel and excellent in wisdom."

FORESTS AND GRASS

Concern with erosion is growing but no one knows how to stop the coming inevitable disaster. "Nowhere in the world is tropical moist forest being managed on a sustainable basis. Indeed, not a single ecologist or forester has a half-way decent theoretical idea about how this could be done" say two tropical ecologists working in Costa Rica. The only safe course is to leave the tropical rain forests severely alone but "the Third World does not always respond very sympathetically to being told that half its national territory is a global lung, a genetic treasure house, or part of the world's heritage of wildlife". The Western world, too, cannot easily be persuaded to dispense with lumber companies, to say nothing of sugar, bananas and rubber plantations growing on land stolen from the rainforest.

Looking ahead the rainforest will have disappeared within 20 years — or even 10 — to be replaced in large measure by poor soils, steep slopes, and land too wet or too dry for sustainable agriculture. (*New Scientist* 19 Ap. 1979 p.170.)

It has long been appreciated that the burning of wood (and coal) raises the CO₂ content of the atmosphere. The loss of forests which convert CO₂ to O₂ leads to the same result. But a more serious effect has recently been pointed out. When a rainforest is destroyed, bacteria set to work decomposing the vast quantity of humus in the soil and generating 4 or 5 times the quantity of CO₂ which the burning of the wood would produce. Taking the world at large CO₂ produced in this way greatly exceeds that produced by the burning of wood and fossil fuels.

Repeated rises in the price of oil mean that Third World countries cannot afford to buy it and turn for fuel to wood instead, thus increasing erosion.

Not only are forests disappearing but erosion is widespread. The ease with which well intentioned but doctrinaire policies can lead to the spoilation of the environment is well illustrated by a report from China. Peking has been suffering from severe dust and sand storms and these have been attributed to winds from the inner Mongolian deserts. But a recent study puts the blame nearer home. Chinese children have been taught at school that grass breeds mosquitoes and have been set to work by their teachers to pull up grass in "sanitation campaigns". Not surprisingly much of the land has been eroded. (*D. Teleg.* 5 Ap. 1979.)

DOOMSDAY

A few years back Isaac Asimov, the voluminous science writer (100 books to his name) had a biting letter in the *New Scientist* (18 May 72). It is concerned with the attitude of some of our science journals to the current doomsday controversy. He told us that many people say, "Do not talk too much about the perils with which science is confronting mankind, for if you cry Wolf!, Wolf! to often, you will make people more careless and indifferent than ever. Then it will be the fault of the doomsday prophets if calamity comes".

"That's pretty good", says, Asimov. "If there is no catastrophe the doomcriers were idiots and if there is a catastrophe the doomcriers are guilty." At long last, he says, he can now understand how the English lived through the 30s without being roused to the Nazi menace. In his naivety he had blamed the Baldwins and the Chamberlains, but now he sees that it was all the fault of the vile doomcrier Winston Churchill, whose warnings were so counterproductive that when war came no one was ready.

The problem is age old. Jeremiah, by prophesying the fall of Jerusalem, was blamed for undermining the desire of Israelites to fight for their King and country. That fearful judgment will follow sin is a basic Christian tenet, but most Christian preachers hold that preaching about hell will prove so counterproductive that it would be positively wrong.

While on this subject, it is assumed in many quarters that those who preach hell are sadistic. It is popularly believed that Wesley preached hell fire and that this was the basic cause of the success of his preaching — an idea seriously sponsored by William Sargent in *Battle for the Mind*. Anyone who thinks this should be encouraged to read Ian Ramsay's scholarly book, *Battle for the Free Mind* (1967). John Wesley believed in hell, but he hardly ever preached about it. The notes of 40,000 of his sermons have been examined: only one is about hell and he records that it was without effect on the audience! (p.124). Yet Sargent comparing converts with Pavlov's dogs, assumed that hell-fire was the revivalist's way of arousing tension, so necessary before its release in abreaction and conversion.

SPONTANEOUS GENERATION — LYSENKO

Fred Hoyle and Chandra Wickramasinghe have published in detail their view that life arose in the first place, not on earth, but in space. (*Life Cloud: the Origin of Life in the Universe*, Dent, 1978). Speaking of origin-of-life experiments such as those of Stanley Miller, they say that the results are "technically impressive, but we doubt their relevance to primitive earth conditions or to the start of life". They doubt if the starting conditions were ever correct, or if there was time enough available. "In accepting the primeval soup theory of the origin of life scientists have replaced the religious mysteries which shrouded this question with equally mysterious scientific dogmas."

A century ago, they remind us, Louis Pasteur after his epoch making experiments, told the French Academy that the theory of spontaneous generation would never recover from the mortal blow it had received. But "we can see it revived now only in a somewhat different context — spontaneous generation, not of fireflies from dewdrops, but of prebiotic, molecules and primitive life in thunderstorms". It may be doubted, however, if the space cloud variety of spontaneous generation will ever prove more palatable than the theories of yesterday or those current today.

Attention may be drawn to John Farley's book, *The Spontaneous Generation Controversy from Descartes to Oparin* (John Hopkins University, 1977). Two types of the hypothesis are distinguished. Life may have come into existence mechanistically but by a rare

chance, or it may have arisen by the operation of a natural law with life as the inevitable outcome. Most materialistic scientists in the West, H.J. Muller for example, have taken the first view but Herbert Spencer took the second and it was followed by Oparin in Russia. This view is, of course, almost tantamount to magic for there is no evidence that inorganic molecules possess the propensity to arrange themselves in such a way as to make the wonderful 'inventive' mechanisms essential to life. The author draws attention to the interesting fact that Oparin was a strong supporter of Lysenko whose theories he warmly supported. (p.178) Denying the existence of genes and the whole gamut of western genetics, Lysenko's views were also semi-magical.

Dominique Lecourt has published a new and detailed account of the Lysenko affair (*Proletarian Science? The Case of Lysenko*, New Left Books 1977). He shows how with Lysenko in charge of agriculture disaster was the result all along the line. For instance great numbers of trees were planted in accordance with his theories but all died. For ten years after he fell from grace Lysenko's name never appeared in the Russian press. Yet his methods were to have been the paradigm for all science. Today no single Russian philosopher has attempted to analyse just where Lysenko went wrong in analysing Marxism and applying it to science.

'TALKING' APES

In recent years it has been claimed that although apes cannot speak, they can use sign language (ASL, American Sign Language) to communicate. Apes can be taught 150 words or thereabouts (400 in one case) and can sometimes use them correctly to form 'sentences' of the type "Me hug cat". The creation of true apesentences is now challenged by workers at Columbia University, NY.

About 20,000 multisign utterances (recorded on video tape) of an ape called Nim, who was taught up to the age of 4 and has learned the signs for 125 words, have been studied. It transpires that the ape is expert at copying his teacher but has no understanding of a true sentence as distinct from a combination of separate words. Dr H.S. Terrace and his co-workers have compared the performance of Nim with that of the ape Washoe. They conclude that there is now no evidence that an ape can learn as children learn, create a sentence, replace one word by another or communicate in the way that humans do. (H.S. Terrace, *Science* Nov. 23 1979, 206, 891).

We are reminded of the excitement that was caused many years ago when the horse Clever Hans was trained to do arithmetic and to indicate the answers to sums by the number of times he pawed the ground. In the end it was proved that the horse was picking up cues from his master in whose absence he was as non-mathematically inclined as any other horse. (Oskar Pfungst, *Clever Hans, the Horse of Mr von Osten* NY 1911; repr. 1965)

SHORT NOTES

TV and Mental Health. Ian Ried (*Look after Yourself*, Darton, Longman and Todd, 1979 £0.95) points to some of the dangers inherent in TV watching. It is particularly harmful to children to sit for hours soaking up what they hear and see with no opportunity of response. "Because we tend to see the best performers, the best jumpers, the best musicians, we tend to be inhibited from trying these things ourselves." "Television creates loneliness. Conversation is killed. We no longer communicate or share our thoughts and feelings with the rest of the family."

Cosmic Background Radiation. Until recently it seemed that the cosmic background radiation fitted a black body curve for a temperature of 3° absolute for all wave lengths, and this was interpreted as the dying embers, so to speak, of the original big bang by which the universe came into being. The range of wave lengths has now been extended and although the peak and part of the curve, and parts on either side follow the expected black body curve, (the peak is at a wave number of about 6 per cm.), this is not so beyond about 12 per cm. It is just possible that the radiation is a relic of events which took place after the "big bang", though the evidence that they had a definable origin is not in question. (*New Scientist*, 26 Ap. 1979; *Nature*, 275, 35, *Physical Review Letters*, 42, 925.)

Life Elsewhere. In the 1960's Dr Iosef S. Shklovsky, a Moscow State University astronomer, claimed that there must be millions of inhabited planets. He is now reported as saying:—"We are alone in the universe... the fact that we have come to grips with most of them [the fundamental laws of science] and yet cannot detect a manifestation of extraterrestrial life means that such life is exceeding rare." (Reported in *Astronomy News* 1978, 16 (6), 2-4 and quoted in *Creation Res. Soc Quart.* 1979, 16 (1), 77.)

Man's Evolution. "The great leap in cephalisation of genus *Homo* took place within the last two million years, after some ten million years of preparatory evolution towards bipedalism, the tool-making hand etc." Or so thinks Arthur Koestler. Exactly the opposite view is argued by Stephen J. Gould (*New Scientist* 6 Sept '79 p.738-9) who holds that bipedalism is the really difficult step, because it involves important changes in anatomy, and that "the subsequent enlargement of our brain is, in anatomical terms, a secondary epiphenomenon, an easy transformation embedded in a general pattern of human evolution". An outsider, more versed in physical science than biology, can only wonder at such confident guess work and wish that those who popularise science would concentrate on what is known rather than indulge in so much apparently irresponsible speculation.

Human Footprints found together with those of dinosaur tracks in and near the Paluxy River, Glen Rose, Texas, have long been a puzzle, since dinosaurs are commonly believed to have died out 50 or 60 myears before man was on earth. The area was studied yet again in Aug 1978 and a branch was discovered, 2.26 m in length, varying from 2.5 to 5 cm in diameter, which had fallen into the soft mud before this hardened. The branch (from a tree struck by lightning?) was burning when it fell and the heat caused bubbles along its entire length in the mud which is now limestone. One end is petrified but much is carbonised. Samples of this part were taken and the C-14 dating gave 12,800 years. As the footprints and tracks are found in the area, and at the same level, as the burnt branch, the conclusion seems to follow that men were in the area about 10,000-11,000 BC and that dinosaurs had not then died out, at least in Texas. This finding was reported in *Bible Science Newsletter*, 1979, 17 (4), 4 and in greater detail by Fredrick P. Beierle in *Creation Research Society Quarterly*, 1979 16 (2) 87.

Cannibals and Western Pride. Dr William Arens of the State University of New York has been looking into the generally accepted view that many ancient and modern peoples have practiced cannibalism (*New Scientist* 20 Sept. 1979 p.874 and *The Man-eating Myth*, OUP, 1979). He is unable to unearth a single well established case and concludes that the reason why people are so willing to accept stories of cannibalism is because "they testify to moral progress" and also pander to "a subtle form of racism" in that they put modern third world peoples on a level with the cannibalistic savages of thousands of years ago from which the Western world is descended. Reviewers, of course, pointed out that cannibalism is not mythical, while current reports (of Emperor Bokassa) remind us that even today cannibalism is not foreign to our world - but Arens' warning is timely nevertheless. Accusations of cannibalism can certainly be a form of self-flattery.

Disunited Man. It is extraordinary how disunited modern man has become, not only on matters of religion and politics but in many other spheres as well. This was well illustrated by a BBC discussion in 'Man Alive' on 18 Sept. 1979 which dealt with allergies. Doctors ('clinical ecologists'!) described researches aimed at curing or alleviating allergies, but the psychiatrist referred to their efforts as "the whole stuff of hysteria". The woman who gets positively suicidal when faced with pork or eggs was dismissed as devising new ways to send her husband mad. The clinical ecologists who argued that some of their methods were proving successful were told that witch doctors make the same claim and that the psychiatrist himself had effected cures by injecting patients with distilled water. "Each expert was eager and willing to defend his particular little patch of research but each seemed totally foreign to the other." It was rather like being stranded between two extreme views, each too allergic to

the other to offer any comfort to the man in the middle", (*Daily Telegraph* 19 Sept.).

Fear and Science. Atheists like Lucretius were motivated partly by hatred of religion and partly by a fear of what might happen to them after death. In our day Monod was certainly motivated in the first way, but not by fear of death, "for fear of a life after death does not rank high among the anxieties of men today". For many this ancient fear has been replaced by the fears which science inspires. There is the fear that science, misused, may turn this world into a hell. But not less important is the fear that science, without religion, will create "an aimless life set down in a desert of meaninglessness" (Richard Spilsbury *Providence Lost: A Critique of Darwinism*, OUP 1974 p.115).

Genetic Code - or Codes? Until very recently it was believed that the DNA (deoxyribonucleic acid) four-letter (ATCG) code which genes employ in groups of three to specify each of the 20 amino acids which constitute proteins is universal in nature. The code is the same in viruses, bacteria, yeast cells and man and biologists pointed with conviction to the chaos that would result if the code were changed after it had become established in the early stages of evolution. However recent results obtained in Columbia University and independently in Paris are beginning to suggest that more than one code is used in nature. The minute sausage shaped objects known as mitochondria present in cells possess their own sets of genes and their own molecular machinery for producing the proteins they require. But in three instances thus far, it has been found that the code they use differs from the established code in that triplets are translated in unexpected ways (*Proc. Nat. Acad. of Sciences* 1979, 76, 131, 1663; *Cell* 1979, 18, 47; *Nature* 1979, 282, 189).

The uniformity of the genetic code throughout nature is often cited as evidence that all life has originated from a single source. This argument has now become suspect.

Astrology. A good deal of evidence continues to accumulate that there is a substratum of fact underlying the superstition of astrology. Professor Alan Smithers of Manchester University has collected the dates of birth of 12,000 army officers and finds that more than the statistically expected number of them were born in September or November. Among American and Austrian army officers he found a similar discrepancy. Finally 13 occupations were analysed, and nine showed an anti-chance pattern. It is not at all clear what the explanation can be but there may be "some still-undiscovered biological rhythm which we all inherit". Several other studies confirm these findings, among them those of Professor Hans Eysenck, the psychologist. (Oct. 1978 *Jour. of Social Psychology*.)

Soviet Science. A recent article in *Science* (1979, 205, 981) reports on a new book by the Soviet science journalist Mark Popovsky, who emigrated to the United States in 1977. Popovsky claims that Soviet science is paralysed by the corrupt and oppressive system, and that the scientists are ruled by hypocrisy and fear. Hence, despite the very large numbers of Soviet scientists — more than 1.2 million — their creativity is low. But he sees a faint sign of hope in a tentative resurgence of religious interest among Soviet scientists, particularly the younger ones. In 1976 he carried out a discreet survey which showed that most scientists believed religion and science to be compatible, whereas only a few years earlier unbelief was considered essential to 'scientific objectivity'. [Sent by Dr Peter Clarke]

(An article in the *Daily Telegraph* (12 Oct 1979) states that the Communists in Russia are worried because many young men are wearing Jesus T-shirts while crucifixes on their chests are common.)



DAVID G. KIBBLE

THEOLOGY - A SCIENCE ?

Some years ago Professor Thomas Torrance of Edinburgh University wrote a book² in which he made the claim that theology is a science. Some of us found the book difficult to master and for this reason it was not referred to in FAITH AND THOUGHT. David Kibble, B.D., a former pupil of Torrance, here summarises the arguments and examines the claim made by Torrance.

Theology as a Science

Theology was once called 'the Queen of the Sciences', but its status as such would certainly not be taken very seriously by many scientists today. The title was appropriate in medieval times when theology dominated all other forms of learning in educational establishments ruled by clerics. In recent times, this claim made for theology has been examined closely, in particular by the neo-orthodox wing of the christian church of which Karl Barth is representative. Barth concluded that theology is indeed a science:

If theology lets itself be called and calls itself a 'science', it thereby declares that (1) Like all other so-called sciences, it is a human effort after a definite object of knowledge. (2) Like all other sciences, it follows a definite, self-consistent path of knowledge. (3) Like all other sciences, it is in the position of being accountable for this path to itself and to everyone - everyone who is capable of effort after this object and therefore of following this path.¹

More recently, a thoroughgoing attempt to establish theology as a science was made by Prof. Thomas F. Torrance. It is his account which I wish to examine more closely.

Torrance reminds us at the beginning of his *Theological Science* that theology presupposes God's existence, and that the theologian himself 'knows' God.

In scientific theology we begin with the actual knowledge of God, and seek to test and clarify this knowledge by inquiring carefully into the relation between our knowledge of God and God Himself in his being and nature. Then in the light of this clarification we seek to be more and more open and ready for God, so that we may respond faithfully and truly to all that He declares and discloses to us of Himself. It is through this disciplined obedience of our mind to God as He gives Himself to be known by us that we advance in knowledge of Him.^{2a}

Theology, then, does not start by asking the question 'Is there a God?' or 'How can God be known?' To start by asking these questions would be fundamentally unscientific: we should never 'leave the ground' if we tried to answer them. A similar situation prevails in the natural sciences: in mathematics, for example, one does not start by asking whether a straight line is straight, or whether a point really is a point. One first assumes these premises, and then clarifies them or alters them in the course of the investigation — the investigation that first presupposed the premise. Similarly in theology we begin by assuming the existence of, and the possibility of, knowledge about God, and then proceed to clarify or alter our knowledge and/or concept of God in the dialogue that ensues. Theology is essentially a dialogue, a dialogue between God and man. Since this activity involves a faith on the part of the theologian, theology necessarily assumes faith. In Torrance's view the dialogue, on God's side, is articulated primarily in Christ. "Christian theology arises out of the actual knowledge of God given in and with concrete happening in space and time. It is knowledge of the God who actively meets us and gives Himself to be known in Jesus Christ -- in Israel, in history, on earth."^{2b} Had God not spoken to man, there could be no theology, only anthropology:

Unless we have a word from God, some articulated communication from Himself to us, we are thrown back upon ourselves to authenticate His existence and to make Him talk by putting our own words into His mouth and by clothing Him with our own ideas. That kind of God is only a dumb idol which we have fashioned in our own image and into whose mouth we have projected our own soliloquies, and which we are unable to distinguish from our own processed interpretation.^{2c}

How then, may theology be seen as a science? Although each of the natural sciences has its own scientific methods which it has developed, so that physics proceeds in a different way from biology, geology from chemistry, and so on, there is nevertheless one thing that all the natural sciences have in common. The common factor is that each particular science pursues its investigations in the way which is appropriate for itself; further, that the appropriate way for each science is itself determined by the object of knowledge of that science, so that we come to know things, or investigate things, in the way which the objects we are seeking to know or to investigate themselves determine. If, for example, I want to discover what paper is made of, I must start with chemical analysis of some kind. But chemical analysis will not explain electricity which demands an experimental approach of a different kind. In such ways objects or entities to be investigated determine the method of investigation. Torrance expresses this idea by saying that an object develops its own 'mode of rationality', i.e. method of reasoning to be used in the investigation.

Only when the correct 'mode of rationality' is decided is the scientist in a position to learn from nature. He will then be forced to start asking new questions about the object of his enquiry: when answered these will raise further questions, and so on, till a body of knowledge is built up. Knowledge gained through the correct 'mode of rationality' always calls into question the preconceived ideas of the investigator. Objective thinking, rational investigation, scientific objectivity, therefore, always lays itself open to the nature and to the reality of the object being investigated, so that it may take new shape from the nature of the object itself. Torrance concludes, therefore, that the way of scientific knowledge:

...is the way of acting and thinking that is no more and no less than the rigorous extension of our basic rationality, as we seek to act toward things in ways appropriate to their natures, to understand them through letting them shine in their own light, and to reduce our thinking of them into orderly forms on the presumption of their inherent intelligibility. Scientific activity of this kind is essentially open and flexible through fidelity to the manifold character of reality and is therefore universally applicable.^{2d}

Such a method, Torrance claims, is applicable to theology. Here too, we must seek to know and to investigate the object in question (God) in accordance with the 'mode of rationality' it (He) itself (Himself) determines. The 'mode of rationality' in the case of christian theology is a dialogue with a God who has revealed His being and nature in Jesus Christ who is His Word

incarnate. Jesus Christ, the incarnate Word of God, is the basic data of theology presented to us through the Scriptures and the christian church. Scientific theology, then, has its own 'mode of rationality': a knowledge of God in and through Christ Jesus which will reveal certain characteristics about itself.

1. God Himself determines our knowledge of Him. Just as in the natural sciences we allow the object of our enquiry to determine how it is to be investigated, so too in theology God Himself must determine theological epistemology. But here we note a curious inversion: we find that we can only know God because God creates in us the capacity for knowing Him. Knowledge of God comes by God's grace and not through man's own efforts, so that in theology discovery is replaced by revelation. In this theological condescension God "...acts critically and creatively upon our ideas, conceptions, categories, analogies, giving them an orientation and possibility beyond any power they have in themselves."^{2e}

2. Theological science involves personal knowledge through dialogue. It is only through conversation that I can get to know my neighbour and my assessment of him will be subject to change, becoming more accurate through successive encounters. An initial impression of stand-offishness might later, for instance, be changed to one of shyness. Similarly, by revision and refining, immature notions we may have had about God's nature will be subject to change. In the end there will result a theological 'model' leading to a deeper knowledge of God.³

3. In common with all other science, theological science has limitations. We cannot, as finite creatures, have a perfect knowledge of an infinite God; or 'peep behind the curtain' of His revelation in Scripture. At best we apprehend God rather than comprehend Him, the word 'apprehend' designating, unlike the word 'comprehend', only a partial knowledge. God Himself must ultimately remain a mystery. "It is because mystery belongs to the nature of Christ as God and Man in one Person that it would be unfaithful for us not to respect that mystery in our knowing of Him and therefore in our systematic presentation of our knowledge. It is upon this fact that every attempt to reduce knowledge of God to a logical system of ideas must always suffer shipwreck" says Torrance.^{2f}

4. Finally, theological science, like any other science, has its own mode of verification. In theology we cannot verify God's existence or His nature -- He verifies himself. In the natural sciences we may verify a theory by demonstrating that it withstands attempts at falsification, by checking that it passes various tests, (e.g. that it passes the test of 'Occam's razor', that it does not violate the laws of thermodynamics etc.) In theology there are no independent tests, for God proves Himself

and is His own verification. St. Paul makes this point when writing to the Christians at Corinth. It was not *his* words, he says, that were authenticating God, but God's Holy Spirit: "When I came to you, brethren, I did not come proclaiming to you the testimony of God in lofty words or wisdom...my speech and my message were not in plausible words of wisdom, but in demonstration of the Spirit and power, that your faith might not rest in the wisdom of men but in the power of God." (1 Cor. 2: 1-5)

To summarize, scientific theology presupposes what it seeks to investigate, makes use of its appropriate mode of rationality, has characteristics peculiar to itself as do all other sciences, involves personal dialogue, has limitations as to its scope and makes use of verification but by God only. A theology which denies these characteristics strays outside the theological mode of rationality and loses its status as a science.

The results of scientific investigations are reported verbally, but often with the aid of formulae, graphs and diagrams. The theologian, however, is confined to the use of words in order to convey meaning. Words are used to make statements of two kinds - coherence statements and existence statements. Coherence statements, assuming they are grammatically and syntactically correct, are checked by reference to other statements. For example, "I live in West Yorkshire" might be checked by such statements as, "I live in Leeds" and "Leeds is in West Yorkshire", and so might be classed as a coherence statement. An existence statement, on the other hand, is made and verified by reference to the reality to which it points. Thus 'my car is red' is judged to be true or otherwise by reference to the car itself. Now Torrance claims that theological statements are fundamentally existence statements (although of course they must also be coherence statements in that they must be grammatically correct, understandable, and coherent with other statements). He holds therefore that theological statements cannot be verified by reasoning, but only by reference to the reality to which they point. Therefore, "we can only 'convince' others of the truth of our existence statements if we can get them to see or hear the reality to which they refer...They must be brought to share our *intuition* of the object given."^{2E}

If, then, existence statements are to be verified by reference to the object to which they refer, it follows that the theological language, like other scientific language, must be able to reveal to us the reality in question. Just as a formula written by Einstein might reveal to us the relative nature of time, so theological statements must be able to reveal God to us. As such they are powerful: they point to a reality beyond themselves. Anyone, therefore, who thinks he understands theology when he knows the meanings of the words it uses is mistaken. In a sense the words of theology are transparent:

we must see 'through' them to God. Theological statements then, as existence statements "...presuppose, point to, and fall in with, the objective order in the nature of things which we experience, give it distinction and shape in our minds and by bringing our minds up against the transcendent aspects of form they mediate to us the basic concepts we require in interpretation and explanation."^{2h} The fact that theological statements often 'look like' other statements, yet are models through which God himself may be revealed, puts a severe strain on the language used. Inevitably they appear baffling and paradoxical to those who are unable to penetrate beyond the mere words themselves to the God to whom they point.

The most common criticism that is levelled at Torrance is that if theological science can only be verified by religious faith, by dialogue with God himself through Jesus Christ, then an unbeliever cannot falsify Torrance's claim. Torrance has fortified himself against all opponents by saying that only Christians can verify a christian theological science. Since being a Christian is part of the verification procedure, no secular philosopher can deal with, properly understand, verify or falsify any theological statement. Frederick Ferré sums up the argument thus:

This 'object' [of scientific rationality] is identified as the experience of meaningfulness and truth which Torrance calls the Word of God, and it defies normal reason because it is not of the same order as human mentality but comes to man 'from without.' Philosophers, with their ordinary canons of rationality, are no doubt supposed to refrain even from *examining* this claim, on which all depends, that the experience is in fact an ingression from a supernatural realm of being, meaning and truth.⁴

Ferré is complaining that because one has first to believe (a) that God exists, (b) that He has revealed himself, (c) that he has revealed Himself through his Word, and (d) that we can have a personal dialogue with this Word, the secular philosopher cannot therefore verify whether God exists or not, nor can he examine the claim that theology is a science. He can do neither of these two tasks because, Torrance maintains, he needs a religious faith to do so. There is a sense in which Ferré is right: if God did not exist then Torrance would still be able to put forward his thesis without anyone being able to deny it. Torrance seems to be saying that you can only agree or disagree with him when you have first agreed with him, which is blatantly illogical. If his claim cannot be examined 'from the outside,' then it is useless to examine it at all, because if you deny it Torrance will tell you that you can only judge its truth 'from the inside;' but since because of being 'on the inside' you therefore agree with him anyway, the whole process seems pointless. However,

if there *is* a God, then Torrance's claim is quite meaningful; if there is a God then no doubt He might be one who verifies Himself through a process of dialogue. The stance one takes concerning Torrance, then, will depend on the stance one first takes concerning God's existence.

Further Similarities Between Science and Theology

Torrance's claim, outlined above, is that theology may be counted as a science in that it seeks to know its object (God) by the means dictated by that object itself; theology may thus be said to have its own scientific method. Yet this is not the only similarity between science and theology; other parallels have already been touched upon in passing, but it will be useful to summarize them.

1. Both science and theology start with presuppositions. The idea that scientific research is possible in their absence is now dated — a topic that has often been discussed and need not further detain us here.⁵

2. Both science and theology make use of knowledge of a personal nature. Michael Polanyi has investigated this point in some detail.⁶ He compares activity in natural science to the skill of a craftsman passed on from master to apprentice and learnt not by reading but by watching and doing. "By watching the master and emulating his efforts in the presence of his example, the apprentice unconsciously picks up the rules of the art, including those which are not explicitly known by the master himself. These hidden rules can be assimilated only by a person who surrenders himself to that extent uncritically to the imitation of another."⁷ Similarly, much of the scientist's knowledge, Polanyi claims, is gained by actually 'doing' physics, biology, or whatever; the scientist will assimilate, just as the craftsman does, a body of knowledge which he may not always be able to define or articulate. Such knowledge, which includes many of the unverifiable assumptions of science, Polanyi calls "tacit," since the knower may not actually be aware of that knowledge, and may be unable to articulate it. Like a craftsman, the natural scientist will tacitly know, through his scientific 'apprenticeship', when a scientific report is sufficiently sound for the collection of data to be concluded. Such a decision is an essentially personal one; it is one that can only be made on the basis of experience. There is no way in which an (impersonal) computer could come to decide when the collection of data should cease; only the scientist, with his craft knowledge, can make that essentially personal decision.

In initiating a line of scientific research a scientist must make decisions of a personal nature. He must decide what will be of interest and of value to the scientific community. Were he to investigate any and every scientific fact the process of scientific discovery would end in what Polanyi has called a "desert of trivialities." Polanyi stresses that this decision is based on knowledge of a highly personal kind; it is outside the capability of a computer primarily because the question is one of value rather than of fact.

Personal decision also enters the picture when data are to be evaluated. Facts may support differing theories and a decision, 'a leap of scientific faith', may be needed to decide between them. Prosaic reasoning is not enough. As Polanyi puts it — "Major discoveries change our interpretative framework. Hence it is logically impossible to arrive at these by the continued application of our previous interpretative framework. So we see once more that discovery is creative, in the sense that it is not to be achieved by the diligent performance of any previously known and specifiable procedure."⁸

3. Natural science and theology both respect the objectivity of fact. It is only by 'dialogue' with fact that the correction of false preconceived ideas is made possible.

4. In natural science free use is made of what are called *models* of reality. These are not, or are not necessarily, replicas of what they represent. The chemist who represents atoms as billiard balls does not imagine that a super-microscope would reveal real microscopic coloured billiard balls, nevertheless the billiard ball *does* effectively mirror certain aspects of the atomic world, notably structure. Sometimes in science more than one model is needed to describe a single phenomenon; for example, both waves and particles may represent light.

Models can, of course, be misleading. There is always a temptation to 'overextend' a model by assuming that all the characteristics of the model will be present in whatever is being described. Thus the idea of light waves, a model originally suggested by the phenomena of sound and water waves, led to a fruitless search for the 'ether', the assumed medium of propagation corresponding to air or water.

Theology also makes use of models. There is a sense in which we may say that Jesus Christ is a model, for it is He who 'represents' the Father in incarnate form, (Jn. 1: 18; 14: 8-9; 2 Cor. 4: 6 etc.), yet there are features of the human Jesus (His physical body etc.) which need have no parallel in the Almighty God. To see Jesus is not to see God in His entirety. It is through Jesus, our theological model, that we penetrate to the reality of God Himself and apprehend but do not comprehend

the Deity. A useful description of the model-like nature of theological language has been published by Ian Ramsey.⁹ In theological statements Ramsey discerns the use of everyday language (e.g. 'good') which is then qualified in some way to make it appropriate to God (thus 'good' becomes 'infinitely good'). Theologically, the qualified model is understood, not by projecting the model directly on to God (so that God is then seen as being good in a similar way to man, but in greater degree), but by letting God, from His side, disclose Himself to us through the model (so that God's goodness is then seen as differing from man's goodness). In this sense, whether the model is ever understood properly is something outside our control.^{9a} Neither in natural science nor in theology do models exhaustively represent what they refer to -- rather, they are means by which we penetrate to the reality that lies beyond them and to which they point.

Differences Between Science and Theology

Despite the resemblance we have outlined there are significant differences between science and theology, to which we must now turn.

Firstly, ordinary scientific statements are testable by observation.¹⁰ Now it is of course true that observation involves a certain amount of interpretation: for example, what may be a 'flash' to a schoolboy will be an electrical discharge to a physicist; what may be simply 'weight' for most people will be complicated by the concept of gravitational pull for the scientist, and so on. Yet it still remains true that scientific assertions are normally testable by observations.

With religious statements it is otherwise. Thus, the statement that 'Jesus is the Son of God,' whilst it involves evidence from the Biblical documents, rests to a large extent on the faith of the believer who, in his own life, acknowledges Jesus as alive today. Again, the statement that 'Jesus rose from the dead,' whilst it too involves public evidence from Biblical (or other) documents, also rests to a large extent on the faith of the religious believer.¹¹ Such statements are not logically provable, which is as we should expect since we have already acknowledged that it is God who gives knowledge of Himself. Science then, begins with the assumption that there is a real, knowable world: theology begins with the further ontological assumption that there exists a divine Being.

Secondly, the role of interpretation is greater in theology than in natural science. When, in natural science, an experiment fails to give an expected result, the fact is usually, though by no means always, accepted as an indication that the theory which

predicted it is wrong. In theology God's failure to answer prayer, say for healing or for a coveted promotion at work, may be regarded as a positive answer intended to teach us in some way. Similarly, when prayer is answered in the expected way (say, prayer for healing) the Christian's attitude is probably less empirical than that of the natural scientist, for he at once interprets what has happened in terms of his belief in God. (Here, however, the difference seems to be less marked. Scientists often describe what they observe in terms of a relevant theory, gravitation, electromagnetic laws, evolution etc.)

Thirdly, in natural science every effort is made to check results which have an important bearing on theory, for science is undertaken within a scientific community which checks scientific claims: scientific memoirs to be published in journals are submitted to referees. Similarly theologians work within the community of God's people. But when one theologian checks the theology of another, it is assumed that he accepts the faith of the theological community. In the sciences no formal agreement as to faith is required. [It might fairly be argued that it must be there nevertheless: a nonbeliever in the laws of thermodynamics would not be asked to referee a paper on astronomy, or a flat-earthist one on geophysics, or a disbeliever in atoms one on the structure of an organic compound. - Ed.]

Another difference between natural science and theology concerns their respective claims to truth. In natural science hypotheses and theories are stepping stones to the discovery of scientific truths.¹² It is often said, however, that the practitioners in natural science can never be sure that no further stepping stones lie ahead, so that he can never know, for sure, that final truth has been discovered. Barbour expresses this view as follows: "No theory can be proven to be true. The most that can be said for a theory is that it is in better agreement with the known data and is more coherent and comprehensive than alternative theories available at the moment."¹³

No Christian would speak of theological truth in this way. Theology does not advance by the method of conjecture and refutation; the truth it knows is revealed in the person of Christ and is known to be true in a once-for-all sense.

Conclusion

Despite the differences between natural science and theology, Thomas Torrance claims that the resemblances are sufficient to justify fully the claim that theology is a science. Ultimately, of course, the claim is semantic and, by laying stress upon the differences rather than the resemblances, many are led to reject Torrance's claim.

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- 11 A few theologians claim that the resurrection of Jesus *can* be proved independently by normal historical and archaeological tests, e.g. D.P. Fuller, *Easter Faith and History*, 1968. For myself I believe that the absence of Jesus's body can be proved in this way, but not His resurrection.
- 12 See K. Popper, *Conjectures and Refutations*, 1963, esp. chs. 1 and 10; *Objective Knowledge*, OUP, 1972, chs. 1 and 3.
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R.S. LUHMAN

GOD-TALK IN THE ACADEMIC COMMON ROOM

Mr. Luhman gives us a birds eye view of what some academic philosophers have been saying about theology and its claims. He outlines in particular some of the discussion which has been going on about whether and in what sense it is meaningful to talk about God.

Do Statements about God have Meaning?

Believers in God claim that the concept of God has meaning. Yet it is precisely this claim that many philosophers challenge. The challenge goes back to the work of the Logical Positivists in the 1920s and 1930s, popularised in this country by A.J. Ayer. These philosophers divided meaningful assertions into two categories, analytic and synthetic. Analytic assertions are those particularly applicable to the disciplines of logic and mathematics. Synthetic assertions are found in the sciences. Analytic assertions are independent of sense experience, are necessarily true and tell us nothing about the 'real' world. Synthetic assertions are known only as the result of sense experience, can be true or false and when true convey factual information.

An example of an analytic assertion is 'All bachelors are unmarried males'. To verify this it is not necessary to ask unmarried males if they are bachelors. Indeed if someone were to say, "I have just found out that Mr. Jones is married but yet is certainly a bachelor", we should conclude that the speaker does not know the correct use of the words 'married' and 'bachelor'. On the other hand to test a synthetic assertion like, 'It is raining' one needs to do something, like putting one's head out of the window.

The logical positivists found difficulty with religious assertions. Statements like, 'God loves us like a father loves his children are not analytic assertions but, according to the logical positivists, they are not synthetic either because they

cannot be verified or falsified. They were therefore classified as nonsense assertions. The test that was formulated to detect meaningfulness was called the criterion of verifiability. Ayer puts it like this - "We say that a sentence is factually significant to any given person, if and only if, he knows how to verify the proposition which it purports to express - that is, if he knows what observations would lead him, under certain conditions, to accept the proposition as true or reject it as being false".¹

Philosophers were not slow to point out that this criterion of verifiability suffers from the very defects that religious assertions were said to possess. If the criterion is classified as analytic then it merely defines terms and cannot tell us anything about actual sentences: therefore there is no good reason for using it. On the other hand if it is synthetic it arises from sense experience. But this too is impossible for the criterion rests upon a *logical* distinction. It is inconceivable that any one will ever prove or disprove it as a result of a sense experience. At best, then, Ayer's statement is - to quote Professor Wisdom - "a useful bit of nonsense", assuming, that is, Logical Positivism is to be taken seriously.

The trouble with the logical positivists was that they failed to recognize that language is far more complex than they gave it credit for. As Ferre observes, "To say of a given sentence that it can be verified is not to say anything about the meaningfulness of the sentence, but to characterize it as being a sentence of a particular type, namely, an empirical sentence".²

A more sophisticated version of the challenge is found in an article by Anthony Flew which initiated the university discussion that has been described as "the most important body of writing that has so far appeared on the subject". Flew adapted a parable of John Wisdom's in which two people come upon a long-neglected garden.¹¹ Among the weeds they find some surprisingly healthy plants. One of them insists that a gardener must have attended to the garden before their arrival, but the other points to the weeds and the fact that no gardener has even been seen as contrary evidence. Flew uses the parable to illustrate the attitudes of religious believers and unbelievers. The religious believer will not allow any evidence (here the weeds stand for evil) to count against the existence of a loving Creator (the gardener in the story). (One might suppose that both participants in the discussion would agree that the garden *is* a garden and that gardens do not make themselves: a gardener, therefore, existed in the past, even if he is not active today. However Wisdom and Flew seem to overlook this point. Ed.) Assertions like, 'God created the world' or 'God loves us like a father loves his children' look like synthetic, empirical assertions, but if they

are, says Flew, then they must be verifiable or falsifiable. He writes, "...if the utterance is indeed an assertion, it will be equivalent to a denial of the negation of that assertion. And anything that would count against the assertion, or which would induce the speaker to withdraw it and to admit that it had been mistaken, must be part of (or the whole of) the meaning of that assertion. And if there is nothing which a putative assertion denies then there is nothing which it asserts either: and so it is not really an assertion".³

However, in a later article Flew admits that this argument cannot be accepted without qualification". What he had failed to do was to draw the important distinction between something that 'counts against' the truth of a given assertion and what is logically incompatible with it. Thus the problem of evil might 'count against' God's love, but is not thereby incompatible with it. He argues that theists are in danger of lapsing from using a synthetic assertion into using a pseudo-synthetic one because the earlier statement is so eroded by qualification that it is no longer an assertion. It has died "the death by a thousand qualifications". He concludes by asking, "Just what would have to happen not merely (morally and wrongly) to tempt but also (logically and rightly) to entitle us to say, 'God does not love us' or even 'God does not exist?' I therefore put ... the simple central question, 'What would have to occur or to have occurred to constitute for you a disproof of the love of, or the existence of God?'"

Theistic Statements as Non-Cognitive

Before discussing the replies made to Flew's questions and their implications, we must ask if he is right in thinking that when theists make statements about God they are talking cognitively (that is making statements of fact). Several attempts have been made to show that theistic assertions are non-cognitive. A well known example is that of Professor R.B. Braithwaite who argues that, "The primary use of religious assertions is to announce allegiance to a set of moral principles". By giving his allegiance to Christianity a man is showing his intention to follow the agapeistic (loving) way of life. Braithwaite regards the doctrinal contents of religious as 'stories' which may or may not be believed but which afford psychological support for following the religion. He writes, "It is an empirically psychological fact that many people find it easier to resolve upon and carry through a course of action which is contrary to their natural inclinations if this policy is associated in their minds with certain stories. And in many people the psychological link is not appreciably weakened by the fact that the story associated with the behaviour policy is not believed. Next to the Bible and the Prayer Book the most

influential work in English Christian religious life has been a book whose stories are frankly recognized as fictitious - Bunyan's *Pilgrim's Progress*".⁵ For Braithwaite religions differ only in the 'stories' they entertain. Thus he believes that religions do not need to combat the challenge of verification because they do not assert anything factual.

This account is open to at least three damning objections^{6a}

- (a) The 'stories' he mentions are of logically diverse types which include historical statements as well as beliefs. It is only the former that fit into his category, but it is chiefly the latter, beliefs like 'God was in Christ reconciling the world', that impel men towards an agapeistic way of life.
- (b) The ethical theory on which he bases his account is that moral assertions are expressions of an intention to act in a specified way. This would mean that the assertion, 'lying is wrong' means 'I never intend to lie'. According to this view it would be logically impossible to intend to act wrongly. One would not be able to say, "Lying is wrong, but I intend to tell a lie". But clearly one can say this and therefore Braithwaite is wrong.
- (c) He believes that beliefs about God provide man's behaviour with psychological reinforcement. However, it would be equally plausible to argue that the ethical significance of certain beliefs consist in the way they render a particular way of life attractive and rational. Hick writes, "This view would seem to be consistent with the character of Jesus' ethical teaching. He did not demand that people live in a way which runs counter to their deepest desires and which would thus require some extraordinary counterbalancing inducement. Rather, he professed to reveal to them the true nature of the world in which they live, and in the light of this, to indicate the way in which their deepest desires might be fulfilled".^{6b}

Another prominent writer who has presented religion as non-cognitive is D. Z. Phillips who argues for what has been described as the 'picture' theory of religious language. For Phillips the question as to whether God exists or not is inseparable from the question of what it is to have the concept of God. He writes, "What (the believer) learns is religious language; a language which he participates in along with other believers. What I am suggesting is that to know how to use the language is to know God".^{7a} Thus atheism for him is "not knowing what sense to make of religious language and practices". He thus takes theistic assertions outside the realm of fact to where they cannot be attacked by problems of verification. He

thinks that, "The whole conception...of religion standing in need of justification is confused. Of course epistemologists will seek to clarify the meaning of religious statements, but, as I have said, this means clarifying what is already there awaiting such clarification... It is not the task of the philosopher to decide whether there is a God or not, but to ask what it means to affirm or deny the existence of God".^{7b} He believes that the difference between believers and non-believers is not over matters of fact, "...it is a question of the possibility of sense and nonsense, truth and falsity in religion".^{8a}

This surely cannot be so, because sense and nonsense, truth and falsity can exist in religion whether God exists or not. An example of Phillips' approach can be seen in his analysis of the concept of love. "My purpose", he says, "in discussing the concept of love was to show how coming to see the possibility of such love amounts to the same thing as coming to see the possibility of belief in God".^{8b} For Christianity, "to know God is to love Him" thus "Love is the real object of the relationship". But how can this be? The object of any personal relationship is the other person; if he loved the other person for the sake of love the relationship would be thereby impoverished.⁹ Phillips is in danger of reducing the assertion 'God is love' to the trivial assertion that 'love is love'.

Perhaps the last word in this section ought to go to John Hick who observes, "...the non-cognitivist is not offering an objective analysis of the language of faith as living speech (which Phillips obviously believes he is doing) but is instead recommending a quite new use for it ... [his] negative premiss is that religious language cannot mean what its users have in fact meant by it".¹⁰ The view I wish to maintain here is the traditional one, namely that theistic utterances are meant to refer to an objective reality.

The Religious 'World-View'

Of those who replied to Flew's challenge there was one who did not think that there was a case to answer. His point was not that religious statements are non-cognitive, but that it is the nature of religious beliefs to be held in such a way that nothing can count decisively against them. R.M. Hare^{3b} coins the word 'blik' to describe an unverifiable and unfalsifiable interpretation of an experience. The example he gives is of a lunatic who believes all professors at his college are intent on murdering him. It is pointless trying to allay his suspicions by introducing him to kindly professors for he will interpret their kindness as devious cunning. There is no way he can be dissuaded from his conviction because he has a 'blik' or 'a thing' about professors. Hare believes there can be good and

bad 'bliks' and the attitude of a believer to God is an example of a good one. Such a view cannot be accepted if only for the reason that if 'bliks' are unverifiable and unfalsifiable there is no way of distinguishing a good from a bad one.

But Hare draws attention to an important aspect of the problem. The believer claims to see the world in a way that is different from the way the non-believer sees it. This was obvious in the original interpretation of John Wisdom's parable.^{11,3b} Of the two men who discussed the garden, both saw the same things but drew different conclusions. Wisdom compares this with a similar situation in which two people look at the same picture. "One says, 'Excellent' or 'Beautiful' or 'Divine'; the other says, 'I don't see it'. He means he doesn't see the beauty. This reminds us of the theist who accuses the atheist of blindness and of the atheist who accuses the theist of seeing what isn't there. And yet each sees the same physically real picture the difference is not one as to the facts. It cannot be removed by one disputant showing the other what so far he hasn't seen. As with music, to settle whether one piece of music is better than another, we must listen again - with a picture we must look again. Referring specifically to religious disputes Wisdom continues:-

If we say...that when a difference as to the existence of a God is not one as to future happenings then it is not experimental and therefore not as to the facts, we must not forthwith assume that there is no right and wrong about it, no rationality or irrationality, no appropriateness or inappropriateness, no procedure which tends to settle it, nor even that this procedure is in no sense a discovery of new facts. After all even in science this is not so. Our two gardeners even when they had reached the stage when neither expected any experimental result which the other did not, might yet have continued the dispute, each presenting and re-presenting the features of the garden favouring his hypothesis... The differences as to whether God exists involves our feelings more than most scientific disputes and in this respect is more like a difference as to whether there is beauty in a thing.

Wittgenstein introduced the concept 'seeing-as' now widely adopted by philosophers of religion¹², to illustrate what Wisdom was describing. Wittgenstein's instances of 'seeing-as' were the Jastrow duck-rabbit and the cube-box. These figures can be seen in alternative ways; at one time a duck, at another a rabbit; at one time a glass cube, at another time an open box. He believed all seeing-as is both aspectual and interpretative. Aspectual change is when we see something different. When a new

aspect dawns it is accompanied by a shift of interpretation so that the same arrangement of lines is interpreted in a new way. Sometimes when one has seen the lines in a particular way it is difficult to see them in any other way, although it may be equally difficult to get someone to see the lines as a particular object in the first place. This parallels the problems which Wisdom's gardeners discussed. The one representing the believer saw the situation as exemplifying God's existence whereas the non-believer could not see it in that way at all.

John Hick develops Wittgenstein's 'seeing-as' as 'experiencing-as'. He argues that all our perceptions are like this. He writes, "To recognise and identify is to be experiencing-as in terms of a concept; and our concepts are social products having their life within a particular linguistic environment".^{6,13} He instances a situation where someone is caught at the foot of a cliff with the tide coming in. There is nothing in the situation other than features which can be described in purely physical terms. Yet the situation can be experienced-as one constituting a moral claim on the observer to summon help. Religious faith is like this. It is a particular response to events which can be given a purely naturalistic interpretation, but which to the believer evoke a sense of God's presence. The religious interpretation is neither *inferred* from the events, nor *superimposed upon* them, but the events are *experienced-as* the activity of God.

Both Wisdom's analogies and Hick's 'experiencing-as' have been criticised for failing to take account of the fact that the different overall views held by the believer and unbeliever cause them to have different experiences. For the believer certain things about the world will produce reactions and responses that are not available to the nonbeliever.¹⁴ This means that an essential element in seeing the world as the sphere of God's activity implies that one already believes in God. Is this not then a case of special pleading? In a sense it is, but then so are all our deductions from inferences. Hughes Cox writes, "Any metaphysical inference presupposes in a *priori* fashion the root metaphor that it defends... a theistic argument is a proof only for a theist. But then any materialistic metaphysical proof is a proof only for the materialist... If the materialist is not guilty of special pleading in his proofs, then neither is the theist in his".¹⁵

Logical Positivists, and Empiricists of whom Flew is representative, make much of the contrast between science and religion but philosophers of science have emphasized that the scientist no less than the theologian comes to his investigation 'theory-laden'. T. Kuhn argued the following¹⁶

- 1) There are no bare uninterpreted data in science. In science, as in other disciplines, expectations and conceptual commitments influence perceptions.
- 2) All data is theory-laden; all measurements and calculations are dependent on theoretical assumptions.
- 3) Discordant data do not necessarily falsify a theory, for even if a deduction is not confirmed experimentally one cannot always be sure which assumption is in error. Where disagreements occur, auxiliary hypotheses can be introduced to remove the discrepancy or a recurrent discrepancy can be set aside as an unexplained anomaly.
- 4) Paradigms (particular theories of great generality) usually dominate in normal science and they are not usually abandoned in favour of an alternative theory just because of conflicting data. Kuhn argues that 'scientific revolutions' consist of 'paradigm shifts' which he compares to 'conversion' or 'gestalt switch' which is similar to Hick's 'experiencing-as'.

Kuhn writes as follows,

Though each (scientist) may hope to convert the other to his science and its problems, neither may hope to prove his case. The competition between paradigms is not the sort of battle that can be resolved by proofs... Before they can hope to communicate fully, one group or the other must experience the conversion that we have been calling a paradigm shift. Just because it is a transition between competing paradigms it cannot be made a step at a time, forced by logic and neutral experience. Like a gestalt switch it must occur all at once or not at all.^{16a}

What is true of science is also true of other disciplines such as literature and history. Basil Mitchell observes of the latter, "To the historian, at least, it makes little sense to suggest that verification is establishing the agreement of fact with theory. All historically significant theories have agreed with the facts, but only more or less... [what] makes a good deal of sense [is] to ask which of two actual and competing theories fits the facts *better*".¹⁷

In his reply to Flew, Mitchell readily admitted that certain facts, such as the existence of suffering, do count against the hypothesis that God loves mankind, but that the believer will not allow it to count *decisively* against the hypothesis because he has already made a religious response. This is a bit like the scientist refusing to let any evidence overthrow his theory because he is already committed to it. Mitchell illustrates his point by a further parable in which God is represented by 'the Stranger' who in time of war in an occupied country claims to be

the head of the resistance movement. The stranger makes a deep impression on the partisan who is prepared to believe in him not only when he is seen to be helping members of the resistance but also when he appears in police uniform handing over patriots to the occupying power. Of course the stranger's behaviour causes him to question, but he continues to trust him because he believes in him. Mitchell concludes, "'God loves men' resembles 'the Stranger is on our side'... in not being conclusively falsifiable. They can both be treated in at least three different ways: (1) As provisional hypotheses to be discarded if experience tells against them; (2) As significant articles of faith; (3) As vacuous formulae (expressing, perhaps, a desire for reassurance) to which experience makes no difference and which makes no difference to life. The Christian, once he has committed himself, is precluded by his faith from taking up the first attitude: 'Thou shalt not tempt the Lord thy God'. He is in constant danger, as Flew has observed, of slipping into the third. But he need not; and, if he does, it is a failure in faith as well as in logic".^{3c}

One important question presents itself as a result of this discussion. If we grant that the believer, because of his prior commitment to a belief in God, sees the world in a different way to that of the unbeliever, must it therefore follow that there is an unbridgeable gulf between them? I do not think so. Perhaps the way that the gulf can be spanned can be illustrated by comparing religious awareness with musical and artistic appreciation. There is no doubt that different people do see different things when they look at a work of art and have differing responses to a piece of music. This does not necessarily mean that the person who sees 'more' in the work is thereby wrong, or just letting his imagination run away with him. In fact, education in art and music proceed on the assumption that it is possible to teach people to see and hear 'more' than they would do without guidance.

It seems that appreciation of a work of art is aided by prior knowledge of the intention of the author. It is possible with a comparatively straightforward piece of literature to test one's subjective responses evoked by the poem, novel or whatever by reference to the text. Greger¹⁸ raises this point with reference to Blake's poem, 'The Sick Rose'. She recognizes the large place that knowledge of the author's intention influences our interpretation by her reference to Britten's 'Serenade' (opus 31) based on the poem. If we did not know the relationship between the two we should be tempted to interpret the music in terms of a concrete past or of 'abstract' feelings like alienation.

One objection to comparing aesthetic with religious experience is that, whereas the latter claims to give us knowledge about the ultimate nature of reality and the force

responsible for the experience, the former does not give us information beyond the experience itself.¹⁹ This objection is not valid for, although it can be said, 'The music speaks for itself; it is not evidence for something else', yet it is still possible to ask questions about the composer and his ideas, intentions and creative powers. With more complex art forms, like an abstract painting, it is possible to ask how far our knowledge of the original intention of the artist can legitimately influence our understanding and equally how many additional insights and interpretations other than those intended by the artist are allowable.

It would seem therefore that Wisdom was right in his analysis of the theological dispute. But how is it possible to get the unbeliever into a position where he can see the state of affairs 'through the eyes' of the believer? In a very perceptive article H.H. Price outlines how this can be done.²⁰ To enter into this position the sympathetic agnostic must first entertain theistic propositions, take them seriously and consider what it would be like if they were true. Gradually he will be able to adopt a role in which he can empathize with the believer. The problem that remains unsolved by all this is the basic question of whether the God, whom the believer claims is behind the religious experiences, in fact exists. Is there any way by which theistic statements can be verified? It is to this question we must now turn.

The Verification of Theistic Statements

Does the ordinary faith of the believer admit of verification? Denis Sullivan²¹ answers in the affirmative. By ordinary faith he means faith uncluttered by sophisticated theological notions like talk of an infinite, eternal, omnipotent God. Such notions may certainly feature in the language of the believer but they would be evaluative rather than informative. This faith has a central element, namely belief in special divine interventions not just in the moral and spiritual sphere but in the realms of finance, politics, meteorology etc., etc.

A characteristic of this faith is its vagueness. It is not unlike the fortune-teller's pronouncement that this month a great event will take place. Because of its vagueness it cannot be falsified; it is compatible with an infinite number of possibilities. Thus a pastor can assure someone of God's help without specifying just how and when God will help. So far this looks very much like Flew's description of the theologian's case, but unlike Flew's examples this vague assurance cannot die the death of a thousand qualifications because, being vague, it needs no qualification. It can also be distinguished from nonsense statements by the pragmatic expedient of distinguishing habits of

conduct which belief in the proposition entail from those involved in the negation of the belief. Thus a belief that God will help and never let the believer fail irredeemably implies that he will never give up, the position adopted by the partisan in Mitchell's parable.

Sullivan argues that the vague assertion we have mentioned is factually meaningful because a believer can look back at the wonderful ways by which God has helped him in the past, for example, by answering a prayer for healing. With such experiences behind him, the believer knows the meaning of God's care and love. However, the existence of God is not objectively verified, because outsiders may suggest other possible interpretations — a point freely conceded by Sullivan.

Positivist philosophy allows for verification in principle and this is the basis of the now famous 'eschatological verification' proposed by John Hick. Hick claims that in our present experience of life there is nothing that decisively counts for or against belief in the existence of God. However, on the assumption of an afterlife the situation could be totally different with the possibility of God's existence being verified by post-mortem experiences.²² As a child looking forward to adulthood only knows what being an adult is really like when he is one, so is the Christian with regard to God. Of course it may be that such verification is only available to the believer. In Hick's words, "It may well be a condition of *post-mortem* verification that we be already in some degree conscious of God by an un compelled response to his modes of revelation in this world". The suggestion depends on the possibility of an after-life for which Hick argues at length elsewhere.²³ The mere fact of survival would not be sufficient to verify the existence of God, although if there were an after-life without God it would falsify it.

But what if there were an after-life where evil predominated and where those who had lived the most virtuous lives, the saints, received the worst treatment? Would this not falsify eschatological verification? Such a logical possibility was considered by Gregory Kavka.²⁴ He proposed the existence of a resurrection world ruled by Satan where newcomers are told that the historical Christ was an agent sent by Satan to raise in good people false hopes of eternal salvation. He argues that the satanic resurrection world might constitute 'a conclusive falsification' of Christian theism, but Donald Gregory²⁵ points out that even such a world need not destroy faith in God. Believers might expect the evil resurrection world to be overthrown by God. Gregory concludes:— "If evil and innocent suffering *do* render Christian theism irrational, then they do so whenever they occur, whether in this world or in Kavka's... And if it is possible to reconcile evil and innocent suffering

with Christian theism, then it is possible to do so whenever they occur, whether in this world or in Kavka's.

Hick's argument has been criticised by Kai Nielsen²⁶ largely on the ground that it presupposes what is to be proved — that there is a God: he also stresses the difficulty of conceiving of God. We shall not attempt to outline the niceties of the arguments, and Hick's replies here.²⁷ Suffice it to say that according to Hick the Christian believer has eschatological expectations which will either be fulfilled, or not fulfilled — no assumption of fulfilment is necessary. We may note, too, that Hick does not suggest that the existence of God for the believer is a tentatively held hypothesis awaiting eschatological fulfilment. He thinks that the believer has immediate knowledge of God in this life which does not need, but equally does not exclude, further verification in the life to come.

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REVIEWS

The Sensitive Scientist. David Morley, SCM Press Ltd.,
1978, 131 pp., PB £1.95.

This book is a product of a study group set up by the British Association for the Advancement of Science in consultation with the British Council of Churches, to investigate the interrelations of science and ethics. The small group included scientists, theologians, and a philosopher, who between them represented both Christian and humanist viewpoints. Prof. John Ferguson, who was Chairman of the group, writes in his Foreword to the book, "Although individual members of the committee might disagree with the emphasis at some points, the document in its final form has the endorsement of the whole committee".

It has been argued in the past that science and ethics are, in principle, unrelated disciplines, science dealing with objective facts and ethics concerned with subjective values. This view could have arisen only from a highly abstract concept of science which concentrated on the logic of the 'scientific method', as portrayed in the earlier writings of philosophers of science. I suspect that few scientists hold this view today; and this book shows, in a clear and fascinating style, why this should be so.

Science is not just the application of logic to observational data, but is an activity of human beings involving the manipulation of material things and sometimes fellow men, in the pursuit of both knowledge and its utilization. It therefore raises questions about the purpose of the manipulation and the motivation of the scientist. It involves judgments of the relative values of different limited natural resources. It demands consideration of the relative merits of different lines of investigation. All of these are complex and interacting ethical issues, as this book demonstrates.

Most of the book is devoted to consideration of a dozen topical issues: *e.g.*, the publication of potentially dangerous research findings, euthanasia of severely malformed newborn infants, the value of extremely costly space research, vivisection, nature conservation, defence research, science in education, and cost-benefit analysis of research. The ethical problems of each issue are carefully analysed, not to provide ultimate answers but to demonstrate the principles involved.

The last chapter is a succinct summary of these principles. It argues that a society has a *common morality* which takes the form of a few fundamental philosophical or theological concepts (*e.g.*, the sanctity of human life, respect for the individual, the importance of knowledge). From these concepts *values* are derived

(e.g., that people are of greater value than animals or plants or inanimate things). Values lead to *aims* or *objectives* (e.g., to feed, and maintain the health of, human beings). Science is then a valuable *tool* for achieving such objectives.

This is, no doubt, a sound logical framework, and thus merits "the endorsement of the whole committee". But while it helps to clarify the ethical issues raised by the practice of science, it does little to settle them. For how does one weight the different principles in the common morality or the various values derived from it? As this chapter points out, such judgments depend not only on a person's religious or philosophical commitment (Christian, Islamic, humanist) but also on the individual's personality (timid or aggressive, shy or friendly, clever or dim-witted, mystical or down-to-earth). No wonder, then, that Ferguson reports 'disagreement with emphasis at some points'. But his group was fairly uniform: all members came from a western, academic, Christian or post-Christian, background. One can envisage that, as British society becomes increasingly pluralist, such ethical problems will become increasingly intractable.

This is a stimulating book which all science students, and indeed all citizens who take their responsibilities seriously, would do well to read.

GEB

John Drane, *Jesus and the Four Gospels: An Illustrated Documentary*, Lion, 1979, 192 pp., PB £3.50.

It is intriguing to compare Charles Gore's *Jesus of Nazareth* of 1929 with John Drane's book, written for the television age. Both are written for the 'average reader', both are written in full cognizance of contemporary scholarship, both are conservative, yet critical. But the one is set out in 250 pages of unrelieved text and the other (slightly longer) with all the skills of Lion's format and photographs. Drane's work is first-class both in content and design. He makes no appeal to a doctrine of inspiration, but he argues difficult points with remarkable thoroughness and only very rarely seems to favour the view that there may be error in the text. There are of course points where judgments will differ, e.g. when he says, "It is quite unlikely that Jesus' words... had ever been written down... by any of his contemporaries". (p. 173) Some would prefer to say that it is quite likely. Gore's book had five reprints in the first six months - Drane's deserves the same!

JOHN WENHAM

Obscenity and Community Standard, St Andrew Press,
Edinburgh, 1979, 93 pp., PB £1.65.

This is the report of the Social Responsibility Committee of the Church of Scotland, which looks at the 'issues of love, law, freedom, sex, consorship and pornography, in the light of the competing claims of family, educationalists, film-makers, broadcasters and the Church'. It is a sane reassertion of traditional Christian principles with practical proposals for the guidance of church people.

JOHN WENHAM

Alan Howard, *God Is*, Marshall Morgan and Scott,
221 pp., £4.96.

This is a useful book, written for the general public by a research scientist of standing. The main thrust of the book is to show that belief in God, far from being made more doubtful by such theories as evolution, is now as reasonable as ever it was. There are many useful and revealing quotations from scientists, supporting Dr Hayward's conclusions and relating, in particular, to the glaring difficulties associated with Darwinism teaching. Well known arguments are used effectively, such as the big ban theory, the second law of thermodynamics, the difficulties of conceiving of a materialistic origin of life and the conclusions to be drawn from the fossil record.

Towards the end of the book Dr Hayward looks at possible objections to belief in God. Here the treatment is very compressed but at least good use is made of C.S. Lewis's writings on man's moral sense. The book closes with a plea for the Christian view of God and man's need of Christ. In an appendix Dr Hayward outlines the different approaches of Christians towards creation: — (1) Theistic evolution, (2) biblical literalism, and (3) successive creations, the author finally deciding in favour of the third. There are also some useful notes.

Dr Hayward's style is straightforward and direct. His illustrations being intended for the man in the street may occasionally arouse antagonism among scientists. I found the first part of the book better than the second as apologetics is too large a field for adequate treatment, nevertheless the book is excellent and one hopes that a less expensive PB edition will appear in due course.

ROBERT WHITE

C.G. Scorer, *Life in our Hands - A Study in Human Values*,
 Paternoster Press, 1979, 160 pp., £1.95.

How does a teenage boy feel when he discovers that he was born out of marriage and that Dad is not really his father at all? How does a man feel if he suspects his wife is occasionally sleeping with another man and that her first baby may not be his own child at all? And how do old age pensioners feel when they detect on the 'Any Questions' programme an increasing social approval of euthanasia with hints that people over eighty have little value to society, and should not be discouraged from 'going' (painlessly, of course)? All suffer a pain God never meant them to endure.

Responsible men and women can hardly remain unconcerned at the movements and social trends that to-day are relentlessly undermining human values. These trends have been analysed *ad nauseam* by the behavioural scientists - but few can have studied them as closely or as discerningly as Mr Gordon Scorer. In this his latest book Dr Scorer explores human life and human values, and looks at those destructive elements in our modern world which are slashing at the very fabric of our society.

With the analytical mind of the doctor he wastes no time on platitudes about man's extraordinary destructiveness or the threat of over-population on our planet, but confines himself to facts - some of which will be new to many readers. This solid factual foundation for his arguments greatly enhances the usefulness of this 'study in human values'. Among Mr Scorer's main topics are Threatened Values in Human Life, Marriage, Conception and Contraception, Population Control, Induced Abortion and Euthanasia. In adopting a topical approach he has made each chapter a self-contained unit and also an illustration of a recurring theme, namely that life finds its fulfilment in relationship, and not in isolation. Just as no man is an island, so none of these subjects can be properly considered in isolation. For example, induced abortion cannot be treated in isolation as if the mother were the only factor in the equation. A man is involved; society is involved; doctors and nurses are involved; human values are involved; and - not least of all - a tiny human being is involved.

Some devastating social evils are already upon us from man's feckless interference with natural physiological processes. This raises the whole question as to the limits to which technology should be applied. Should breast feeding be abandoned for financial or social reasons? Should labour be induced for the convenience of the hospital staff? Should the sex of the unborn child be chosen by parents? Would anyone really want to be dehumanised to the extent of being 'born' a test-tube baby? Is the 'pill' really so harmless? It has social spin-offs, quite apart from its well-known medical hazards, that should give us pause.

In summary the author is asking us, Can we change biological processes with impunity? His answers are very sobering. As Francis Bacon once said, 'Nature to be commanded must be obeyed'.

Like most of us Mr Scorer is concerned about population control, but has no time for simplistic solutions. Although the animal world appears to have some in-built mechanisms for regulating its own population, he is wisely cautious not to extrapolate from animals to men. However, man has the capacity to control population without using destructive means. He also has the capacity to live in reciprocal harmony with his environment. Mr Scorer sees these as the twin foundations necessary to achieve a balance with nature.

If Mr Scorer writes with authority on human values and man's responsibility to uphold them, it is because he builds his case on observable facts and with a biblical understanding of the nature of man. 'Life in Our Hands' is important reading for all who want to clarify their thinking on the fundamental issues of life, death, and human worth, and their bearing on some of our contemporary ethical problems.

JOHN D.C. ANDERSON

Rex Gardner, *What About Abortion?* Paternoster Press,
15 pp. £0.30

For a brief, logical and factual study on abortion and the problems it raises the reviewer has seen nothing better than Rex Gardner's 'What About Abortion?' (Paternoster Press). It is a distillation of his much more detailed work, 'Abortion: The Personal Dilemma'. The author is himself a practising gynaecologist and so he writes from the inside, so to speak. He discusses 25 important questions on abortion, beginning with the Abortion Act (1967) and ending with a predictive glimpse at where the arguments in favour of liberal abortion will logically lead our society.

The author's compassion for people and his sense of fairness come through very powerfully. But because he sees beyond the immediate problem of the woman-with-an-unwanted-pregnancy he takes a look at the wider implications of free abortion and perceptively challenges some of the basic assumptions back of the 1967 Act. That particular piece of legislation was rushed through Parliament and clearly now needs a second look.

Apart from the escalating number of abortions (a five-fold increase in the first three years after the Act alone) a changed climate of opinion has now emerged so that a new group of women are coming forward for abortion who would never have considered it before. This creates problems not only for the already-overstretched N.H.S. but also for the many doctors and nurses who face a continual dilemma of conscience.

A vivid glimpse at the distasteful task facing our nurses came before the public in May, 1979, when a 23-week old foetus, aborted under the Act, actually survived for 36 hours and was even christened. Emma ('whole'), the baby-not-meant-to-survive, managed to breathe long enough for her case to be heard at a coroner's inquest. In this 'International Year of the Child' it is perhaps not inappropriate that the whole question of abortion should be reviewed. Rex Gardner's smaller work will help the public to understand the issues clearly.

JOHN D.C. ANDERSON

Richard Kirby, *The Mission of Mysticism*, SPCK, 1979, 240 pp., £6.95.

Among the spate of recent books on mysticism this is one of the most comprehensive. Although it does not teach methods of mysticism in a few easy lessons, it surveys the ground and the underground of human natural and religious experience. The author has obviously read and thought widely, and, even when he launches into the significance of Ufology, this all seems a reasonable part of his total theme. So many experiences are caught in Kirby's net. He rightly points out that Christians as a whole are unaware of the psychic religions that are appearing around them. Indeed he lists some 160 mystical, semi-mystical, and occult groups that are flourishing today (pp. 61, 62).

It is understandable that the sheer materialism of the age and the formality of many churches have brought a reaction towards innerness which offers real experience. This has been coupled with an invasion of the West by religious leaders from the East, and what began in a small way with Theosophy and the Buddhist Society has now blossomed into the 160 groups mentioned above.

Richard Kirby regards these approaches with equanimity, even though he writes as a Christian, with Martin Israel supplying a foreword. He looks on the movement of history somewhat after the manner of Teilhard de Chardin, but uses tools that Teilhard would not have dreamt of using. All these movements are regarded as signs of man's coming of age, and indicate progress towards what is visualised as *Homo Christus*. 'The task of mysticism is to be Christ's messenger to science in the design of the new race' (p.216). The ultimate goal will involve universal brotherhood, in which there will be both a proper use of science and also a telepathic unity which will to a large extent supersede governmental bureaucracy. Kirby also hints at something which I think I met in Ouspensky, namely the possibility of man's returning to the past in order to correct history where it has gone wrong.

One can see Kirby's indebtedness to science fiction in this and in other ideas, especially to Arthur C. Clarke and Olaf Stapledon. At first sight one is put off by his embracing of

occultism, but he distinguishes this from magic on pages 7 and 8. To him occultism is represented by Theosophy and Steiner's Anthroposophy, both of which have profoundly influenced his thinking.

This is a very different outlook from that which regards all mystical movements as 'of the devil'. Hence the book can be of help to the Christian who wants to see whether any non-Christian belief or practice contains elements of helpful truth. At the moment some Christians are making use of Yoga and adapted forms of Transcendental Meditation, while avoiding being sucked into oriental religion.

Those who go even a small part of the way with Kirby will find special help in his chapter on psychological criticisms of mysticism. There is, however, one strange omission in a book that seeks to link science and spirituality. There is no mention of the valuable EEG and other physiological tests on subjects engaged in meditation. In spite of this one can see this book as a useful vade mecum on ancient and modern inner experience, thought it warms the intellect more than the heart.

J. STAFFORD WRIGHT

Ronald Macaulay and Jerram Barrs, *Christianity with a Human Face*, IVP, 1979, PB, 207 pp. npg

One hopes that these two authors, staff members of the L'Abri Fellowship in England, will have the scope for further writing. When I was younger, I should probably have regarded the book as unsound, since it rebukes graciously some of the standard evangelical approaches in which I grew up. Now in retirement I see much to welcome in the lines that the authors take.

Essentially they are against what one might call 'methods' for attaining spirituality, whether these are the cultivation of mystic states or the picking out of some item in the New Testament as essential. "Christ neither used nor advocated any spiritual techniques. His spirituality was expressed in his whole life" (p.36). How are we to be restored to the image of God, our true humanity? Christ must be the centre and the Holy Spirit aims to renew the total personality in positive life. 'Positive' is the key factor, and in the light of Colossians 2 the passivity of mysticism and the struggle for asceticism are, according to the authors, unhelpful and unbiblical. There is, however, a good treatment of what the renunciation of worldliness, though not the world, may involve for the Christian.

I enjoyed the chapter on the use of the mind, and also several attempts to grasp the nettle of God's sovereignty versus man's freedom. Probably all the questions a Christian would want to ask about Christian living are dealt with somewhere, and the answers are linked to the Bible, to the Trinity, to the living church and especially to the family.

Two misprints. The book is an American printing, but my dictionary of American English does not permit 'boogiemán' (p.16), and a neglected classical education (?) has given 'in loco parente' (p.177).
J. STAFFORD WRIGHT

Jon. A. Buell and O. Quentin Hyder, *Jesus: God, Ghost or Guru*, Probe Ministries International, Zondervan and Paternoster Press, 1978, PB, 135 pp., £2.40.

The threefold title is probably a publisher's gimmick, but is understandable, even though I cannot remember reading the word 'ghost' in the book, and 'guru' is more or less in the background to illuminate the word 'God'. For it is the godhead of Jesus Christ with which the authors are concerned, and this is one of the most thoughtful books on the subject that I have met recently.

The book is not propaganda, but a reasonable build-up in a manner suitable for any intelligent reader. Anyone who writes today must refurbish the standard arguments which have been pillars of the church's belief down the ages. The book does this well. In particular it shows the authority that lies in the Gospels and Epistles, and an unusual diagram on p.72 shows the ages of surviving eyewitnesses superimposed on dates for the circulation of New Testament documents. The survival of witnesses is far too often overlooked by critics.

Dr Hyder is a practising psychiatrist, and is able to take up suggestions that Jesus was suffering from some neurosis or psychosis which gave Him delusions of grandeur. Might one take up some middle ground which would leave Him as a sane and good man, but no more? Earlier chapters have already shown that this is not how He is presented in the only evidence that we have for His life and claims. Moreover, as is shown in an appendix, the Old Testament had already prepared us for more than this. The movement of God to become incarnate man is a problem for thought, but the authors try to assist by a fourth dimensional diagram of the descent of a sphere into Flatland. They take the picture from a recent book, but readers of this Journal may be reminded that a past member of the Victoria Institute, Dr A.T. Schofield, wrote a book on this theme in 1890, *Another World, or the Fourth Dimension*. [Cf. E.A. Abbott's *Flatland*, by 'A. Square', 1884 - Ed]

The book under review is rounded off with a brief imprimatur from F.F. Bruce.

J. STAFFORD WRIGHT

Patrick Sookhdeo, Editor, *Jesus Christ the Only Way*,
 Paternoster Press, 1978, PB, 159 pp., £2.40.

With its subtitle of *Christian Responsibility in a Multicultural Society*, this book has grasped the nettle of Christian relationships with other faiths and their followers. Its origin is the Assembly of the Evangelical Alliance in 1975, which asked a commission to "clarify the issues of inter-faith dialogue, and to help local churches present the gospel unequivocally and yet with understanding of those of other cultures and beliefs".

The commission gives us here a selection of papers by competent Christian writers, and has sensibly included five chapters by spokesmen for Buddhism, Hinduism (a particularly gracious presentation by Vishnu Narayan), Islam, Judaism, and Sikkism.

The method of denigrating other faiths and flinging the Christian alternative at them is now dying. Hence this book is concerned with a dialogue that tries to understand, and yet does not compromise the unique Gospel message. An interesting suggestion from Kenneth Howkins is the value of the broadly based Wisdom Literature of the Old Testament as a jumping-off place.

All the important fields are covered — individual faiths, not forgetting nominal Christians, teaching in schools, contacts with other cultures. One hot potato, the loan of Church halls, and occasionally the sale of closed churches, to members of other faiths is tackled coolly by R.W.F. Wootton and D.L.E. Bronnert.

Altogether one can hardly imagine a more helpful book for its size. But future editions should correct the 'Nobel Eightfold Path' of Buddhism (p.126), and, since the posts held by contributors are given, it would be nice to know who the editor, Patrick Sookhdeo, is.
 J. STAFFORD WRIGHT

David F. Wells, *The Search for Salvation*, IVP, 1979,
 PB, 176 pp., £2.65. (Contemporary Theology Series)

Professor Wells starts by examining some of the areas with which salvation is mainly concerned, especially the purpose and meaning of Christ's work and death, and the presuppositions inherent in the idea of salvation.

Past, present and future aspects of salvation are then considered in separate sections, the last containing some stimulating ideas about social action, and the communication of the message of salvation without obscuration, emasculation and distortion — a caution to those who use "slogans, isolated biblical texts or snappy bumper stickers!"

The next two chapters deal with salvation as understood by the Neo-Orthodox school of Barth and Brunner and by the existentialists Tillich and Bultmann. Though one can easily get lost in the theological jungles of liberalism, the author helpfully guides us through the darkest areas and includes evaluations of a positive and negative nature at the end of each chapter in case we loose our way.

The book then moves on to a timely discussion as to whether and how far Christianity can be 'secularised'. Wells notes a number of agreements between Bonhoeffer (in later life) and John Robinson, Thomas Altizer and Harvey Cox on this issue. He shows how they have tried to accommodate themselves to "modern, post-literate man", yet have done this at the cost of misunderstanding the relationship of God to the world and to man.

Chapter 5 deals with the World Council of Churches and Liberation Theology while chapter 6 is a study of change in Roman Catholic Theology on the subject of salvation.

The last chapter highlights the three main problems that all the views considered have in common — the immanence or transcendence of God, the subjectivity or objectivity of salvation, and the personal and corporate sides of salvation.

However there are some very good points which appear spasmodically in the text and these could repay thoughtful study on e.g. the relationship of doctrine to theology, and there is the best description of modern man I have encountered — spiritually, psychologically and sociologically.

Generally this book is in the same class as I.H. Marshall's *The Origin of New Testament Christology* though perhaps not so immediately relevant as the latter. Certainly this is a book to help students and scholars see how historical and doctrinal issues have coloured our thinking on salvation; but also this book presents us with a practical challenge of translating the essence of our salvation into economic and social action. Any book which blends doctrine with practice (especially the doctrine of salvation) should be warmly received, especially in such a compact and understandable way as Professor Wells has presented it.

There is an author index (a subject index would have been useful) and the notes appear at the ends of the chapters. The binding is poor (but no pages of my copy fell out!). I felt that the quotations given at the beginnings of the chapters are superfluous, though one or two are good (especially Barth's 'creed' by J. Macquarrie p.74).

GRAHAM DOVE

M.P. Cosgrove and J.D. Mallory, *Mental Health: a Christian Approach*, Zondervan/Probe, Grand Rapids, Michigan, 1977, (available from Paternoster Press, Exeter, £1.95).

Take a bunch of hopelessly-divided professionals; mix it with another set of individuals for whom schism has seemed to be second nature; and one has some measure of the difficulties facing Drs. Cosgrove and Mallory in their attempt briefly to set forward 'Christian psychotherapy'. Well-convinced members of either group are bound to have some of their sensibilities offended. With somewhat established membership of both groups, the reviewer was no exception: reading this book was an irritation. But why get irritated? The book has many accomplishments, and is suited for an intended market of uninitiated but thinking students. Exactly at this point, however, great caution is required: with the exposition of such an immensely popular subject, the truly thoughtful student will rightly reject an oversimplified presentation which skates over difficult issues, while the completely uninitiated student will rightly get personally involved with the issues and not notice those which have been skated over. The intended reader, being both uninitiated and thoughtful, is in a dilemma.

The keystone of the book is its second chapter - a description of human nature which is admirably concise, like the rest of the work. All systems of psychotherapy stand or fall on this base, their model of man, from which flow both a view of where he came from (Chapter 3) and a view of where he is going (Chapter 4). The authors make excellent use of the word 'fallen' as a theological-cum-psychological term describing present humanity, with compelling arguments backed by the sheer force of good sense. But there is no comparable discussion of the implied original heights of man, and his transition to the present state. Because of this, the internal coherence of the book's centre chapters, which looks good at first sight, gradually dawns on the awareness of the reader by its absence. The ten goals for mental health are held together only numerically. The fifth chapter, on application of therapy, has a delayed-action impact of confusion, because of a failure to distinguish those aspects of fallen nature remediable via therapy from those remediable via Christian conversion (which incidentally heads the list of mental health goals). A final chapter on the effectiveness of such therapy ends up neither affirmative nor negative, thus concluding realistically - an unusual feature in books on therapy.

Is this all a little sour, overlooking the good parts for the sake of commenting on the poor? Maybe; but as James (1890) warns about faulty assumptions, "one easily makes the obscurest (omissions or commissions - MCB) without realising what internal

difficulties they involve. When they have once established themselves (as they have a way of doing in our very descriptions of phenomenal facts) it is almost impossible to get rid of them afterwards" (Vol. 1, p.145).

In view of the foregoing, perhaps the book is to be recommended only as a 'package' which might include the instructions 'Read and discuss in a group containing some individual(s) informed in theology and psychology'. The latter ought to take note, for example that the statistic of 'approximately ten million neurotics' in the USA (p.11) is quoted from a general psychopathology text now seven years old, where it was then a citation from a still older set of data - and the group enumerated ('neurotics') comprises individuals about whose identification there is widespread disagreement. He should point out that the 'Age of Anxiety' which the neurotics are supposed to evidence is an existential rather than a psychiatric anxiety, a personal reaction to inauthentic living of far greater incidence than the millions cited above. He ought publicly to discount the authors' easy acceptance of the results of J.V. Brady and Stanley Milgram (p.22 and p.29) - much academic criticism has been made of their work (Brady for example unwittingly preselected his ulcer-prone monkeys for high emotionality, thus predisposing them to illness (Seligman 1975); when Weiss (1968) replicated the study without preselection, the opposite finding to Brady's obtained - those in executive positions with power to decide events are not more but rather less prone to ill-health). He might examine with the group whether 'mental health' is that high a priority after all - and if it is, counsel them to renounce all ambitions for greatness since the vast majority of known great persons have been so not so much despite but in conjunction with their psychopathologies; men like St. Paul and John Bunyan did not seem to comply with mental health goal number three (p.43, that one should have a sense of self-worth), and it is not at all certain that they would have taken time off from evangelism to take advantage of psychotherapy had it been offered. Finally, he should help the group to resist the temptation to reject 'Christian psychotherapy' on coming across measures like getting the client to pray to God for symptomatic improvement and help (p.56, p.60) and to attend church (p.67): admittedly this has the appearance of force-fed religion dressed up as 'therapy', but one can only presume the clients for whom it is intended are already Christians.

In this country, 'A'-level psychology students and college CU groups would seem about the right target for such a package. The book forms a useful focus for informed discussion by a fairly open-minded just-adult population, on a topic that - rightly or wrongly - is occupying a great deal of Christians' attention just now.

MARTYN C. BAKER

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 77pp.. Available from Paternoster Press, Exeter £1.95.

Undergraduates in the so-called 'human' sciences are a sceptical lot - having sold three years of their young adulthood to a materialistically-oriented psychology or sociology, their impatient idealism for science may not be too willing to question basic assumptions about human nature. Such questioning (i) pushes them back to the unanswered anxieties of adolescence (- questions like, Who am I? Where am I going in life?), and (ii) at a more practical level may destroy their concentration on, for example, a detailed course in behaviourism due to a preoccupation with doubts about the fundamental issues which make the details worthwhile - and this is positively dangerous the nearer one gets to examinations! Secure upon a foundation of materialism, scepticism therefore serves them well.

Dr. Cosgrove's message to a possibly unreceptive audience is less a presentation of the Christian view of human nature, more a highlighting of the inadequacies of a purely materialistic view. In this endeavour he succeeds remarkably well: three times over he reiterates the gaps inherent from current assumptions about man's nature (chapters 3, 4 and 5), using a most attractive set of experimental findings - 'talking' chimpanzees, radio-controlled enraged bulls, obese white rats, the results of direct stimulation of the human brain. All are guaranteed to hold the attention while working towards the inescapable conclusion, that an immaterial mind can only be ignored at the cost of a brain-with-gaps and a dedicated overlooking of the data already available.

However, human science undergraduates may well already possess the dedication required, and armed with the motto 'More research is required in this area' the gaps are no longer uncomfortable, but provide direction for a future occupation in postgraduate research. There are other points about the book that make one feel it most usefully fills a space in the programme not of undergraduates but of the more open-minded adolescents in the sixth form: (i) undergraduates may well have already heard, ad nauseam, recitation of the data on 'talking chimps', etc. - it suffers from the 'yesterday's news' syndrome; (ii) hopefully, they will also have criticised the use of Heisenberg's Indeterminacy Principle to

attack determinism (p.34), and be unsatisfied by statements backed by no reference source like "in the USSR, serious ESP research is blossoming" (p.34), and reject the thinly-disguised poetry of 'man is uniquely more [than material] -- he is truly man' (p.21); (iii) they will probably agree (though for different reasons) with MacKay (1978) that "the idea of a 'mind of the gaps' is as uncalled-for as that of a 'god-of-the-gaps' and is open to the same objections"; (iv) they may see the thrice-presented issue of the inescapable nonmaterial mind as an inordinate spinning-out of a single argument.

But at the 16-18 year old age group, this book provides quite an exciting consideration of basic issues, that the undergraduate will typically refuse to face until the second attempt to answer the questions of adolescence that takes place sometime during the thirties. Questioning these basic issues involves such an upset to assumptions that have not only dropped below awareness but are often in existence precisely to avoid the questions they so easily answer, that some sort of 'market segmentation' to present the issues to the audience which is most developmentally 'ripe' for their consideration (Baker 1976a, 1976b) seems unavoidable for maximum cost-benefit. Since we cannot make a neutral (Moncrieff 1978) presentation of the Christian view of human nature, Cosgrove's useful book would form a good six-session 'course' for the groups most able to think about what he says - pre-university adolescents, and possibly church groups in the 30-40 age range.

JOYCE E. MONCRIEFF

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