

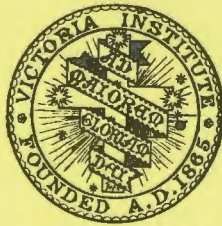
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A Journal devoted to the study of the inter-relation
of the Christian Revelation and modern research

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EDITORIAL

Prize Essays. The Gunning Prize for 1974 has been awarded to Dr T.R.Griffiths of Leeds for an essay entitled "Let the Earth bring forth". The Schofield Prize is not awarded.

Index. With this issue we are publishing the index for the year as usual but also the combined index for volumes 71-100 inclusive. This is the third cumulative index published in the Society's history and it is much fuller than the preceding indices. Back issues of the Journal contain a great deal of interesting and important material but the lack of an index has made it rather inaccessible until now.

The Society holds limited stocks of old issues of 'Faith and Thought' and of the older Journal - apply London office.

Binding. Groups of past issues suitable for binding into single volumes, comprise vols. 90-92;93-95; 96-98 and 99-100 making four volumes in all of $1\frac{1}{2}$ -2 in. in thickness. These or any other suitable

combination of issues up to 2 in. in thickness (including boards) can be bound for £2.50 (hard-backed, gold lettering, blue cloth, original covers bound with the volumes, return postage included) per volume. Back parts can usually be supplied but enquiry should be made first. Issue No.3 of vol. 96 was not published. Send back issues together with cheque/ postal order etc. payable to the Victoria Institute, to the Editor. Allow 3-4 weeks for return. FAITH AND THOUGHT started with vol.90; previous issues of the Journal of the Transactions of the Victoria Institute were supplied bound.

Printing. To save otherwise unavoidable delay we are producing parts of this issue by the Instant Print method from typescript. The Editor would welcome any comments from readers.

IN THE NEWS

Too brainy?—Nuclear war—Cities in the skies—Secret knowledge—Is there wisdom in the East?—Changed water—
 session—Drugs and Aztec art—Notes

TOO BRAINY?

Every week, for around 400 weeks, the New Scientist has set its readers a little puzzle headed "Tantalizer". On 7 March 1974 the Tantalizer went like this. Four spouse-faithful pairs of snails were set out on a square patio made from 36 paving stones, one member of each pair being well separated from its partner. The problem was to find a way by which one of each pair of snails could find its mate by walking along the junctions of the paving stones only, without crossing the paths of any of the other snails. It is the sort of problem which can worry older folk not a little, for it is so easy to get bogged down by

innumerable false starts : indeed, we are told that some highly educated college lecturers were unable to find a solution.

However, Mr John Pearce who teaches in a school in North London tried it out on his class of children aged 8-9. Many of them solved the problem easily and quickly. A maths group of the most backward of the 9-year-olds, one child of which is unable to count even on her fingers, were especially successful. Mr Pearce and a colleague became convinced that the pupils' success was helped by a fellow feeling for the snails. College lecturers with high IQ's rarely indulge such feelings!..., which illustrates the point, so basic to Christianity, that simple folk can often understand truths that are hidden from the wise.

NUCLEAR WAR

Why was Japan atom-bombed? Dr Vannevar Bush, well known as the inventor of the Bush differential analyser, one of the early mechanical computers, died recently and obituaries have been appearing (eg, Nature, 250, 302). It was Bush who with Conant and Compton advised President Truman to use the atomic bomb on Japan.

We are reminded again of the reasons given for this momentous decision. Bush was motivated by two considerations. Firstly, he was confident that in this way Japanese as well as American lives would be saved. It gave the Japanese Emperor an excuse for capitulation: without that excuse the Japanese would have fought on endlessly so long as any of them was alive. The measure of their determination to fight was recently shown by the capture of Corporal Yokoi after 28 years in the Guam jungle and even then he immediately attacked the two locals who spotted him and believed for quite a time that he would shortly be put to death (see The Last Japanese Soldier, Stacey, 1972). Japanese soldiers at the

time of WW2 held that foreigners were animals and during the war they sometimes ate Americans but not their fellow Japanese for that would have been cannibalism.

Secondly, Bush reflected that mankind had to make a choice; either to refrain from using all-out science in war, or to put the clock back to the middle ages. It seemed to him that the use of the bomb "was the only way in which the dilemma could be presented with adequate impact on world consciousness".

The impact was indeed terrific : the balance of terror has probably prevented the outbreak of another major war. But mankind has not learned the lesson. In the SIPRI (Stockholm International Peace Research Institute) Yearbook for 1974 Dr F. Barnaby the Director, says, "The Choice before mankind is a simple one; nuclear disarmament or oblivion. In the absence of disarmament more and more nuclear weapon powers will emerge. A limited nuclear war will eventually break out which may well escalate to a strategic nuclear exchange between the super-powers and extinguish our civilization. The nuclear paradox is Man's total inability to cope with the obvious, even when it is a matter of life and death for the human race". (quoted, Nature , 250 , 9). SIPRI insists that there is no middle way even though disarmament is now a dirty word in many government circles.

The horror of the possibility of nuclear war now seems to be passing into history — new weapons (gunpowder, guns, high explosives, submarines, poison gases, airships and aeroplanes with bombs) have always produced horror in their day, but the horror has always passed away. One day it will be too late. A recent public opinion poll in India tested the reaction of 250 literates in each of the cities of Bombay, Calcutta, Delhi and Madras: 89% thought that the recent Indian nuclear test raised

Indian prestige; nearly one half wanted India to build weapons and only one third wanted India to use nuclear energy for peaceful purposes only (Nature 251, 96).

Not only would the use of nuclear weapons cause unimaginably serious devastation of the earth, but explosions in the high atmosphere, caused by the interception of ballistic missiles, would largely destroy the ozone layer which cuts off the sun's light in the ultraviolet region. Many forms of life would suffer, particularly plant life. It seems to be typical of the level of political and military thinking that "none of the deliberations on reduction of nuclear arms pay the slightest attention to this photochemical parameter" (Nature, 250, 189).

CITIES IN THE SKIES

The mythology of science gets more and more fantastic. Dyson's proposal to break up Jupiter and produce from it great numbers of tiny earth cities circulating round the sun was mentioned earlier in this JOURNAL (100, 192). A later suggestion is to establish cities at the two stable gravitational "islands" 120° ahead and 120° behind the moon in its orbit round the earth (G.O'Neill of Princeton, Nature, 250, 636). "Such cities are now feasible" proclaims a newspaper headline. The cost? Why, less than that of a walk on the moon!

Much more startling is the proposal to build a city round a black hole. If perchance we get too close we shall be sucked down and never come out again, unable even to radio a plaintive SOS.

But if the clever back room boys get the distance just right we shall be towed round and round in highfalutin style. No trouble with pollution either: rubbish will go overboard into the black hole with the added advantage that the rubbish will turn into energy and we shall capture some energy from the hole in addition as we throw our garbage away. No energy crisis looms ahead! (Nature, 251, 12)

Ancient writers used their imagination freely, concocting all kinds of strange stories about gods, goddesses, heroes and monsters in the sky. Even the early Christians of the post-apostolic age wrote apocryphal gospels filled with make-belief stories of marvels. Was life too prosaic? Does man's mind need these flirtations with the improbable or impossible? The motivation behind the new mythology of science seems to have this origin. For the population at large today, even for many scientists and technicians, science has become dull — a mass of facts, unrelated, uninteresting, and often too difficult to grasp. So the clever professors react by mythologizing in the Dyson fashion or, like Hoyle, take to writing SF novels, while others seek escape from drabness by challenging the foundations of orthodox science. These are the 'Independent Thinkers' who interest such writers as Patrick Moore (see 100 , 188) and John Sladek.

The situation is worrying orthodox scientists not a little : an Editorial in Nature was devoted to the subject not long ago (248, 541). Science really is interesting but the wild undisciplined imaginations of the unorthodox side track those who might otherwise enjoy knowledge of established fact.

But who can make science enjoyable? The science writer, of course. His role was discussed at the recent British Association meetings, notably by David Fishlock of the Financial Times (BA Supplement, Nature, 250 , 747). Science writing is a difficult art and few there be that become skilled thereat. Difficulties are formidable. Writers tend to be sensitive persons but to write on science you need a skin as thick as an elephant's. The amount that has been published in science is prodigious and the unfortunate science writer may be called upon at a moment's notice to write on something about which his knowledge is near zero. No wonder if he is sometimes guilty of the odd howler and makes the professional

scientist look askance! Quite apart from this science reporting is often "so humourless, so lacking in wit and charm", says Fishlock.

Much of this could be paralleled in the theological field. Theologians can be extraordinarily dull and way above the grass roots of living. Is it any wonder that those who are religious often find excitement and interest in the bizarre notions splashed by unorthodox sects or look wistfully towards the East for enchantment? In the fine article "A Model of Making" printed in this issue Miss Etchells draws attention to the humorous and joyous element in the biblical doctrine of creation. Many years ago the late T.R. Glover also stressed that our Lord's teaching was often full of fun. Orthodox science seems to have lost the battle to make science interesting — have religious folk lost their battle too?

SECRET KNOWLEDGE

Before WW2 we were brought up in the tradition that science was open and international. In general the idea of keeping scientific results under a hat was deemed immoral, though a partial exception in the case of war research was acknowledged reluctantly by some. The writer, for one, was shocked out of this position in the mid-1940s by the appearance in a chemical journal of a simple way by which one of the most dangerous of all chemicals, which hitherto had been very difficult to make, could in fact be prepared quite simply and quickly in a test tube using materials which might well be around in an ordinary school laboratory.

In the intervening years the same problem has arisen again and again. Should all the information be available for any Tom, Dick or Harry to assemble a nuclear bomb in his back garden? Or if by good fortune this is hard to do, what about other dangerous activities? Making ordinary bombs or some of the dangerous drugs, for instance?

The debate has now entered a new phase. Even if intentions are not wrong, results might be catastrophic. Recently eleven eminent scientists of the National Academy of Science, Washington signed a report emphasising the dangers that may arise as a result of biological research producing new strains of bacteria. New genetic material can now be introduced and the biological properties of the resulting molecules cannot be predicted. The scientists urge that these researches should be stopped internationally until potential hazards can be assessed (reported, Times, 19 Jly. 1974, New Scientist 25 Jly. etc.). The particular kinds of experiments thought to be most dangerous are those in which genes conferring resistance to antibiotics or those which cause cancer are introduced into bacteria. Not all scientists agree on the proposed ban: the matter was debated recently at the Royal Institution (televised BBC2, 16 Sept.).

We are reminded of the story of how Robert Boyle in his private laboratory in Pall Mall, having 'purified' some mercury in the way that alchemists (according to their recipes) were supposed to purify it, mixed it with gold dust and felt it grow warm. Boyle had learned from the alchemical texts that this is the sign that transmutation is taking place and, delirious with joy, was confident that he had discovered the alchemical secret. Unlimited transmutation, unlimited gold was now within his grasp. So confident was he of success that he used his influence to get the Act of Henry IV against "multipliers of gold" repealed.

But as a Christian Boyle realised that his 'discovery' would, if widely known, spell the downfall of society. So he stopped researching in this line and for 24 years concealed his 'discovery'. Then, wondering again if he was doing the right thing, he wrote in strict confidence to a young and coming man of science, Isaac Newton. Together they agreed that it was their Christian duty to remain silent. And Boyle never told

how he prepared his mercury, nor was anything on the subject to be found among his papers after his death. (L.T.Møre, Boyle as Alchemist, Jour.History of Ideas, 1941, 2 , 61)

IS THERE WISDOM IN THE EAST ?

In an interesting article in a recent issue of Nature commemorating the 21st birthday of the DNA spiral, G.S. Stent of the University of California develops an unusual line of argument ("Molecular Biology and Metaphysics", Nature , 248 , 779).

Salvador Dali in 1964 said of the DNA spiral, "This is for me the real proof of the existence of God". Francis Crick later poured scorn on this utterance : to Crick the discovery of the spiral seemed the final disproof of vitalism and therefore of God.

Stent, going back to Plato, argues that the basic principle of Theism is that Eternal Reason brought nature into existence and/or regulates phenomena. Man studies nature and finds there principles and arrangements of matter which conform to reason : by thought he appreciates and understands them. Stent points out that although Crick calls himself an atheist, his view is basically Platonic, even theistic. For example, in writing of genetic mechanisms , Crick says, "Nature's own analogue computer — the system itself — works so fantastically fast. Also she knows the rules more precisely than we do. But we still hope , if not to beat her at her games, at least to understand her." Though he here speaks of Nature, instead of God, he accepts Reason at the back of things, a Reason with which we make a kind of contact by sharing its thoughts.

Stent then argues that the same Platonic doctrine lies also at the back of ethics. Right and wrong are concepts in our minds and because we, theists and atheists alike, accept the view that Reason is at the

back of things, we assume that they correspond to something absolute; that they are "objectively valid ultimate values". Ethics, therefore, belongs to God or Eternal Reason. No matter how hard he tries man cannot by reasoning find an ultimate basis for ethics: to quote I. Berlin (1971), "the belief that the correct objectively valid solution to the question of how men should live can in principle be discovered is itself in principle not true."

However, if we come to the conclusion that there are features of the natural world which in the nature of things are impenetrable to the human intellect — the three candidates are ethics, vitalism and the soul (Descartes' 'something' extra which gives the machine-body its morals, etc.) — we must immediately begin to question the existence of God. "By questioning the accessibility of the world to reason, vitalism raises doubts about the existence of God as the Author of nature or Natural Law." As with ethics, if vitalism be true, we raise the possibility that "life is not God's handiwork after all". But if it is true that biologists have undermined vitalism and so made life intelligible, then it is Dali rather than Crick who is right: God planned the world, including the genetic mechanism, and saw to it "that it is comprehensible to man".

So our Western culture is self-contradictory, says Stent. For our mechanistic world of science we need to hold that nature can be penetrated by reason. But to hold this destroys belief in right and wrong and in the mystery of life, and in the absence of these beliefs society cannot hold together.

Stent then cites two glaring examples of the contradiction. T.S. Szasz (The manufacture of Madness, 1971; Ideology and Insanity; Essays on the Psychiatric Dehumanization of Man, 1973, etc.) argues persuasively that in speaking of mental illness (rather than responsibility and wrong doing) we depersonalize

persons. In ridding the world of Cartesian dualism we kill ethics (at least in part) for there is nothing right or wrong in being ill, but a person can be responsible for unnatural mental states.

As a second example Stent instances the sense of incongruity we feel when the proposal is made that in order to rid the world of stress which is making stable government impossible, the next generation of mankind should be cloned (i.e. large numbers of identical persons should be produced by making use of new biological techniques). Scientifically and rationally this might be the best course to take, yet we feel revolted at the idea that mankind should be reduced to a glorified ant hill. Again our two ways of thinking prove antagonistic.

For Stent the only way out of the dilemma is to adopt the pagan culture of the East. With the Buddhist we must distrust reason and avoid desire. Then God will no longer matter and ethics will become a matter of relativity.

This analysis is interesting. but Stent seems blithely unaware that Eastern culture is no better equipped than Western to deal with life and living. Two investigations in high schools in Malaysia showed the students, many of them Chinese, to be in as muddled a state of mind as are any in the West. Nearly all pray in times of crisis(eg. in taking examinations), so God is meaningful. They learn to combine what seems proper and good in Taoism, Confucianism and Buddhism ("The Three Religions in One") but their religion and their science are quite distinct, "What is true in one need not be true in the other... Because religion and science are two spheres a scientist can live in both accepting the values of each." (Ake Hagland, Contact and Conflict , Lund, 1972, p.216.) This state of affairs is hardly suggestive of an eastern haven of refuge from the self-contradictions inherent in the West. J. Van de Wetering's

book, The Empty Mirror (reviewed in this issue) tells the same story.

Interesting as he is, Stent's logic is wrong. We do not need to know that everything can be penetrated by human reason in order to know that Reason is involved in the making of the universe. Enough if we can gain some understanding. God's ways and thoughts are higher than man's : He has every right to make certain areas impenetrable to human reason if He so wishes.

CHANGED WATER

The Editor well remembers how, in the early 1930s, someone turned up at the University Chemical Laboratory in Cambridge with a new gadget for preventing the deposition of scale in boilers. The feed tank to the boiler was fitted with a small neon tube containing some mercury. When fresh water entered the tank the vibration shook the mercury and the electric charge generated made the neon glow red. It was claimed that water which had seen the red light would no longer deposit a scale in pipes or boilers but precipitate a fine powder instead which was soon washed away. For some time the engineer in charge was sure that the device was working well, but later enthusiasm waned and soon the device ceased to be mentioned. Much later, in 1960, the idea was revived again using helium and mercury, the gadget being referred to as the "Tonisator".

Around 1959 another method came into use. Water was first of all passed near a magnetic field before entering the boiler. Results were said to be quite sensational. Patents for the so-called CEPI device were obtained and it is said that 50,000 successful installations are in use.

In 1966 some Russian scientists (Bruns and others of the Mining Institute in Moscow) became interested in magnetically changed water and a whole

subliterature budded and blossomed. Pseudo-explanations were offered in abundance — it was said, for example, that there is a resonance interaction with the vibratory groups of water molecules under the influence of the field (what ever this may mean). Russians claim that magnetized water is changed in many different ways. Bruns says that the optical absorption is reduced by 30% for a few hours, then it rises again, after which it once more passes through a maximum and minimum (a joke ? — all this is deduced from five points on a graph !). Claims are made that a magnet makes the pH of water change by half a unit and that there are changes too in the surface tension and the specific inductance capacity (Nature , 240 , 729). Now news comes of a recent patent (B.P. 1 346 972) — you magnetize water as you spray your car and the magnetic water proves to have a greater attraction for dirt than does the car.

All this is probably nonsense. High nosed scientists in the West ruefully reflect that boiler engineers are accustomed to resorting to quasi-magical methods to avoid scaling. Proper control experiments are apt to be lengthy and the get-rich-quick mentality is incompatible with scientific caution.

All of which is a salutary reminder , outside the medical or religious field, of how quickly unsound ideas can spread. The Christian will reflect that factual support for the beliefs of the many large and influential religious cults lying near the fringe of Christianity is as poor as for magnetic water. Just as men set aside scientific principles taught in our schools at vast public expense in favour of unchecked and improbable claims, so they reject the clear evidence offered by traditional Christianity, and turn to materialism or the doctrines of the way-out cults.

POSSESSION

The subject of possession by demons came to the fore earlier this year with showings of William Friedkin's

X-film "The Exorcist". As a means of drawing attention to the forces of evil at work in the world today the film probably did good, even if it proved intensely shocking to sensitive people.

Although scepticism as to the existence of demons is widespread among academically-minded Christians at the present time, most if not all who have studied the subject would probably agree with T.K.Oesterreich who, writing of the NT stories says: "Comparing these brief stories with the accounts of the phenomena of possession of later times... our respect for the historic truth of the Gospels is enhanced to an extraordinary degree." (Possession: Demoniacal and Other, Eng. Trans., 1930, p 4.)

The strength of the views widely entertained on the subject were well illustrated by the Modern Churchman's review (1973, 16(3), 221) of the Report of the Bishop of Exeter's Commission on Exorcism (SPCK, 1972) in which this pamphlet was dismissed as 'silly' and its writers as 'ignorant'.

Demonism is supposed to have been refuted in particular by Oesterreich and by H.A.Kelly (Towards the Death of Satan, Geof. Chapman, 1968). However, although psychological 'explanations' of the phenomenon of possession are perhaps possible it would be difficult to find concrete evidence that belief in demons is false.

Modern disbelief stems, we may be sure, from reaction to past and indeed even present over-belief. In the past over-belief gave rise to much ridiculous discussion in the medieval church and finally to the witchcraft trials of the 16-17th centuries. Today we have the spectacle of Donald Omand whose book Experiences of a Present Day Exorcist (Kimber, 1970) describes his travels round circuses praying for the souls of departed animals and exorcising evil spirits from circus lions, etc. Recently he appeared on tv ex-

orcizing the monster of Loch Ness, which he identifies with the ghost of a monster that actually inhabited the lake some millions of years ago and which he claims now exerts (or did before the exorcism) an evil influence upon the locals. In his book pompous prayers for these exorcisms are given in full : exorcism seems to be especially efficacious if one throws salt which has been duly blessed into water so that it falls making the sign of the cross. There is a Foreword to Omand's book written by the Bishop of Portsmouth.

Terrible cases of possession, usually connected with witchcraft, have lately been recorded in the popular press (eg. 17 Mar, and later issues of the Sunday People) nevertheless it is usual to attempt to explain psychologically any success attending the activities of Western exorcists. After all, everyone knows that demons are supposed to respond to Christianity, so expectations (not necessarily conscious) may do the trick. Considerable interest therefore centres on possession and exorcism in foreign non-Christian countries.

Accounts of demon possession and exorcism in the Orient are all too rare. H.W.White's Demonism Verified and Analysed (Shanghai and Presbyterian Committee of Publ., Richmond, VA, USA, 1922), now all too rare, and J.L.Nevius's Demon Possession and Allied Themes (Revell, 1892 etc), both written by missionaries, describe cases in China but since the early part of the present century few missionaries have encountered the phenomenon. James Knight ("Demon Possession", this JOURNAL, 1931, 63, 114-152, gives a useful survey of the field. See also H.J.Orr-Ewing's paper, "The Medical Miracles of our Lord" 1945, 77, 19 and W.M.Alexander, Demon Possession, Edin. 1902 .)

In this connection attention should be drawn to John Blofeld's charmingly written book, The Secret

and the Sublime (Allen and Unwin, 1970, £1.95 and £3.95). For 17 years the author travelled by foot, mule or boat around the Chinese countryside in the third and fourth decades of this century, visiting in particular the hermitages and monasteries of Taoists and Buddhists. He fears that Taoism is now vanishing from the earth and tries to recapture the world of the 1930s where every Taoist believed in gods and spirits. At that time native exorcists cast out demons in the traditional ways and fox demons appeared as enchanting young girls beguiling and finally luring to their deaths foolish young monks.

On one occasion Blofeld entered, almost accidentally, a murky Taoist chamber filled with statues, the gruesome reminders of man's devilish, inventive-ness in devising means for inflicting pain. All the horrors of hell were there, depicted, not in mere words or pictures as in the West, but in physical artistic form. For the devil is not confined to christendom.

Blofeld hoped to witness an exorcism but when one was about to take place he was informed that no third party was ever allowed to see what transpired between an exorcist and his patient. For a prolonged period he heard rumbustian shrieks emerging from the room where the operation was conducted. His colourful account of this episcode covers five pages. It was evident that the method depended upon application of terror tactics and the room was later found bespeckled with the blood of a bird. Eventually the priest emerged announcing that the demon was expelled and promising that it would not return. He pocketted his fee and made off. The poor girl was so weakened by the ordeal that she died after lingering on in great misery for a week or two.

In contrast White tells of demons who would leave when so commanded by native Christians in the name of Jesus. This happened often even when the people around knew nothing of Jesus or Christianity.

To quote: " In using the name 'Jesus' we have first to explain whether it refers to a thing or to a person. As the transliteration of the '-sus' is the same sound as the word for 'book', the Chinese think we are talking about 'Je-' books. Even when they get the idea that Jesus is a man, they think he is some American or Englishman." (p.100.) Yet under such conditions demonized persons always recognized the authority of Jesus. Norman Deck, for long a missionary in the Solomon Islands had similar experiences (for a detailed case, see this JOURNAL 77 , 29).

There is nothing like this in Blofeld's book. But starting in a mood of scepticism he becomes convinced in the end that dark forces of evil are at work. Yet he also sees a happier side to life : possession does not trouble every family and the Tao brings contentment to those who leave demons well alone.

DRUGS AND AZTEC ART

An interesting paper by W.D. Sturdevant (Archaeology, 1973 ,26(1) , 10-15) deals with Aztec art. The Aztecs made use of a variety of hallucinatory drugs (sacred mushrooms, peyote, hashish and morning glory seeds) : Montezuma and his chiefs regularly used the mushroom in large doses at their "Feast of Revelations". The Aztecs saw horrific visions, particularly of snakes and often of their own bodies in which they seemed to see worms eating their unfortunate hosts from within. WDS believes that repeated visions of this kind led to the development of their bestial and savage rituals. Over two centuries (1324-1521 AD) thousands of men, women and children were ritually murdered : often their beating hearts were cut out and solemnly eaten. The visions are depicted in sculptures, elegantly executed and often weighing several tons. The article is well illustrated. On walking round such a sculpture one sees glaring eyes, dismembered hands, the fangs of snakes, etc., appearing one after another.

This historical study provides additional warning of the danger of removing controls on hallucinatory drugs. Already terrible stories from USA of murders committed by drug-addicted desert groups have appeared in the newspapers.

In the Western world we are apt to suppose that drug-induced visions are private affairs but the Mexican example seems to suggest that members of the same cultural tradition, may see substantially the same visions. Thus it becomes possible for a unified religion based on drug taking to be created. The sculptures depicting horrific scenes would have helped subjects to see similar visions.

Readers of J.G.Fuller's The Night of St Anthony's Fire (Hutchinson, 1969) will know the story of how, apparently, the formation of LSD or a similar compound (formed accidentally in flour) in 1950 gave rise to extraordinary visions among the inhabitants of a French village in Provence. At the close of the book the author develops the theme that the fearful visions seen by St Anthony had a similar cause as had much of the bizarre demonology of the medieval world.

SHORT NOTES

Struggle Cosmogony. In an interesting article with the title "The Polemic Nature of the Genesis Cosmogony" (Evangelical Quart., 1974, 46(2), 81) Professor G.F. Hasel argues that there is contrast all the way through between, on the one hand the Hebrew, on the other the Egyptian and Babylonian stories of the creation. Most noticeably, in the Hebrew story, there are stages in the divine fiat; in the pagan stories there is struggle as earth and heaven separate. It is tempting to compare the ancient pagan idea of struggle as a basic constituent of the universe with the modern Hegelian philosophy, lying at the basis of Marxism, with its emphasis on struggle between thesis and antithesis, with synthesis as the final outcome. As in ancient

times creation and struggle still represent the two antithetic philosophies of today.

Messiahs. An interesting point is raised in Nils Bejerot's Addiction and Society, 1970. LSD induces the same effects as extreme exhaustion, prolonged starvation, monotonous movement, fever and long periods without sleep. The patient is later convinced that his experiences were more real than normal consciousness. From beatnik areas in USA there are reports of dozens of LSD-produced messiah figures: "each thinks he is specially chosen". (Cf. Mt. 24:23f)

Speaking in Tongues. (See 99,6) Neo-pentecostalism has now taken a firm hold in the Roman Catholic Church, especially in America, and is providing a bridge between Protestants and Catholics. In the NT the function of the Holy Spirit is to lead men to the truth ("When the spirit of truth is come, he shall guide you into all the truth" Jn. 16:13). There are doctrinal differences between RC and Protestant Christians and many are now commenting on the fact that the new charismatic movement is doing nothing to iron them out. Not unnaturally many Christians are sceptical as to whether the Holy Spirit is at work in the movement. In the past the need for patience was urged, but it is now being pointed out that it is seven years since the RC movement started in a big way, yet there is still no indication that the RCs who practice glossolalia are abandoning RC 'errors', or Protestants endorsing RC doctrines (C.Longley, Times, 29 July, 1974). Yet the subject is puzzling for there is no doubt at all that speaking in tongues proves spiritually helpful to many Christians.

Clean and Unclean Food. The June 1974 issue of the Jour. of the American Scientific Affiliation (26 Nov) takes up the theme of scientific inputs to biblical studies. In one section (pp.61-64) T.D.S.Key and R.M.Allen discuss Levitical Dietary Laws, enumerating the pros and cons of the theories as to why God ordained them.

(obedience testing; arbitrary command; moral discipline; hygiene theory; spiritual symbolism; religious badge or mark display, etc.). The Hygiene theory is perhaps the most convincing but it is remarkable that no poisonous plants are listed as unclean.

Tachyons. (See 101, 10) Two physicists (R. Clay and P. Crouch) at Adelaide have been studying cosmic ray showers (Nature, 248, 28). In over 90% of the showers studied, 'something' activated the photomultipliers just before a shower began to arrive. A shower originates at a height of about 20 km and is caused by the encounter of a cosmic ray with the earth's atmosphere; the fast particles formed then travel towards the earth with a velocity close to that of light. The most straightforward explanation is that the 'something' which arrives before a shower consists of tachyons or particles travelling faster than light. In the authors' words: "We suggest that this (effect) is the result of a particle travelling with an apparent velocity greater than light."

UFOs . According to Bible-Science News Letter July 1974 the 20th Century UFO Bureau at Collingwood, N.J., Longstreet, West Columbia, has become interested in the possibility that UFOs originate with evil spirits. It is argued that if they are controlled by beings from another planet they would have tried, long ago, to communicate with us. Instead, indications are that they aim to produce fear and intimidation "driving vehicles from the roads and pilots to their deaths". An interesting suggestion, this, of which perhaps we shall hear more in future! Belief in flying saucers seems to be remarkably prevalent in America. In the same article it is stated that according to a Gallop Poll in 1966, 46% of all Americans thought that we were being visited by beings from outer space , while in 1973 the figure had risen to 51%.

D. G. BANHAM

Ethical Problems in Revolutionary War

Mr. Banham, now a minister of the non-Subscribing Presbyterian Church of Ireland and formerly a Lieutenant-Commander in the Royal Navy and an expert in weaponry, has had practical experience in dealing with terrorist operations in various parts of the world. In this short article, a challenge to Christian thinking, he analyses the motives and techniques of terrorism.

In 1945 the first atomic weapon used in war was dropped over Hiroshima. The ethical problems raised by that bomb and the later development of nuclear weapons are now well known. But it is not often appreciated that militarism did not stand still. War, defined as the violent means by which one group of people imposes its will upon another group, also had to come to terms with weapons of mass destruction; and more and more groups have turned to using methods of mental and moral destruction as cheap, safe alternatives.

These methods are not entirely new, since guerrilla-type terrorism has a long history. But what is new is the speed and efficiency of modern communications so that terrorism is now a far stronger weapon than it has ever been in the past. Moreover, it makes use of a scientific knowledge of human behaviour in order to defeat people through their own best qualities. Thus it challenges religion itself in the hearts and minds of the people who are being attacked, in such a way that the challenge is often unrecognised.

The terrorists then have a clear field to manipulate peoples' feelings into actions which lead to a situation in which the ruling authorities simply cannot rule or keep the confidence of the people. This eventually leads to withdrawal or abdication of responsibility and the terrorists, through some front organisation, move in as "saviours" from anarchy.

It would be wrong to assume such methods are necessarily and always Communist. They were, for example, used by Grivas in Cyprus, by nationalists in Palestine and Kenya, and by Michael Collins in the 20's in Ireland. Indeed, it is those methods in use in so many places that are the main cause of the widespread violence we deplore in today's world and which at first sight seems so pointless. But it is certainly not pointless. What has not been grasped is that the main point of attack is not some authoritative force, such as the police or the army, but *public opinion* and the will to resist. Every bomb and bullet, riot and boycott has one eventual aim in end. That is, to erode away public morale. Once public opinion has been shocked by the ferocity of the attacks, shamed by the disclosures of actually inevitable, near brutality of the police and army in keeping order, and hammered by continuous events into a conviction that the authorities do not rule, then public opinion succumbs to apathy and to looking for some way out of the "mess". This means surrender, or at best compromise, or at worst the creation of some form of totalitarianism which carries within it the seeds of future conflict.

Sufficient examples now exist for a general pattern to emerge in the following form. Firstly, there is the need for a "cause" which will touch as many peoples' hearts as possible. Enthusiastic liberals and purely emotional Christians are very liable to be dragged in at this stage especially where the "cause" is indeed a wrong about which something should be done anyway. But it is worth noting that Brigadier Kitson in his book, *Low Intensity Operations* cites several examples of "causes" that were worked up where none existed with a broad enough appeal. Whatever the cause, the second step is to get the enthusiastic reformers out into the streets in as large numbers as possible. This will, inevitably, mean a confrontation with the police, if necessary through picked

“stone throwers” or the like. In the resulting baton-charge people will be hurt, tempers roused, charges of brutality made, and the challenge to the authorities in the form of the police has begun. The masses can now be called out with personal hurts to revenge; and the spiral of violence has commenced.

At this point apparently self-appointed “protectors” of the people appear. They start with bullets, then, to quote Kitson, they continue with “carefully calculated acts of revolting brutality designed to bring excessive government retaliation on the population thereby turning them against the authorities”. This strengthens their appeal especially with young people who see only that the soldiers are arresting, questioning, searching and oppressing in other ways their parents, their friends and their homes.

The news media play an important part in the campaign. Especially in a democracy, the media seek to be “fair” but “newsworthy”. Acts of violence by the few, however, are thus given exceptional prominence and swiftly create an impression that the authorities do not rule and certainly cannot protect. Yet the number of real heartless killers is surprisingly small. In Cyprus, General Grivas started with 88 men and never had more than 250. In Cuba, Castro and Guevara were at one time down to twelve; yet they built up by the methods described above till they took over the whole country. This makes the job of the authorities exceptionally difficult because every clumsy search, every act of firmness and every compulsive measure will harass or injure mainly innocent people — thus creating the hatred and distrust of the authorities which the terrorists desire. Eventually public determination crumbles and a way out is sought — generally surrender disguised as “compromise” or, if the arena is a colony, by the withdrawal of the army.

The ethical problems are extremely complex. At the first stage of getting people out onto the streets the “cause” or “causes” will have a wide appeal and, almost certainly, include grievances that are real. It is impossible to say that Christians should in future object to bureaucratic unfairness or blatant injustice. But what does need emphasising is that in righting a wrong, there is a right

and a wrong way of going about it. Moreover, pastors should be much more aware of the crowd manipulation tactics which are used today. At the stage of real violence there is an urgent need for calm, clear thought, for sanity and Christian charity. Unfortunately most of the people will no longer be in a mood to listen. Anyone who tries to stand firm against the tides of popular emotion risks ostracism or worse; and what a minister can, and will, attempt to do depends on the strength of the bedrock of his faith.

There are even more difficult ethical problems for the authorities. The primary duty of the police and the army is the strongly ethical one of maintaining law and order so that the weak, the old and the young may live in peace, and — in any worthwhile society — that true standards of justice exist for all. Indeed, any falling below that standard is to give point to the terrorists' propaganda and to create shame and despondency in the hearts of decent people. In a divided community the appeal of the original "cause" will also divide the authorities, especially the police, over what to do. And the expediency which results suits the terrorists well. Henceforth the authorities are shown to be "inconsistent" — which is treated as a synonym for "unfair".

The authorities will also have many alarmed people urging the use of counter-terrorism, draconian measures and even inhumane methods of questioning. Ethically, none of these is acceptable; and they will, thank goodness, also be unacceptable to senior authorities who understand the techniques in use by the terrorists. If men at a lower level are allowed their heads in such evil activities they rapidly discredit the authorities by "proving" the terrorists' claim that the authorities do not maintain the standards of justice for which they were elected. And the terrorists are quite likely to use churchmen to witness to what would undoubtedly be evil acts. Thus while Christian concern for the authorities' tactics must exist, it needs also to be seen that this concern is easily, and often, made use of as a weapon in the terrorists' armoury.

TREVOR B. POOLE

Human and Animal Aggression

This article is based on the paper given by Dr. Poole to the Victoria Institute in London on 19 May 1973. The author argues that what we call inhuman or bestial behaviour is not bestial at all but uniquely human, whilst man shares with animals much of what he thinks of as altruistic, such as comradeship, and even the laying down of one's life for a friend.

Evidence of the past half century has forced us, as a species, to have considerable misgivings about the long term survival of *Homo sapiens*. Many believe that man is in grave danger of extinction during the next two hundred years and few would deny that the survival of civilised man and his culture may soon be severely threatened. Two factors appear mainly to be responsible for this situation, firstly overpopulation and its attendant complications and secondly, our great potentiality for destructive aggression. These two factors, of course, are interrelated and both are associated with constant advances in man's technological knowledge over the past 100 years.

Acute awareness of man's aggressiveness has led to the increased interest of biologists in animal aggression. Whilst animals do not, so far as is known, wage genocidal wars, evolutionary principles justify us in examining related species to make comparisons between their aggressive behaviour and our own. Such an approach has, of course, proved highly successful so far as physiology is concerned and, for example, studies in the functioning of the rat's kidney have enabled us to discover how our own kidney

works and to make possible the survival of human beings from whom both kidneys have been surgically removed. Nevertheless, it would be naïve to suppose that comparisons between the behaviour of different species are as simple as physiological ones, for behaviour is plastic, highly adapted and adaptable in its relation to the animal's external environment. In addition, the human brain differs greatly from that of other species, although such differences are at a minimum in the phylogenetically ancient parts of the human brain where the control systems for aggression are located.

Clearly the study of animal aggression is justifiable purely as an academic pursuit but I believe that the human implications of such studies are of paramount importance. The roots of human aggression lie buried in our animal past and it seems reasonable to suppose that the basic architecture of human aggression resembles that of other species of mammal just as the basic architecture of, for example, the human skull resembles that of a monkey or a lemur. Knowledge of such structure can, I believe, lead to an insight into human aggression and, with understanding, a greater control over our irrational impulses.

There are many different views on aggression in man and animals and some of these are expressed in the collection of papers edited by Carthy and Ebling.¹ Before proceeding we need to have a working definition of aggression which is as unambiguous as possible and the definition which I shall adopt is that "aggression is any activity which is directed towards the discomfiture of another individual". This definition excludes the "playful aggression" of young mammals and also predatory behaviour, the latter type of behaviour being directed towards the acquisition of food.

Kinds of Aggression

Two kinds of aggression exist amongst animals, aggression between individuals of different species (*interspecific aggression*) and aggression between members of the same species (*intraspecific*

aggression). Of the two kinds, intraspecific aggression is the more relevant in the study of man so I shall consider interspecific aggression only briefly.

Interspecific aggression is exhibited in three main ways.

- (1) When a species defends itself against attack by a predator, as in the case of a moose attacking a wolf with its hooves.
- (2) In mobbing, as when prey animals such as small birds may make concerted attacks upon a predator such as an owl or buzzard.
- (3) When competition is involved; as when, for example, a pair of jackdaws attack a herring gull to rob it of its food.

The remainder of this paper will be concerned with intraspecific aggression and will be divided into two main sections. Firstly, I shall consider animal aggression and secondly, the bearing of animal aggression on some important examples of human aggression.

Animal Aggression

The majority of animals, when fighting, do not employ specialised weapons but use structures which also have other functions. Birds, for example, mostly use their beaks whilst mammals use their claws and teeth. Some animals, however, otherwise poorly endowed with natural weapons, have evolved special structures used solely in fighting: deer with their seasonally growing antlers are a good example. In spite of the formidable, indeed lethal weapons which many animals possess, fatalities are rare — in contrast to the situation among men. This is because fighting, in animals, has almost invariably become “ritualised” in such a way that no real harm comes to either of the combatants. In the elephant seal and the polecat, for example, the attacker grips the head or neck of its opponent with its elongated canine teeth. In both of these species deep wounds are inflicted by the canine teeth but because the skin of the neck is very thick, little real damage is done and the wounds heal rapidly. In the red deer which possesses weapons which could easily eviscerate an opponent, fighting is largely a pushing contest in which the two animals

interlock their antlers.

In many cases the beaten opponent takes to flight so that in nature the principle that "he who fights and runs away lives to fight another day" operates. In other cases the opponent submits to its rival by adopting a recognised "submissive posture". This posture is extremely important in social animals such as baboons and rhesus monkeys for it allows two individuals to behave aggressively without one of them subsequently being driven out of the social group. The submissive posture therefore is most important in allowing armed rivals to live together in the same group in a state of peaceful coexistence. Submissive postures are characterised by the animal's concealing its weapons and by making itself as small and inoffensive as possible: the cringing submissive behaviour of the domesticated dog and human bowing and grovelling are well-known examples.

Another method by which injurious aggression is avoided is by threat which may deter a rival from counter attack. A common form of threat in mammals is the stare which occurs in monkeys, dogs and human beings; usually it is combined with an erect stance which gives the impression that the individual is poised for an attack. In addition the action of the hormone adrenalin causes erection of the hair which also serves to make the animal appear larger and more powerful than usual. This form of threat is the normal prelude to attack so that the rival associates such behaviour with being attacked.

To avoid injurious aggression it may be advantageous for an animal to convey some indication of its probable future behaviour to its rival — will this prove aggressive or otherwise? Communication systems fulfilling this role are found in many species and are termed 'displays'; those of a visual character being the best known. In general, displays appear to be derived from common behavioural traits which are ritualised to a more spectacular form. For example, the raised crest of the jay or sandwich tern appears to be derived from the usual erection of feathers which accompanies aggression. In some species of fish the motivational state of the animal is indicated by colour patterns

which vary according to its mood.

It is perhaps worth pointing out that in threat or submission there is no necessity to assume that an animal is aware that it is emitting the signal, nor that its opponent is aware of receiving it. For communication to be established all that is necessary is that it should be shown that the signal emitted by one individual predictably modifies the behaviour of its opponent. We are not generally conscious that a person who is hostile to us stands further away and that his pupils decrease in size, yet we respond to these signals. The German ethologist Paul Leyhausen drew attention to the threatening aspects of military dress such as built up shoulders, epaulettes and peaked caps which, combined with the military stance, are calculated to have an intimidating effect. Different species of animal use different signals yet the principles which govern the signalling systems are the same; the function of this form of communication is to avoid unnecessary conflict between unequally matched rivals or serious injury as a result of fighting. Animals which were seriously injured in intraspecific fighting would readily fall prey to other species. Furthermore, the seriously injured winner of one fight would soon fall victim to another rival of his own species should one chance to come along.

There are of course exceptions to the general rule that fighting is not injurious. For example, Schaller² has shown that male lions may mortally wound their rivals whilst Verheyen³ showed that fatalities were common amongst hippopotami in the Upper Semliki river under overcrowded conditions. Such examples, however, are extremely uncommon.

It is axiomatic that in aggressive encounters between individuals two factors are of paramount importance; firstly that they should have the ability to recognise other animals of their own species as individuals and secondly that the rivals should retain some memory of their fight and its outcome. In fact, a very wide range of animals can distinguish familiar from alien individuals and, in general, aggression is greater towards aliens. Hostility towards aliens is also recognisable in man where, as in many other social species, members of a social group behave with hostility

towards non-members. The ease with which a non-member may join a social group varies greatly in different species; in wolves, for example, it is very difficult for a stranger to join the pack whilst at the other extreme olive baboons or vervet monkeys in a forest habitat are tolerant of entry by strange males into a group, provided that appropriate amicable and submissive behaviour is made by the newcomer. For human beings to join a group, rituals range from smiling and handshaking to complex initiation ceremonies. Such rituals share in common the fact that the new group member behaves in an unaggressive or even submissive manner.

Territory and Status

Aggressive behaviour in animals occurs most frequently in two contexts, namely territory and status. A territory is an area which is defended against identical species and the phenomenon of territoriality is found in the animal kingdom in a wide variety of animals ranging from invertebrates such as the fiddler crab to higher primates such as the gibbon and man himself. Birds such as the robin defend a territorial area and advertise their presence by song; thus the robin's song is equivalent to "trespassers will be prosecuted". Gibbons, it has been found, spend 6% of their time in border disputes with their neighbours. The possession of a territory gives the animal confidence within its territory and it has been found in the jewel fish that, for a territory occupier to be beaten in its territory, the opponent needed to be three times its size.

Territories vary greatly in size; in some cases, for example, in herring gull colonies, they include only the area in the immediate vicinity of the nest, whilst in other species, such as the gibbon, the territory represents both a breeding and foraging area. As Wynne Edwards⁴ realised, territorial behaviour not only results in the spacing out of animals but it also affects population size. Animals of many species which fail to obtain and defend a territory also fail to breed, for example the red grouse; for such species territorial behaviour represents a population-regulating mechanism.

In species with large territories such as the gibbon, for example, the animal advertises its presence both by vocal means and by patrolling its boundary, thus actively seeking aggressive encounters with territorial neighbours. It must be stressed however that because the animal's confidence rapidly decreases once it has crossed a territorial boundary, border disputes mostly consist of threat, and physical assault is very uncommon.

A second context in which aggression occurs is that of status. Many social species have a peck order or rank order. This was first observed by Schelderup Ebbe in the domesticated fowl where he observed that hen A pecks B but B does not peck A. Hen B however pecks C whilst A pecks both B and C. Such one way aggressive interrelations form what is known as a "linear peck order" and similar peck orders, or rank orders, have been observed to occur in a wide variety of animals both in captivity and in the wild; for example, Lorenz⁵ has described a peck order in jackdaws, and Hall and de Vore⁶ described one in the savannah baboon. In the case of primates, rank order is frequently not a simple linear one but is complicated by the fact that different groups of individuals such as juveniles, females, adult males, etc. have characteristically different ranks. Rank order is further influenced by the stage of the female's reproductive cycle, receptive females and those with infants ranking higher than other females. In addition, the situation is complicated by alliances which may give a group of friends a higher rank than any one of them could occupy on its own. Rank in primates may even be associated with physical characteristics; the silver fur on the back of the older male chimpanzee is characteristic of the high rank which it occupies; the adult male baboon has a large mane, whilst in man, as in the chimpanzee, the hair of older individuals turns white. In these days of the cult of youth, of course, the possession of grey hair may come to be counter-productive in terms of status.

Individual aggressiveness varies greatly and each aggressive encounter, like most social interactions, is unique, so that a special relationship is formed between individuals in the social group. Status and territory result from aggressive behaviour so that it is probably more accurate to state that aggression leads to territory.

formation or status than to say that an animal has a hierarchical or territorial instinct and that, therefore, it defends its territory.

Some authors such as Ardrey⁷ have claimed that man has a territorial imperative or territorial instinct but this is a drastic over-simplification of the true situation. Kalahari bushmen, for example, are not territorial and appear to lack any form of status system which parallels the biological one. However, it is apparent that human beings do have different status: for example, the mediæval ranks of Duke, Earl, Marquis, Baron, etc., represented a linear rank order and in mediæval society the individuals with the highest mortality (as in animals) were those lowest in the rank order (the landless peasants). Individuals with high rank also acquired large territories (the landed gentry) so that, in mediæval times, territory and status were interlinked. It seems clear that, in man, territorial or hierarchical behaviour is highly dependent upon the ecology of the nation or tribe. As with other higher primates, our social structure is dependent upon environmental conditions. In mobile groups such as baboons, high ranking individuals do not have a fixed territory but carry a 'portable territory' with them termed a social space — this is a space around an animal which other individuals avoid entering. Higher ranking individuals occupy a larger social space and thus the phenomenon occurs also in man where social space can readily be observed in, for example, the way in which people sit in the corners of a railway carriage or at the ends of a park bench as far away from one another as possible. The large executive office seems to emphasise the social space of the highest ranking member of an organisation. A parallel phenomenon was observed in macaques at the London Zoo by Chance⁸ who found that the highest ranking male had a rock ledge to himself and that other individuals did not trespass on this area without making submissive gestures. Rank may be expressed in humans by clothing, posture, social space and behaviour as Argyle⁹ has observed.

Comradeship

In spite of aggressive tendencies, animal societies generally

run smoothly and this is because certain unwritten rules operate which limit conflict. In most animal societies rape, murder and the attacking of juveniles are generally extremely rare and an individual transgressing in this way may be driven out of the group by a social superior. It is generally the accepted role of the individual to protect the young and to respect individuals both of much higher or much lower rank, challenges only being issued to individuals of similar status. In non-literate human societies similar rules apply and it is apparent that the ten commandments embody some of these unwritten laws which also operate in animal society. It is interesting that the sixth commandment reflects the animal situation in that hostility towards familiar individuals is controlled whilst that towards aliens is not; the commandment forbids murder but not the killing of individuals of alien groups.

Comradeship plays an important role in the aggression of some species. In savannah baboons, for example, both inter-group aggression which takes the form of threat towards alien groups and aggression directed against predators, involve a high degree of group loyalty. No individual alone can effectively threaten or injure a leopard but a concerted group threat or attack is effective. These baboons therefore, for their survival, rely on strong group loyalty which might be equated in human terms with identification with a group or 'patriotism'. Comradeship seems to be cemented by various behavioural activities such as grooming, mutual feeding or playing in animals; and smiling, handshaking, hugging and kissing in humans. Group cohesion is a necessary pre-requisite to any form of human warfare and it doubtless has its origins in our animal past. Some people in New Guinea only use the term 'man' for their own tribe; other humans are simply regarded as animals and hunted and treated like game. Such xenophobia appears to have its origins in our biological heritage.

Environment, Hormones and Frustration

So far the behaviour of animals and man has been discussed as though it were constant in form irrespective of the environmental situation. This is an oversimplification: some factors are well

known to influence animals' aggressive behaviour. A few of these factors can briefly be examined. That overcrowding leads to greater aggressiveness has been shown by making comparisons with zoo colonies of primates and their wild counterparts. Kummer¹⁰ found that Hamadryas baboons showed $17\frac{1}{2}$ times more aggression in a zoo colony as compared with wild baboons. Virgo and Waterhouse¹¹ observed that, by reducing the number of monkeys in an enclosure to half, the number of fights was reduced by 75%. Not only is the amount of aggression density — dependent in this way but the type of social structure is also determined. Reynolds and Luscombe¹² found that in most zoo colonies of chimpanzees the dominant male was a tyrant which attacked all other members of the group; by contrast in the wild and under spacious conditions in captivity the leader was an amiable individual which showed a greater number of amicable social contacts than any of its fellows.

Ecology also may affect aggression; olive baboons living in the rich forest areas are less aggressive than their counterparts living on the poorer savannahs. Carpenter¹³ found that the amount of aggression shown by a group may also be greatly influenced by the 'character' of the dominant male. He found that when Rhesus monkeys were released on the island of Cayo Santiago, one individual which he appropriately named 'Diablo' led his band of monkeys into fights with other groups so that there was constant warfare and injurious fighting. The removal of this individual resulted in peace but as soon as he was reinstated in his group inter-group aggression commenced once more. The sex and maturity of an individual influence its aggressiveness. Mature males of most species are more aggressive than females and juveniles, and in many animals this is the result of a hormonal factor. Changes in hormonal balance may influence aggressiveness so that many animals are seasonally aggressive.

Many conflicting views are expressed on the causation of aggression in man and animals. Some psychologists have taken the view that aggression results from frustration and in certain situations this is undoubtedly true. From this it is argued that if an individual is not frustrated, he will not become aggressive,

a view which leads to the belief that aggression is purely pathological behaviour. This opinion however is at variance with the context of aggression as it is observed in nature. Many animals such as deer have developed special weapons for intraspecific fighting and it seems unlikely that the manifold anatomical adaptations related to aggressive behaviour in animals would have arisen simply because of frustration.

Is Aggression Learned ?

A second view put forward by the American biologist J. P. Scott¹⁴ is that aggression is learned. Male mice kept in groups of litter-mates do not show aggression but only do so if exposed to aliens. Scott interprets this fact by arguing that attacks by the aliens cause pain, which, in turn, makes the native mouse aggressive. Scott pinched the tails of unaggressive mice and found that they became aggressive when subjected to this treatment.

The situation, however, is not as simple as this, for it has been discovered (Poole and Morgan, in the press) that, if an alien male mouse is introduced into a colony of amicable male mice for 10 minutes per day, the amicable mice gradually become more aggressive. This aggression is not a response to aggression on the part of the alien, which is very nervous and submissive and avoids the colony members. It seems therefore that the stimulus of an alien mouse repeated at intervals induces male mice to become aggressive.

Aggressive Instinct

Lorenz¹⁵ and Storr¹⁶ take the view that aggression is an instinctive force which builds up and needs an outlet. This idea of a build up of 'psychic energy' is an attractive one as it seems to explain why, for example, a gibbon makes regular patrols of its territory 'looking for a fight'. Lorenz and Storr both argue that aggressive energy may be channelled into other types of behaviour, but if this is true it is difficult to know how aggressive

motivation can be assessed.

An attractive version of this hypothesis, put forward by Lorenz, is that aggressive drive might be channelled into play; the drawback so far as this hypothesis is concerned is, however, that animals always abandon play if a situation arises which elicits 'serious' behaviour. Even Francis Drake's finishing his game of bowls comes as a surprise to us and there seems little evidence to support the belief that the societies which are most successful in sport are also the least aggressive. Storr carries this idea of aggression being channelled into other types of behaviour so far that ultimately he equates the term 'aggression' with almost any form of spontaneous activity.

Such views appear to be dangerous for they seem to justify aggression and make it valuable if only it can be directed into the right channels; also they tend to lead to the attitude that it is harmful to frustrate aggression and better for an individual to "get it out of its system". The facility which existed for concentration camp commandants to do just this during the last war did not seem to reduce their aggressive drive noticeably nor make them better people. This issue cannot be treated adequately in a short paper but a fuller critique of these views has been made by Hinde¹⁷ who argues cogently against energy models of motivation such as those of Lorenz and McDougal.¹⁸

Aggression is a normal part of the behavioural repertoire of many species of animal but it does not necessarily develop unless suitable stimuli are present in the environment. There seems to be no need to postulate either that aggression results from a build up of psychological energy or from environmental conditions in which the animal is either frustrated or subjected to painful stimuli. Aggression is behaviour which, given particular environmental circumstances, may be beneficial to the individual and promote its survival and reproductive success.

Uniqueness Factors in Human Aggression

It is clear that whatever the causation, we now have some knowledge as to the major biological factors which influence aggression; factors such as confinement, over-crowding, unfamiliarity with the opponent, phase of the reproductive cycle and the presence of a particular opponent. Furthermore, it is apparent that unless animals are beaten in a fight, they do not find aggression aversive but may actively seek it.

This review of aggressive behaviour has shown that many of the factors which influence animal aggression also affect human aggression similarly so that there can be no doubt that a common substructure exists. I shall now consider those aspects of human aggression which appear to me to be unique to our own species.

Two forms of aggression are unique to man and these are organised warfare and cruelty to members of the same species. Animals, as we have seen, do not kill members of their own species and they have unwritten rules in their society which enable them to live at peace. Man, however, is the most aggressive creature in existence. Some authors such as Lorenz have suggested that man's aggression is related to his natural weapons, fisticuffs, rather than those lethal weapons which he has invented which range from simple flint axes to intercontinental ballistic missiles. Even with naturally occurring weapons such as sticks and stones, however, a man can kill and inflict cruelty on his fellow men.

Christian ideals represent the highest and all that is best in human behaviour and many Christians have lived lives in keeping with these precepts. Unfortunately organised Christianity has frequently been guilty of behaviour no better than its secular or religious rivals. It is easy to find examples of human aggressive behaviour from most cultures and the majority of religious traditions but because the Victoria Institute is committed to relating scientific knowledge to Christianity it would seem more honest to select examples of human aggression from Christian societies. This is not to say that Christian societies are worse than other societies although it might be argued that Christians have fewer

excuses because of the higher set of ideals before them. My main point is to make a plea for greater self knowledge because organized Christianity has not distinguished itself in its ability to avoid the pitfalls of warfare and cruelty into which mankind, in general, has fallen (the present situation in Northern Ireland clearly illustrates this point).

I shall give examples of war and cruelty perpetrated by Christian societies because they give specific illustrations of human aggressive behaviour.

In the thirteenth century when the Albigensian sect had established itself in the South of France, Pope Innocent III organised a crusade against its members, with a view to complete extermination. He proclaimed it a virtue to massacre as many heretics as possible and those who fought in this holy war were to receive complete indulgence for all their sins and the salvation of their souls if they fell fighting. It was counted an additional virtue to massacre as many heretics as they could and to maltreat and torture them, to which was added the right to make off with their goods, destroy their homes and take possession of their lands. It provided an ideal opportunity to make sure of saving one's soul whilst going on a crusade which involved little hardship or inconvenience and only 40 days enlistment period. The army consisted of 50,000 men but had a host of followers armed with scythes and clubs with which to murder women and children. Over 500 towns and castles were captured or destroyed and the Papal Legate who accompanied the army advised those who were inclined to spare the Catholics, "Slay them all, the Lord will recognise his own."

Taking an example from nearer our own time, when Spain was torn by civil war in 1936, two ideologies fought one another and both committed appalling atrocities. Hugh Thomas¹⁹ describes how the Christian Nationalists shot their socialist opponents. In the presence of their wives and children they shaved the women's heads, and daubed their foreheads mockingly with some working class sign. Frequently wives who witnessed their husband's execution were then raped by their executioners. All that the Church insisted

upon was that those killed should have opportunity for confession. The Venerable Brother at Majorca stated with satisfaction that “only 10% of these dear children refused the sacraments before being dispatched by our good officers”.

One particularly zealous priest at Zafra caused four militiamen and a wounded girl to dig their own graves and then had them buried alive in them. It is only fair to point out that a few churchmen protested but at the risk of their livings and a measure of persecution.

These examples are from the Roman Catholic tradition but Protestants have also behaved in a similar manner. In the 17th century the Anglican Church not only persecuted Puritans and Quakers but also killed Roman Catholic priests by hanging them. In 18th century Northern Ireland, Presbyterian gangs raided houses and terrorised the Roman Catholic population. Nearer to the present day both the Boer War and the 1914–1918 war waged between Christian states were sanctioned by the Anglican Church in Britain.

Milgram's Experiments

The experiments of S. Milgram²⁰ showed that even in peace time America, ordinary people can, under authority, inflict cruelty upon their fellow men — in Milgram's experiment his subjects were asked to assist in a “learning experiment” to investigate the effect of punishment on learning. The subjects were instructed to punish the so-called ‘learners’ (who were actually in league with the experimenter) when they made mistakes; punishment consisted of administering electric shocks of varied intensity (30–450 volts). The apparatus did not actually deliver shocks to the “learners”, but this was not known by the subjects, and the learners had been instructed to behave as if they really had received the shock. Milgram found that his subjects would administer supposedly lethal shocks to the ‘learners’ in spite of their protests and entreaties. He concludes, “with numbing regularity we saw good people submit to the demands of authority

and commit actions that were without feeling and cruel . . . When as in this study an anonymous experimenter could successfully order adults to force a 50 year old man into submission and administer painful electric shocks to him in spite of his protests, then we can only be apprehensive about what a government — with much more authority — could order its subjects to do”.

Milgram's experiments show that ordinary men will commit atrocities in the name of scientific investigation, thus demonstrating the truth of Derek Freeman's²¹ remark that “human aggression is never more terrifying than when at the service of the dogmatic and delusory ideologies characteristic of *Homo sapiens*”, and the comment by Durbin and Bowlby²² that “men will die like flies for theories and exterminate one another with every instrument of destruction for abstractions”.

Explanation — ?

I hope that I have now made it clear that what we term bestial or inhuman behaviour is in fact purely and characteristically human, whilst much of what we think of as altruistic, such as comradeship and laying down one's life for a friend, we share with animals. Thus we cannot blame our unparalleled aggressiveness on our animal ancestry; it forms a particularly human attribute. It is tempting to speculate whether any explanation of our present state can be suggested. My own hypothesis, based upon what is known of the recent evolutionary history of civilised man, runs along the following lines.

Homo sapiens evolved from a group of social primates from which we inherited a strong sense of group loyalty together with a feeling of hostility towards strangers. The invention of weapons capable of killing prey made it easy to kill other men, but at the hunter-gatherer level of society there was little or no incentive to kill other people. Once, however, pastoral or agricultural ways of life had developed, neighbouring tribes had possessions in the form of domesticated stock or grain which were objects of value

and it therefore became worthwhile at this stage in our evolution to kill off members of a neighbouring tribe in order to steal their lands and possessions. Plato and Rousseau both suggested that it was the spoils of war which made it profitable.

This view can readily find support by reference to biblical sources; the Lord said to Joshua, "see I have given into thy hand the land of Ai and her King thou shalt do unto Ai and her King what thou didst unto Jericho and her King (i.e. kill every man, woman and child). Only the spoils thereof and the cattle thereof shalt thou take as prey unto yourselves." (Joshua 8: 1-2).

Unfortunately extermination seems to be sound on rational grounds. Tribes which slaughtered every man, woman and child were unlikely to suffer retribution from their victims, thus, other things being equal, the most heavily armed, well organised and ruthless peoples were the most likely to survive. If these aggressive tendencies were inherited then natural selection would favour the survival of xenophobia and genocidal tendencies, because societies showing them would tend to be materially more successful. Even if there were no hereditary aggressive factors involved, cultural tradition would encourage warrior-like 'virtues' so that the end product would be much the same. The result, whether by natural selection or tradition, would be that the children of the unscrupulous, warlike and cruel would walk the earth as its inheritors whilst the amicable and peaceable lie in their graves these many thousand years.

The final tragedy is that followers of Jesus Christ, who said that "the meek shall inherit the earth" and tried to teach mankind that "those who live by the sword shall perish by the sword", have also resorted to the violence and cruelty which He condemned, this time justifying it in His name.

If my hypothesis is correct, civilised man represents the survivors of a selection pressure not only reinforcing group loyalty and hostility to aliens but also favouring ruthlessness and cruelty. This may explain our readiness to take up arms against aliens.

At present biologists and psychologists are not in a position to solve our problems of aggression and we can offer no instant panacea ; what our studies have taught us, however, is that certain biological factors influence aggressive behaviour and that these are common to both man and other species of animal. Recognising these factors should help us to find methods of mitigating them.

Warfare therefore seems to be caused by man's inherited aggressiveness which is aroused under certain sets of conditions ; inadequate communication between groups, our strong sense of loyalty to our friends, overcrowding, hostility towards unfamiliar individuals and possibly also an appetite for aggression which makes us a potentially highly aggressive species. Our rational nature which gives us the ability to plan ahead, forge weapons, assess the profitability of the spoils of war and our acceptance of diverse ideologies have made war an unique characteristic of our species.

There seems, however, to be little evidence that aggression in man is unmodifiable and instinctive ; it seems capable of some environmental manipulation if the biological substructure is understood, nor do we need to be aggressive in the same way that we need to eat or drink. It is clear that more research needs to be carried out on the factors which influence both human and animal aggression and if more is understood, perhaps we can hope, not to change human nature, but to create environmental conditions in which aggression is less likely to arise.

In conclusion, ethology has thrown valuable light on the animal origins of human aggression and helps us to understand some of the factors responsible for eliciting aggression. This does not imply, however, that man is merely an animal, for each species has its unique behavioural attributes. We must study man as a species using both ethological, psychological, anthropological and sociological methods ; ethology is particularly relevant, however, in that it reveals something of the substructure of our aggressive behaviour and increases our understanding of its motivation.

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E. K. VICTOR PEARCE

The Flood and Archæology

Victor Pearce, whose book *Who was Adam?* (Paternoster 1970) will be known to many readers turns to consider the Flood. In this interesting article he shows how the biblical Flood offers a ready explanation of a wide range of archæological findings.

The physical evidence for the biblical Flood in the Near East has been based largely upon the existence, in archæological levels, of strata of clay presumed to be water laid. However, some confusion has been caused by the discovery that there are two such layers in Mesopotamia. Dated by the carbon-14 method, but without correction, these are found at horizons corresponding to 2700 BC and 4000 BC respectively.

It has long been suspected that the C-14 dating needed correction for the older dates and over the past few years this has been done by means of tree rings in the Bristlecone-pine found upon the White Mountains of California. Some of the trees are 4,000 years old and by matching with dead trees, older tree rings go back at least 5300 BC. Professor Suess published his calendar of dates gleaned from them in 1970. This demonstrates that the ratio between C-12 and C-14 differed from its present value in living material before 1000 BC (a point which some of us have maintained for over ten years).

Calibration of radio-carbon dates is matched and corrected in the tree-rings themselves, which can be counted for a date and the C-14 in the same rings measured. This method shows that a radio-carbon date of say 5000 BP (before present) is actually

5800 BP. It has become customary to write a carbon - 14 date as b.c. and to write a date corrected by Bristlecone-pine as BC. * The dates of the clay strata are, then, c. 2700 b.c. or 3500 BC and c. 4000 b.c. or 4800 BC respectively, but how are we to decide which stratum marks the Flood of Noah ?

The criterion suggested by a reading of Genesis is that the Flood occurred between the copper-stone age and the bronze age. If we follow this guide it will serve to unravel many an archæological puzzle. The new Bristlecone-pine dating also adds clarification.

The two ages we have mentioned are accompanied by two separate city-building eras. One comes before the Flood (Gen. 4 : 17) and starts on the high mountain plateaux of Eastern Turkey and Iran ; the other is in the low alluvial plain of Mesopotamia (Gen. chs. 10 and 11). We know that Neolithic and copper-stone ages apply to the era before the Flood from the note in Genesis 4 : 22. Archæology harmonises by finding a cultural hiatus between these eras. This hiatus between copper-stone age and Bronze Age has been widened significantly by the Bristlecone-pine dating. The correct methodology, therefore, is to correlate the Bible and archæology on the basis of culture. The temptation to correlate on the basis of dating should be avoided because on the one hand archæological dates are open to correction, and on the other the genealogical tables of the Bible do not give unbroken succession. Even the existence or non-existence of a clay stratum is secondary as inundations are not uncommon in Mesopotamia, and in many places rushing flood waters erode rather than deposit.

If we have to choose a clay stratum, however, culture alignment would guide us to choose the flood stratum dated at 4800 BC because it is after this that the Bronze-Age city states of archæology are founded. This new burst of building activity

* The effect of Bristlecone-pine Calibration upon Near Eastern sites is not so clear, as original dating was by archæological stratigraphy.

using new techniques in the founding of city states is accurately described in the eleventh chapter of Genesis and is placed as coming after the Flood of Noah.

With the passing of years the survivors of the Flood made their way along the Iranian mountain plateau south-eastwards. Some of them descended into the Indus valley towards the East, where their culture has been excavated; others descended westwards into the Mesopotamian valley. Here they are called *Ubaidians*, from their type site at al'Ubaid. In the totally different environment of Mesopotamia they were forced to use new materials for the buildings and crafts. In the mountains they had used stone; now they had to make their own artificial stone — in other words they had to bake bricks. In the mountains they mined copper for nails. Now they had to devise some other artifact to hold down their house roofs, so they baked fat clay nails slightly hooked to hold down the reeds with which they thatched their houses.

When in the mountains they had flint or obsidian for sickles. Now even their reaping sickles were made of baked clay. The cutting edge of these Ubaidian sickles is surprisingly sharp: one is easily tempted to doubt it and run one's finger along the edge and get a cut!

For mortar they used bitumen which was plentiful, and to enable them to walk over marshy areas they wove thick reed mats. The challenge of this inhospitable, though fertile, environment was answered by a response of technology by which they surpassed all previous development. These later phases are called *Sumerian* (from Sumer, in Genesis 11: 2 it is spelt Shinar).

Their building projects became larger and more ambitious until in each city the Sumerians built huge towers or artificial mountains called *ziggurats*. These great works of solid brickwork jointed with bitumen had facades of rebated buttresses and were terraced with trees and plants, while the summits were crowned with temples. The whole conception reflected the former mountain environment of the builders. Thus, in the archæological strata

above the early Ubaidian period there is a remarkable development of architecture on most sites. We have the well-known ziggurat at Ur excavated by Woolley,¹ and the sensational religious acropolis at level XIII at Tepe Gawra described by Spicer — which corresponds to Genesis 11: 3–4. Its plans commenced the formal architecture which later spread to Egypt, for in Egypt similar styles of buttressing were repeated in the Temple of Saqqara, and the step pyramids. The latter are the earliest type of pyramid in Egypt and owe their inspiration to the terraced ziggurats. The most remarkable erection was at Babel, or Babylon: its mysterious destruction is thus described by Seton Lloyd²:

The heat had been so great that in many cases the brickwork had actually melted and survived in the form of huge vitrified lumps. This, in fact, is a phenomenon which one has seen before, in Iraq, on the summit of the ziggurat at Birs Nimrod (Borsippa) which is traditionally considered to be the ruins of the Biblical Tower of Babel. But there, one is compelled to assume that the 'tower' must have been repeatedly struck by lightning in some tremendous electric storm. For the solid brickwork has vitrified like glass, and great masses as big as ice-bergs are split off and tumbled at all angles.

Cities and population explosion usually indicate a flourishing economy. At Arpachiya we get an insight into the advanced agriculture which had developed into field cultivation to feed the swelling numbers.

Below the ziggurat at Uruk (Erech of Gen. 10: 10) we have a stratified record of earlier and smaller temples (before it), including the famous White Temple, bringing us to the first days of the migrant Ubaidian settlers after the Flood. Filby is thus quite right in identifying the Flood stratum as being almost on the alluvial valley floor. In Woolley's excavations at Ur, the supposed virgin soil which he struck at the bottom of his shaft must be the Flood stratum, as the Ubaidian pisé huts were above it. The bank of clay higher up is now thought to be of æolian origin. The stratum of mud upon which the Ubaidians had settled, was formed of decayed vegetable matter which appears to be water-laid. In it, potsherds were all lying horizontally as if

swept there by a flood from some neighbouring site. The pottery at this level (known as *Hassuna-Halaf* or *Chalcolithic*) is mostly cream-coloured on which red geometric patterns with stylised bulls' horns are painted (*bucrania motif*). Below this, "three feet below modern sea level, there was stiff green clay pierced by sinuous brown stains which had been the roots of reeds; here all traces of human activity ceased and we were at the bottom of Mesopotamia", wrote Woolley.

This, then, was the deposit of the earlier flood which had swept pots and sherds from a neighbouring site. The flood had withdrawn, and an adjustment of sea level taken place perhaps due to a rise in the level of the land. Then after enough time had elapsed for the new dispersion to make its way along the mountains of Iran from Ararat, the mud had hardened but the area was still marshy according to Sumerian testimony, so that reed mattresses had to be woven and stamped down to make a building raft upon which the reed and clay pisé huts could be erected. Even the Ubaidian boats had to be made of reeds. They were bound together into elegant shapes to set the new style of boat, which was eventually to reach Egypt, with the commencement of the new post-Flood *Gerzian* culture. The making of reed boats was to continue for many centuries. Even the baby Moses was later laid in a small reed boat to be hidden from the assassins.

The Flood stratum of 4000 b.c. was discovered by Professor Mallowan at Ninevah who dug a shaft 100 feet deep.³ Mallowan numbered his stratigraphy from the bottom upwards as geologists and anthropologists do. This has the advantage of numbering the oldest and first to be laid, as "I". The same method was followed by Seton Lloyd at Hassuna. Other archæologists have numbered from the top down which is a little confusing.

Ninevah I then, commences at the Neolithic of 6000 b.c. (which classes as Pre-Pottery Neolithic B. in its lower reaches). There are saddle querns for grinding flour, and flint sickles, and — a feature of this area — the shallow pottery husking trays containing multiple divisions to be shaken rather like a sieve to free the husks from the grain. The pottery is plain and

unburnished. This gives place to Ninevah II with red or black monochrome pots. Flinting becomes poorer as the culture is shading off to chalcolithic or copper-stone, which is the culture before the Flood.

At a depth of 60 feet come the Flood strata of thirteen bands, alternating mud and riverine sand, in which a copper pin was found, and then at 51 feet a layer of black mud and pebbles. The excavators describe this as, "the accumulation of a well-defined pluvial period indicating an important climatic change".

Above this occurs Ninevah III and a late arrival of Ubaidian culture, followed by Jemdet Nasr proto-literate at 27 feet. The pottery styles are now entirely different in form. The teapot shapes and spouts are much more elaborate but the colours are dull, and unconnected with the Hassuna-Halaf type. We are in the early Bronze Age. This position in cultural succession is more important than the evidence of the Flood strata for it marks a cultural hiatus. The early Bronze Age is above the "pluvial interval" and the copper-stone artifacts are below it. This copper-stone age is also represented at Sialk in Iran, Hacilar and Catal Huyuk in Turkey, and Fayum and Merinde in Egypt.

After the Flood, Mesopotamia would be hardly above river and sea level, and for many centuries was liable to flooding, sometimes on a large scale.

This disappearance of the Chalcolithic red on cream pottery is a common feature of the other North-Mesopotamian sites — Arpachiya, Gawra, Samarra, and Hassuna. The dull Ubaidian pottery above this cultural hiatus is unconnected with the Chalcolithic pottery below. In archæologists' notes the phrase keeps appearing; "Pottery entirely different"; "Break in pottery succession and culture". New elements appear such as painted egg-shell ware and the peculiar lentoid tortoise-shaped vase which is diagnostic on all these sites of the early bronze Ubaidian period with its baked clay sickles and milking vessels.

To account for the disappearance of the Chalcolithic culture

the theory of some archæologists is that it was wiped out by the Ubaidians. In view of the collective evidence, it would seem more likely that it was the Flood which obliterated it, so that the Ubaidians occupied a vacant land. Such evidence correlates with sites in Turkey, the Balkans, the Aegean and in Europe, where archæology confirms a hiatus of over a millenium between copper-stone and bronze. This harmonises with Genesis which places the Flood between these two eras.

In South Mesopotamia where the migrants first descended to the mud flats of Sumer, most of the cities were post-Flood in date, except Eridu which is mentioned in the Babylonian epic as existing before the Flood. It is significant, then, that at Eridu there is again a break in culture below the Ubaidian. The Ubaidian phase at Eridu displays the same diagnostic artifacts as in North Mesopotamia such as painted egg-shell pottery, lentoid tortoise vases, etc. Below it was a Chalcolithic culture unconnected with that above. It was featured by what Seton Lloyd calls Eridu ware which is quite unlike any other.

After the Flood, according to Genesis 11, it was here in South Mesopotamia that the Ubaidian settlements of pisé huts were first followed by the founding of post-Flood cities and their temples. This is confirmed by the succession at the various sites of the early Bronze-Age city states. These include Al Ubaid, Ur, Uruk, Uqair, and Eridu. The first four are founded upon what has been regarded as virgin soil but which is more likely to mark the Flood, because above it is the typical Ubaidian Bronze Age culture with its painted egg-shell pottery, lentoid tortoise vases, and clay sickles. It will be remembered that at Eridu, the site with strata older than the Ubaidians, there is a different culture beneath this break, (levels VIII to XVIII), that immediately before the break (VIII) being chalcolithic.

A list of cities is given on the Sumerian tablet accounts of the happenings before and after the Flood. Genesis 10: 11 tells us that it was from these newly established cities in the south, that migrants went north to re-establish ancient Ninevah and other cities.

A similar picture is seen in Egyptian archæology, except that the early Bronze Age Gerzian culture has a time lag of about 200 years relative to the post-Flood eras in Mesopotamia. This is a reasonable time to allow for migration to reach Egypt.

In the stone-copper age before the Flood, we see that the first cities must have been Neolithic according to Gen. 4: 17 and 22, because the use of copper came in later through the ingenuity of Tubal-cain. Iron also first began to be used in the sixth millenium BC. This has been confirmed, but until the discovery of reducing techniques, hæmatite and meteoric iron proved too tough to work easily and so fell out of use to await the Iron Age of the Hittites, 1500 BC.

We have seen that the culture which followed the copper-stone age was the Ubaidian. But what is the evidence that this culture was of early-bronze character? As it had descended into a topography so devoid of minerals that even the sickles had to be of clay, this might not be immediately apparent, yet surprisingly the evidence appears. Evidence comes from the unearthing of nozzles and leather bellows for inducing draught, crucibles, open moulds and then closed moulds. The clay nozzles made for bellows introduce a new feature into pottery, for teapot-shaped spouts like the nozzles appear on pots from the Ubaidian onwards.

Analysis of tools by Tylecote⁴ and by Coghlan⁵ shows that tools were first hardened by arsenic and antimony, but the temperature required for melting copper containing these elements was 1083°C. Even malachite copper ore which was often used, requires 800°C. Induced draught by leather bellows with baked clay nozzles helped to raise fire temperatures. The Ubaidians discovered that by alloying copper with lead the melting-point occurred at a lower temperature. This, however, softened the metal and later the alloy tin was found not only to reduce the temperature required but also produced bronze which was harder.

Another line of analysis which reveals the chronology of Mesopotamian metallurgy is that at first copper oxide ore was

mined as this was near the earth's surface. Later azurite, malachite, and chalcopyrite were used. Dr. Pickard says, "Absence of sulphur in pre-historic copper proves that it was smelted from native metal or from ores thoroughly oxidised and therefore free from sulphides". Prof. Desch says, "Early Mesopotamian objects are usually free from sulphur . . . in favour of oxidised outcrop ores, such as malachite — but early dynastic and Akkadian contain 1·0% sulphur". By protoliterate and early dynastic times, soon after the early Ubaidians, sulphur ores were being used. This reveals that mines were penetrating deeper into the hills where the copper was present as sulphide.

Sulphur ores are more difficult to reduce, and need preliminary firing and hammering to separate the slag. Consequently hammer stones found in association with smelting adds to the evidence.

Thus the development of metallurgy from the Ubaidian onwards has the following succession: Arsenic copper, lead alloyed copper, oxide bronze, sulphur bronze with 6% to 10% tin by the end of the early dynastic period when the techniques of riveting and soldering had also been mastered.

This succession of alloys and techniques was diffused from Mesopotamia to Europe with a time lag of many hundreds of years between each isochrone of development; it proves a useful addition to the identification of tools by their shape.

Early Ubaidian pictograms also bring evidence. They show played blades which must therefore have been cast, and indeed these tools and weapons have been unearthed — hoes, pickaxes, bident flesh-hooks, spearheads, daggers with convex hilts. The extraordinary thing is that from the first the pickaxes, etc., are cast with holes for handles. Two leaved moulds soon developed into three leaved moulds.

The clever method of casting works of art by the *cire perdue* or lost wax method was quickly invented. First the figure is carved in beeswax, then clay is pressed around it, then when the clay is baked the wax melts and runs away to leave a mould ready

to fill with molten metal.

The contribution to civilization is seen in that all these types and patterns make their way through to Europe, Egypt, and the East.

The early experiments of the bronze age were made before the Ubaidians descended from the Iranian heights. At Al Ubaid in the Mesopotamian valley they made baked clay copies of copper tools which included the shaft holes and expanded blades, thus showing their earlier contacts in Iran. In Mesopotamia, and up into the plateau heights of Armenia and the Caucasus, the hiatus between Chalcolithic and bronze age is shorter in terms of time because they were nearer the new point of dispersion. The gap widens as one goes through Europe.

Thus we have a perfect correlation with archæology: the Stone-copper age, followed by the stalemate in metallurgical techniques which has mystified archæologists, but which the Bible explains by the Flood, and after it the bronze age and city states of Mesopotamia. The bronze age with its invention of writing and literacy is usually regarded as the beginning of civilisation, and it spread within 200 years to Egypt and the Indus valley of West Pakistan and beyond. This correlates with Genesis 10: 13, 14, and 26 – 30.

One of the exciting facts laid bare by the new Bristlecone-pine dating is that the hiatus between the two ages is made perfectly obvious. It has widened the gap, especially throughout the Mediterranean, and has revealed that it took some time after the Flood to re-populate Europe from the post-Flood refuge centre in Near Eastern Europe.

It has been a puzzle to European archæologists why there should have been so long a hiatus between the copper and bronze ages. Having discovered copper, it seemed strange that the techniques were not developed. Upon this mystery Renfrew comments: -

Although copper was first used in the Near East, before 6,000 BC it was almost 3,000 years before it was put to any really useful service, and only with alloy bronze did really effective tools and weapons come into general use. (p. 169).

There is an early appearance of small copper objects in the Near East well before 6,000 BC. There is some evidence from Catal Huyuk that smelting was already practised at this time, and one might well have expected a fairly rapid development in metallurgy in the succeeding centuries . . . but there is no apparent development for nearly two millenia. The precise reasons for this are not yet clear.⁶

Renfrew speaks of the " yawning millenium " which separates copper age Vinca from the Aegean early bronze age. " Vinca was going out of use fully a millenium before the Aegean early bronze era began. A yawning millenium separates the two ".

In addition to this culture gap which we correlate with the Flood, there is actually a sterile layer throughout Europe marking the absence of life. This shows that the hiatus is not due to our lack of knowledge of intervening strata, but absence of human occupation.

The existence of this sterile layer is apt to be missed if archæologists are not looking for it. In Ghar-Dalam Cave in Malta I blandly asked the archæological department to show me the sterile layer. They immediately did so, yet it had not been mentioned in their commentary. They had, however, wisely left a column of strata in the cave for future examination.

On the Isle of Chios the very full stratigraphical record gives a similar picture. Likewise the Castillo cave in Spain which has a full record of strata reveals an absence of life at this point and so does the famous Shanidar cave in North Iraq.

On the European mainland this same hiatus appears at Professor Caskey's site at Lerna. In England at Peacock Hill, Cambridgeshire, the Flood is recorded by water laid clay after a

very short occupation by mesolithic hunter-farmers. England was cut off from the continent after the Flood. One can sometimes dredge up stone tools from the floor of the North Sea which shows that England was linked to Europe before 4,000 b.c. The usual charts given for England and Atlantic Europe show a break between the warm and wet at about 4,000 or 5,000 b.c. and the boreal at 6,000 b.c.⁷

At Knossos on the Isle of Crete, the hiatus is revealed in another way. On the top of the mound between the large copper-stone occupation and the early Minoan I bronze age palaces, the strata have been exposed to the elements during a long period of time when the mound remained unoccupied and was eroded. Thus there is "a gap of about eight centuries between the late neolithic and Early Minoan I bronze age". Actually, Professor Mathioulaki's revised dating shows a much longer hiatus.

In the Near East the copper-stone villages of North Mesopotamia and Turkey of the Hassuma and Halaf type end their record at the same hiatus caused by the Flood. The first civilisation of bronze age culture is re-established in Southern Mesopotamia in the Ubaidian colonisation of the marshes 3,900 BC.

R. E. D. Clark observes that the biblical statement that in the last days men will be willingly ignorant of Noah's Flood (2 Peter 3: 5) is challenging. In our own day the subject is almost totally ignored outside limited Christian circles. He draws attention to Professor R. Whitelaw's analysis of the percentage of archæological material around the time of the Flood.⁸ This shows a sharp drop which points to a possibly sudden world-wide scarcity of living — plant and animal — material at the time.

Clark also draws attention to recent examination of cores obtained from the Black Sea.⁹ The cores suddenly become black at c. 5,000 BC when decomposed vegetable matter first makes its appearance in great abundance. He suggests that the significance of this is that a vast amount of organic matter recently killed was then washed into the Black Sea.

Geology correlates with archæology. J. Prestwich, who — according to *Hastings Dictionary* — is an authority worthy of the highest esteem declares that evidence of Flood erosion is to be seen throughout North Africa and Southern Russia. The rubble drift is different from that left by the ice age erosion. We know, too, that before about 4,000 BC the Sahara Desert was fertile and filled with game, lush vegetation, and forests. Not only is there archæological record of this, we have the cave paintings in the middle of the Sahara similar to those in Southern France, depicting the hunting of a full range of animals.

In Egypt at this time the water table suddenly dropped. The Merinde chalcolithic farmers had settlements on spurs of land which are now left high and dry. With it the Amratian contemporary culture disappears and is replaced by a completely new bronze age culture known as the Gerzian, whose tools, pottery, art, buildings and boats, show that it migrated from Mesopotamia.

Unable to understand why there should be such a hiatus in Europe in the fourth millenium BC, Renfrew hopes to find strata in Europe and the Mediterranean which will show a local development of technology between copper-stone and bronze ages. On the basis of cultural evolution he thinks that such a metallurgical development could take the same course, in as many as four or five unrelated areas, and end with identical bronze age techniques.

Theodore Wertime's statement could well be a comment upon this conception. He is the acknowledged expert on the origins of metallurgy. He wrote:

One must doubt that the tangled web of discovery comprehending the art of reducing oxide and sulphide ores, the recognition of silver, lead, tin and possibly arsenic and antimony as distinctive new metallic substances, and the technique of alloying copper with tin, could have been spun even twice in human history.¹⁰

The acceptance of a Flood which was worldwide in effect, not only explains certain worldwide phenomena, it also solves

certain enigmas in European and Near Eastern archæology. It would therefore be more in accord with the general picture to believe that the link in European cultural succession looked for by Renfrew is not to be found in a local descent vertically, so to speak, but horizontally from the new dispersal point in the Near East. Such an interpretation gives sense to the explosion of techniques after the Flood.

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ROGER POOLEY

Beyond the two Cultures

In this paper, based on that given to the VICTORIA INSTITUTE on 18 May 1974 in London at the Symposium on "The Christian and Modern Culture", the author who is a lecturer in the Department of English Language and Literature in the University of Keele, explores the avenues by which we may break open "the hermetically sealed containers of specialisation and privilege in our diverse culture". He closes with some reflections on the discussion which ensued.

It seems a long time now since C. P. Snow and F. R. Leavis crossed swords. It was in 1959 that Snow gave his Rede Lecture, lamenting the dangerous gap between the two 'cultures' of the scientists and the literary intellectuals. In 1962 Leavis gave his Richmond Lecture, a mixture of personal vituperation and cogent criticism which aimed at nothing short of demolition of all that Snow stood for. At the time the debate was long and often acrimonious; now it raises no hackles to speak of. Is the issue still alive?

At this distance we can see that the debate has a much longer history than ten years. If we consider Matthew Arnold's Rede Lecture of 1882, *Literature and Science*, the issue is immediately crystallised in educational terms. It is part of Arnold's continued argument with T. H. Huxley, the apologist of science. Arnold parts company with Huxley as soon as he

proposes that training in science should be the main part of education for the majority of students. Similarly, we must see the conflict of Snow and Leavis as the conflict of academic specialists, one group of which wanted the main thrust of education to be in training more scientists and technologists, the other who saw the English School as the natural hub of the university. In his "The Two Cultures: A Second Look", Snow described his Rede Lecture as "Some straightforward proposals about education";¹ rather more unkindly, John Tasker asserts;

The real purpose of [Snow's] lecture was to advocate the expansion of technological specialisation and to provide a rationale for the empire-building of scientific research in the universities. To this end it was necessary actually to discredit literary studies . . .²

To be fair to Snow, the phrase 'empire-building' gives scant credit to his stated intentions of alleviating world poverty and defrosting the Cold War by shared scientific advance. But there is an uncomfortable grain of truth behind Tasker's rhetoric; Snow's solution to the problem of the literary intellectuals' opposition to the march of scientific progress was simply to have less literary education. Time is short; the pace of change, social, economic and scientific, is too fast for any but scientists — in that notorious phrase, with "the future in their bones" — to deal with. I find it difficult to escape from the sense that the only academic culture that Snow finds acceptable is that of the scientist; that the only literary culture acceptable is that acquired by the scientist in his non-professional moments. Certainly that is true of his proposals seen as applied to education, even though he praises writers like Bernard Malamud and Robert Graves, whose scientific interests I have not noticed. And of course the original attraction of Snow's thesis was partly due to his own status as a novelist.

It is that gap between his lament and his actual proposals that worries me most about Snow, but there are other points to be considered before we adopt a Leavisite approach to the educational problem.

It is Snow's contention that the only hope of the poor is technological advance. Quite mistakenly, he accuses the literary writers of the nineteenth century of blind opposition to the Industrial Revolution. It is true that the Revolution did raise standards of living of the working class but, for the first seventy years of so, you would never have guessed. And so the reactions of literary intellectuals as diverse as Blake, Wordsworth, Dickens and Mrs. Gaskell seem quite appropriate. Snow's point about the social ideas of top-rank writers in the present century is far more telling; "the romantic conception of the artist carried to its extreme", and the *engagé* work of an Orwell seems scant alongside the reactionary modernists like Pound and Yeats. Snow goes on to ask the question "How far is it possible to share the hopes of the scientific revolution, the modern difficult hopes for other human lives, and at the same time participate without qualification in the kind of literature which has just been defined?"^{1b} — i.e., modernist literature.

Leavis, however, contends that simple technological advance (and Snow is very fond of 'plain man' expressions of this) is "disastrously not enough". Here he is not anticipating the perspective on technology engendered by environmental and ecological considerations, but making a point about the nature of man, and with this we must agree. As Leavis points out, Snow uses the crass word "jam" instead of 'salvation' or 'felicity'.³ But aren't those religious words? What does Leavis mean when he wants salvation and felicity? Alas, disastrously not enough. It is a kind of æsthetic and ethical universalism, worthy and important aims in their way, but not what a Christian would recognise as true spirituality. It is interesting that Leavis' heroes in his criticism after the 'Two Cultures' debate are far more 'spiritual' in this limited sense — Blake, Yeats and Tolstoy, for example. But Leavis' tragic failure to go far enough is shown nowhere more clearly than in his essay on *The Pilgrim's Progress*, where he takes spirituality to be most happily shown in the home life, the music and books, of Christiana and her children, rather than in Christian's journey to the Heavenly City and the conflicts that that involves.⁴

The same inadequacies appear in Arnold's lecture mentioned above. We must applaud the way he goes much further than Huxley in his appreciation of what a man needs to be an educated human being — "the power of conduct, the power of intellect and knowledge, the power of beauty, and the power of social life and manners".⁵ But unless one adds something like 'the potential of knowing and serving God' it is doubtful whether these qualities will hold together. It seems that Arnold yearned after religion as a cultural fact, but was unwilling to have the concomitant of the religious fact. Leavis has regarded Arnold as his mentor, and the connection holds here as elsewhere.

A more famous inheritor of the Arnold tradition, T. S. Eliot, took the claims of religion in a more serious and appropriate manner. Nor did he, in the manner of many Christian contemporaries of Arnold's time and his own, substitute a Manichean distrust of intellect, beauty and society for a biblical enjoyment of them.

But Eliot's own work on culture and education, in *Notes towards the Definition of Culture* and *The Idea of a Christian Society* gives an analysis and a prescription which is still lacking in something. The most serious criticism one can make of it is not its scant treatment of science, but the implicitly aristocratic concept of culture which it contains. Raymond Williams, in *Culture and Society*, has pointed to the contradiction. Eliot insists, admirably, that culture is not simply a product, a few books, a work of art, a piece of music, but a whole way of life. He condemns injustice and an 'atomized' way of life; and yet he advocates the kind of economy as the background to his culture which, historically, has thrived on injustice and encouraged 'atomization', the increasingly private nature of man. It seems important to add that most Christians are still in Eliot's position, still failing to realise that an appeal for justice is a criticism of the structure of society.

One can imagine Snow, albeit a different brand of socialist from Williams, making the same criticism of Eliot but, even at the economic and political level, Snow's educational proposals

perpetuate injustice and inequality. Again the issues are clarified by the historical context. If we look back to the Taunton Report of 1868, three grades of secondary education are proposed: the first for the sons of the very rich, the professional people, and the gentry, who should pursue the classics, maths., modern languages and natural science; the second, for those intending to join the army, all but the highest branches of the professions, civil engineering, etc. and the mercantile classes; the third grade, with a syllabus of the three Rs, for farmers, tradesmen and artisans. Blatantly class-based, blatantly unjust, but nevertheless an improvement on the situation as it then was. The trouble is that we have still to free ourselves totally from that self-perpetuating tripartite system; and while the 1944 Education Act has none of the recognisably 'Victorian' attitudes of the Taunton report, the inequalities have not been eradicated. The Dainton Report of 1968, on technology in higher education, is an example of the new rhetoric, and an example of the success of Snow's ideas. What we require now is education which will meet the national need. Dainton tussles briefly with the need for individual freedom, then concludes, "National requirements do, after all, determine the opportunities for individuals".⁶ It is a constant weakness of educational reports that these requirements are, eventually, recognisable in terms of economic progress along current lines — which begs a lot of questions.

Of course, things have improved enormously since 1868, but let us not ignore the built-in classification of people that still exists, to the detriment of those people. Culture is not just the property of the 'first grade'; arguments about culture, the 'two cultures' debate included, often assume it is. That, then, is one way of going beyond the two cultures dichotomy: to recognise the economic factors which determine to quite a large extent the nature and quality of culture.

Another way, as Snow indicates, would be to notice the rise of the 'third culture', the social sciences. Most universities tend to split themselves three ways — arts, sciences, social sciences. And it is the third group which is the expanding one.

Durkheim is as good a place as any to start with for the distinctively sociological approach to man — man as a socially created being.

Every society sets up a certain ideal of man, of what he should be, as much from the intellectual point of view as the physical and moral. This ideal is, in some degree, the same for all members of society ; but it also becomes differential beyond a certain point, according to the specific groupings contained in its structure. It is this ideal, which is both integral and diverse, that is the focus of education . . . Education is thus simply the means by which society prepares, in its children, the essential conditions of its own existence.⁷

The growth of this way of seeing education, indeed of seeing ourselves, is yet another way of breaking open the hermetically sealed containers of specialisation and privilege in our diverse culture. Equally, the principle that creates a sociology — treating all fact as social fact — can lead to the same kind of exclusiveness, one-sidedness and incompleteness that we have lamented elsewhere.

Another way of reducing the fragmentation might be an examination of the nature of creativity in the various branches of knowledge and the arts. This would not affect much of the educational argument ; but a model, like Liam Hudson's, of the convergent and divergent minds, indicates that the processes of creation are similar in the various 'cultures'. But, that said, this line of thinking does not take us far. A living culture demands creativity but is not created by it. Culture is integrated at the level of discourse, not at the level of creation. And important though it is for us to have a clear notion of Christian creativity — and in that sense we all read Genesis properly these days ! — it will not help us much with the problem of a disintegrating culture.

But what is the point of working for a common culture anyway ? Do not those who work for it make it into a false God ?

My point about that with regard to Arnold and his successors was that his idea was incomplete if one argues from a Christian standpoint, taking Eliot's notion of culture as a whole way of life. Our aim should be one of completeness, the cultured man in the cultured society.

These are pitfalls. There is the remnant mentality, which takes the Christian so far out of the world that such an ideal is an impossibility. It would seem that here an entirely laudable desire for holiness has produced a sense that salvation is possible for individuals but never, in some way, for societies. The Old Testament remnant never lost the vision that both were necessary. Nor should we.

But equally we can take on a misleading, misty-eyed conception of what an organic society might be. It is not unusual for those who plead for a unified culture to have an Arcadian conception of past glories, when you could take a girl to a tournament, buy her lampreys and chips and twenty Woodbines and still have change from a groat. And we should be equally suspicious of those who see history as a sort of ethical escalator, with the neon lights of the kingdom of heaven on earth winking at the top. There are to be all sorts of wars and rumours of wars before the end comes. It is up to us to be blessed peace-makers, making real peace in the cultural sphere as in others.

In the original lecture I suggested one small way in which we might begin, in the realm of religious language. It may be that the language of the Authorised version has become obscure, for the language has changed since 1611 so much that it has become misleading to take it literally in some places. But all the current versions of the Bible that I have come across are often ludicrously infelicitous in their use of language. Ian Robinson, in his book *The Survival of English*, argues that the decline of religious language has gone so far as to make it genuinely difficult to be religious. I feel that Ian Robinson, in the great tradition of Arnold and Leavis, laments this as a cultural rather than a religious fact, but the argument is a strong one. A questioner made the important point that I seemed to be falling into the

class trap I had so gingerly avoided earlier, and ought to make the sacrifice for the extension of the kingdom to those whose natural language is that of the tabloid newspaper. In a way the questioner answered his own problem by reference to the case of Bunyan, a man deeply biblical in his writing, and yet popular in the best sense, whose style is very different from the Authorised Version. He was good at it, though; he uses real proverbs with the authentic zip and daring of living colloquialism. Where is the modern version of *Proverbs* that has real proverbs in it? As Bunyan himself noted, second-hand religious experience makes a useless religious book; but so does flat, boring language; far better to “make truth to spangle, and its rays to shine”.⁸

As Ian Robinson hints, it is not only our cultural life that is the poorer for drab journalese religious language; it may be our sense of the authority and validity of religious experience that suffers too. This may seem a narrow part of God’s vineyard, but it does seem to be one area where there is work to be done.

NOTES

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8. John Bunyan, *The Pilgrim’s Progress*, London, 1678, ‘The Author’s Apology for his Book.’

RUTH ETHELLS

A Model of Making: Notes Towards A Theology of Writing

In this paper Miss Etchells, Vice-Principal of Trevelyan College, Durham, explores the analogy between God as Creator and human creations as exemplified in the poet's art. The paper was read to the Victoria Institute in the Symposium on "The Christian and Modern Culture" held in London on 18 May 1974.

Any approach by a Christian to works of literature, particularly modern ones, must inevitably lead to thinking about that activity which defines 'the writer', be he novelist, poet, or dramatist. What happens when a writer writes, and what is the theology of this 'happening'? That is, on what Christian understanding of the act of creation does the writer's work rest?

There are two obvious ways of approaching this. The first is from the angle of the writer: the second from the biblical perspective of a creation as a 'happening'. To these one could valuably add a third (in fact Dorothy Sayers has done so): an approach from those credal formulations, hammered out by the Christian church through the ages, which have bearing on the problem. The doctrine of the Trinity is one such.

I propose to start with our human knowledge of the human activity. From there we shall move out to that frame of reference which so many critics recognise as extra-human.

For in Eliot's words,

What we call the beginning is often the end
 And to make an end is to make a beginning.
 The end is where we start from. And every phrase
 And sentence that is right (where every word is at home,
 Taking its place to support the others,
 The word neither diffident nor ostentatious,
 An easy commerce of the old and the new,
 The common word exact without vulgarity,
 The formal word precise but not pedantic,
 The complete consort dancing together)
 Every phrase and every sentence is an end and a beginning,
 Every poem an epitaph.¹

So let us begin with that "ending" of the creative act of writing, a poem. Eliot has drawn attention, in his ambiguous use of the word "end" ("the end is where we start from") to the fact that aim, intention, not only envisages the consummation of the creative act but is also its stimulant, its initiating force. In "intention", in "idea", lie both the beginning and end of the writing, and what lies between is the formulation of that intention with exactitude and justice: the word, which is always an image or symbol of the thing it represents, being chosen as exactly co-extensive with that to which it relates. When this happens then there is unity and delight in the thing created: "The complete consort dancing together". The poem completed is "an epitaph" in the sense that it stands as a memorial with power to an activity which has taken place and been embodied. Something new has been created and the energy of that creating is now complete and finished. It is another kind of power which informs what lies before us on the printed page.

Even in this brief extract, therefore, certain essential and defining aspects of the writer's activity appear. One is its mysterious relation to time — it looks towards a point in the future while drawing from the past, in the present. There is, in other words, a time continuum. The second is the notion of exactitude of correlation between the final form and that which it expresses; the writer's activity is one of justice. And thirdly there is in his activity, successfully consummated, something which gives both coherence and felicity, the two qualities seen in organic relationship to each other.

At the end of her most enriching selection of poems for *The New Oxford Book of English Verse* (1972), Dame Helen Gardner has placed a single poem under her own title "Epilogue". It is a short section of Louis MacNeice's "Autumn Sequel".

A CLOUD of witnesses. To whom? To what?
To the small fire that never leaves the sky.
To the great fire that boils the daily pot.

To all the things we are not remembered by,
Which we remember and bless. To all the things
That will not even notice when we die,
Yet lend the passing moment words and wings.

* * *

So Fanfare for the Makers: who compose
A book of words or deeds who runs may write
As many do who run, as a family grows

At times like sunflowers turning towards the light,
As sometimes in the blackout and the raids
One joke composed an island in the night,

As sometimes one man's kindness pervades
A room or house or village, as sometimes
Merely to tighten screws or sharpen blades

Can catch a meaning, as to hear the chimes
At midnight means to share them, as one man
In old age plants an avenue of limes

And before they bloom can smell them, before they span
The road can walk beneath the perfected arch,
The merest greenprint when the lives began

Of those who walk there with him as in default
Of coffee men grind acorns, as in despite
Of all assaults conscripts counterassault,

As mothers sit up late night after night
Moulding a life, as miners day by day
Descend blind shafts, as a boy may flaunt his kite

In an empty nonchalant sky, as anglers play
 Their fish, as workers work and can take pride
 In spending sweat before they draw their pay,

As horsemen fashion horses while they ride,
 As climbers climb a peak because it is there,
 As life can be confirmed even in suicide.

To make is such. Let us make. And set the weather fair.²

Presumably Dame Helen positioned that poem as the best expression she could find, in poetry, of the making of a poem and what was involved in it. Since in poetry we tend to see an intensification of that creative activity which is writing, it is helpful to look through this particular magnifying glass at what happens, what qualities or activities are called into play, when a writer writes.

The “makers” are “a cloud of witnesses” to the whole creation which is their context, which exists beyond them but which gives their lives meaning and progression, (“words and ways”) and which they therefore recall and celebrate (“which we remember and bless”). This is the framework within which MacNeice explores those qualities which are held in common by the makers who compose, either in words or deeds; a framework of celebration of certain qualities in the universe, light, heat, the beautiful and the utilisable in their changeless and daily relations to mankind.

The qualities of creating, then, are in some profound connection with this natural context; indeed they may arise within and from the natural cycle of time: “who runs may write/As many do who run”. This normal progression of time has one inherent inevitable quality, that of growth. MacNeice emphasises one particular kind of growth here: that is, the growth of the group, the quality of “unity”. He uses two examples of this. First, that of the “family”, the basic natural unit, which “grows/At times like sunflowers turning towards the light”. And, second, even more clearly, a ‘group’ which is held together by a sense of security (“an island in the night”) not because of,

but within, the dark which contains it, through the sharing together of laughter and its cause during the bombing raids of the Second World War. The context of both groups as that of the cosmos — light and dark; and within it, and in response to it, or in defiance of it, in this unifying activity.

One simple unit can initiate this unity, “one joke”; and similarly a single stimulus can give rise to the next quality of creating. “One man’s kindness” can supply the pervasiveness which is an aspect of creativity, that coherence of ethos which makes of a room, or a house or a village — the dwelling places of people — a work of art. There is, through the use of the word ‘kindness’, a moral element in this quality, and this is reinforced in the verse’s second illustration of creating. For here making includes ‘setting right’, even so simple a thing as the making true of the screws or blades, the devices which can hold together or split cleanly apart. It includes significance, too, — “can catch a meaning” — and together the two homely examples in the verse suggest some redemptive quality about the morality of the making. (“Anyone”, said a character in *A London Family*, “can make a thing all new and nice. But to make a good thing out of an abandoned one is far more creative work — a work of redemption”).³

This leads us naturally into the thought of the next two verses, whose connection is that of the time continuum. “To hear the chimes at midnight” does not only refer us back to the ironies of *Henry IV Part II*, with two old men chuckling together reminiscently over the delights of their madcap youth. The point for the poet here is that, divided as their ways have become, at the moment of remembering past shared pleasures the old have come together in the present. This is one kind of creativity possible to old age, and leads us into the next, that element of visionariness where the future is real to its maker before it is realised in actuality, so that planting in old age an avenue of limes he shares in vivid vision with his descendants their scent and shape. Such a quality in ‘making’ defies death and suggests the “now-ness” of creativity, which realises its artefact *in* time and space but also on the plant of eternity, where

time crosses it. And this leads us to the next pair of examples where making is seen as an activity stimulated by adversity, where tenacity, moral courage, informs the act: whether it is so trivial a domestic creation as when “in default/Of coffee men grind acorns”, or so crucial a one in war as when “in despite/Of all assaults conscripts counterassault”. Creativity here is endurance, vitality, adaptability. It grows naturally out of the visionariness of the previous verse: rewards are not the point for the maker.

It will be apparent that MacNeice has deliberately used as examples of the qualities attaching to the acts of making, the homely, domestic and everyday. So, having struck the note of creative moral courage in the face of unusual adversity (in time of war) he develops it in a series of cameos where humanity is creative in its more ordinary encounters with nature, each ‘maker’ standing in relation to his or her creation through engaging in natural rhythms, resources, forces, phenomena. Some achieve their creation through weariness, effort, and distress: as “mothers” who “sit up late night after night/Moulding a life”, “workers work and can take pride/In spending sweat before they draw their pay”; and “life can be confirmed even in suicide”. Others are using the forces of nature to achieve their creation “as a boy may flaunt his kite/In an empty nonchalant sky” — for the sheer joy of doing; the reward being in the flaunting. Others have a more tangible ‘creation’: “as anglers play/Their fish”, and “As horsemen fashion horses while they ride”. All of these are examples of creativity, either where there may be something material to “show”, or where the vision itself is sufficient reason.

So the simple statement of the poem, through a series of related examples, has been about what goes into the making of a book. The book can be “of words or deeds”; MacNeice suggests that both are creative “happenings” from which something new emerges. These qualities, broadly, are, of unifying, i.e. there is in some way a socialising force in this process: of redeeming; of “now-ness”, a realisation of past and future in the present; of moral courage and vitality; and of engagement between creator and certain natural forces.

In the brief first section MacNeice defines the actions of the makers as "witnesses" and sets them in a cosmic and extra-cosmic context, cosmic in the reference to the moon and sun, extra-cosmic in the allusion behind "the cloud of witnesses". In its original setting (Hebrews 12: 1) this has reference to the Church triumphant in its widest sense, patriarchs, prophets and servants of God who have completed their "making". The scale is at once vast and domestic: "the great fire that boils the daily pot". The inexorable unconcern of Nature for its human inhabitants, ("that will not even notice when we die") that source of so much literary *angst*, is seen here as something which does not diminish either humanity's use of natural resources and power, or dilute humanity's thanksgiving for it. Acceptance, in other words, of a particular role in the universe marks this maker's view of proper creativity; through it the passing moment is lent "words", realisation, concretisation, and "wings", vision and fluency.

There is one other point in this poem we ought to note, in relation to what a writer does. It lies in the first line of the poem. A writer, or maker, is a witness: yes. But "to whom?" "to what?". The questions are ambiguous, because they can express either the accusative or the dative. In other words they ask both of "what" and "whom", the writer speaks in his witnessing; and "to what" and "to whom" that witnessing is addressed. A writer creates a book. It tells of something or somebody. It is possible, also that it tells this *to* something or somebody. We do not know. The very form of the question makes clear that both meanings are not inevitable. A readership is a possible "end" from which the writing begins, but it may not be so. Art may be its only witness to its own work, like the boy flaunting the kite in "the empty nonchalant sky": or the witness may be something posterity will enter into and most fully comprehend, like the "greenprint" of the avenue of limes which reach their bloom and "perfected arch" after the creator's death.

To sum up, then: those aspects of the writing activity that Eliot noted, the mystery of the time continuum, the 'justness'

of the activity, the unity and the felicity, are reiterated in MacNeice's verses (though in some cases with different emphasis) with the addition of the quality of redeeming, of moral force and vitality, and of engagement between creator and certain natural forces. To this idea of the writer is added the crucial notion of witnessing, with the transitive/intransitive ambiguity attached to it. Is art, whether of writing or painting, as David Jones suggests, the sole intransitive activity of man? ^{4a} Or, like the tree in the Quad, do we have to posit "Yours faithfully, God," as recipient of our witness, though the cosmos we "remember and bless" is deaf to our celebration and our fellow creatures seem to share its insensitivity? Connected with this is that quality of "pervasiveness" we noted as an attribute of the creative activity, and the problem that arises when the culture within which a writer writes is, like that of today, far from being pervasive, fragmented and dislocated. The nightingale indeed sings in the garden/"' Jug Jug ' to dirty ears: " ⁵ and how shall the writer speak among those who have no ears to hear or eyes to see?

This last question in relation to the act of writing is explored most movingly by W. H. Auden in his poem "In Memory of W. B. Yeats, (d. January 1939)". The whole poem is well worth detailed study in this context, but space only allows us to note particularly section III.

In Memory of W. B. Yeats
(d. January 1939)

III

Earth, receive an honoured guest:
William Yeats is laid to rest.
Let the Irish vessel lie
Emptied of its poetry.

In the nightmare of the dark
All the dogs of Europe bark,
And the living nations wait,
Each sequestered in its hate;

Intellectual disgrace
 Stares from every human face,
 And the seas of pity lie
 Locked and frozen in each eye.

Follow, poet, follow right
 To the bottom of the night,
 With your unconstraining voice
 Still persuade us to rejoice ;

With the farming of a verse
 Make a vineyard of the curse,
 Sing of human unsuccess
 In a rapture of distress ;

In the deserts of the heart
 Let the healing fountain start,
 In the prison of his days
 Teach the free man how to praise.

The state of humanity at the point at which Auden is writing therefore, is suggested by what has happened to two of its defining qualities, intelligence⁶ and pity. The two are linked in the verses so that what has happened to one affects the other. The "seas of pity" are "locked" and "frozen" — again there is this elemental natural reference — "seas" — and the moral evaluation of what has happened to man's intelligence, "intellectual disgrace", is attendant upon the un-naturalising of these seas.

All this is the cultural context within which the writer of today must write, and as such relates back to the question as to how the writer shall speak amid such alienation. Auden proposes the writer's task in creating at such a moment. It is to follow where such elements in his culture lead him ; "follow" in the continuous present (the word is repeated) to the "bottom" of the night where the nightmare is happening. That is, by a subliminal continuity from the image of the "seas" in the preceding verse, to sound the depths. "Pity" and the "nightmare" thereby become linked. From amidst that sounding of the depths the writer's task is to "persuade" us (not "compel" ; "unconstraining" is the adjective used of his address) to rejoice.

So the writer is one who from his profoundly sensitive response to the darkness of man's spirit is capable of retaining within that darkness that felicity which will win us to rejoicing. The *tone* of the challenge is important here. It is not a rejection of trial and grief, not even a confrontation with it. Rather it is a bearing the reality of it to such creative effect that a cause for rejoicing, a new reality, is created out of the encounter.⁷

Hence there naturally follows in the next two (concluding) verses a series of images of fruitfulness, for such must be the result of the writer's searching out of the dereliction of his age:

With the farming of a verse
Make a vineyard of the curse.

Sustenance for the spirit is available through the poet's labour, a harvest of food and drink, of bread and wine. Though his 'imaginative soil' be eroded,⁶ parched by "the curse" (surely of primeval reference, this, as well as culturally immediate?) yet with the craft and tools of his writing insight and skills there will be harvest song.

Sing of human unsuccess
In a rapture of distress.

The paradox continues in the song, which is to be of human "unsuccess"; contrast this with "Arms, and the man, I sing"⁸ the heroic and the victorious subject matter of epic literature of the past. It is not of valorous deeds and heroic endeavour that the writer is called to proclaim at this cultural point in time, yet "rapture" is an achievement possible even in that state of distress to which his journey "to the bottom of the night" has led him.

"Poetry makes nothing happen", Auden wrote in an earlier stanza of the poem. We are reminded of it in the last verse of the poem, where Auden suggests the kind of "happening" which is both what poetry *is*, and what it *does*. Man's heart, however desert it may be, can be healed by the "fountain" of such a

poet's writing. In the "prison" of his days (the image referring back both to "locked" seas of pity and to the "raw towns" we believe and die in), in such a prison the "free man" will learn from the writer "how to praise". So the "end" of the writer which is his beginning is again "felicity"; not simply the poet's own rapture but so real a mode of being that "praise" becomes the spontaneous activity of the free man also.

Praise of what? of whom? to what? to whom? On the whole Auden does not help us here. Praise, perhaps, of all those positives referred to; earth, fruitfulness, intellectual honour, pity. Poetry does not necessarily free a man but it can teach the man who is free to it how to live in his prison, praising. So perhaps rather than 'praise of' or 'praise to' the key phrase is 'praise in'.

Auden adds to our understanding of what a writer 'does', therefore, the notion of a "way of happening" which has reference to all experiences of man's spirit, including the arid. It rejoices even in the midst of a truthful appraisal of horror, because its construct is a new creation and therefore affirms life. For this reason, therefore, literature is for the healing of the nations, measurable in fruitfulness, order, and praise; the celebration of freedom, even in the prison of his days man's proper state.

We are able, therefore, to address ourselves now to the first part of our inquiry from the writer's point of view: "what happens when the writer writes?" Putting together the insights we have just gained, certain key categories of the activity emerge. One is its "*now-ness*", that quality by which it relates the notion of time, (past, present and future) to the notion of eternity, both in the writing as a process, the writing as a completed artefact, and the writing as an experience within the reader/hearer. Continuousness and indestructibility attach to this category. The second category, organically connected with the first, is that of the activity as an event in its own right, measurable in the qualities that pertain to it rather than in its effects; though some of these qualities are by their nature affective. The qualities which attach to writing as a "happening" are seen to be judgment/justice,

both in the sense of "appraisal" and in the expression of that appraisal; synthesis, in the sense of both "unifying" and "ordering"; fruitfulness, in the inherent life of the artefact itself and/or in that which it causes elsewhere, generates; reclamation, both in a new sense of significance ("catch a meaning", MacNeice) and in that from which a sense of meaning arises, the redemption of dereliction; joy/delight; and celebration, the gathering together of these qualities in a formal unifying expression of felicity.

There is, of course, a theological model for this. As we proposed in our inquiry, "a Christian understanding of the act of creation" does exist on which such a notion of the writer's work can rest, and it is to be located, appropriately enough, in the extraordinarily rich meaning gathered up in the Biblical use of "Logos", the theology of the Word.⁹

We may begin, in fact we must begin, with the original Word of creation. It is here that the first strong reason appears for recognising in the Biblical perspective of "the Word" a model for what the writer does today. Dorothy Sayers reminds us that in the account in Genesis I of creation by the word of God, man is made in God's image. But in what way? she asks. The first chapter of Genesis does not tell us much about God except that "God created". "The characteristic common to God and man is apparently that: the desire and ability to make things".^{10a} So man is in the image of God in his capacity as maker. This leads us to look at the nature of God's creative activity and immediately we find ourselves in the realm of Logos, the Word. The gospel of John in the *New Testament* is linked with the first book of the Old, deliberately, by opening with the same phrase: "In the beginning . . ." In Genesis it is, "In the beginning God created". In John it is, "In the beginning was the Word", through whom "all things were made" and without whom "was not anything made that was made".

The Word is in some way connected with the origin of life, vitality: "in him was life" (or as the marginal reading puts it, "that which has been made was life in him"). And the Word is also identified with the figure of Christ: "And the Word became

flesh and dwelt among us, full of grace and truth”.

The link that is made in the gospel of John between God's original creative activity, the Word, and Jesus, is adumbrated in the *Epistle to the Hebrews*, where, too, the first conclusion we must draw from this bringing together, that of the continuousness of God's creative activity, is observed:

In many and various ways God spoke of old to our fathers by the prophets; but in these last days he has spoken to us by a Son, whom he appointed the heir of all things, through whom also he created the world. He reflects the glory of God and bears the very stamp of his nature, upholding the universe by his word of power.¹¹

Three elements emerge from this immediately. One is that God's creative activity was certainly conceived as continuous up to and including the life of Christ. The second immediately transfers this continuousness into a new and strange category by suggesting that it was not to be understood as wholly in a sequence of time since, as well as being co-extensive with the physical incarnation of Christ in space and time, it was also coincident with Christ in the creation of the world. And the third is that this creating is firmly linked with “word”: the word of creation, the word of the Law, the word through the prophets, the word through Christ the Son, and Christ's “word of power” which in some way is “upholding the universe”, i.e. maintaining its structure and balance. This last suggests a present activity as the writer to the Hebrews understood it.

At this point we realise we are coming close to that concept of “now-ness” we saw as being an essential element in the creation of literature. Certainly something very strange is happening to the notion of time. There is a linking force, “the Word”, equally present and active in the creation of the world, in the time span represented by the Mosaic Law and the utterances of the prophets, in the life of Christ, and in the periods when *Hebrews* and *John* were written. Is there, one is forced to ask, any logic by which it should suddenly cease to be present and

active? Or do we have here something on which to base our demand for the perpetual intersection, in literature, of eternity by the present moment?

Gustaf Aulen has well expressed this “now-ness” of creation. God, he suggests, is “the God who ‘acts’, (the he who was, is and shall be)” . . . and so . . . “The act of creation loses its meaning . . . if it is reduced to be only an initial action performed once in the past, if creation were something that has stopped, if it were not an action of God constantly going on anew.”¹²

So God is one who acts, whose act is creating, and whose creating is constant. And in some way the Word is the embodiment of this principle of creative constancy.

He is the image of the invisible God, the firstborn of all creation; for in Him all things were created, in heaven and on earth, visible and invisible, whether thrones or dominions or principalities or authorities — all things were created through him and for him.
(Col. 1: 15–16).

In what ways can we understand the Word, the Logos, as being the embodiment of this creativity? Here reference must be made to the extensively thorough study of the word *Logos* by Kittel, and others in Volume IV of the *Theological Dictionary of the New Testament*.¹³ Of the great richness of allusion and concept available here, I want to lay stress on two main areas of understanding. One is the Greek-Hebrew tension in the use of the word Logos, with totally different concepts being brought into harmony in its use in John’s gospel.^{13a} The other is the equating of the speech, actions, and being of Christ with the Logos and the implications that follow.

For the Greeks, as Kittel points out, Logos was in no sense a word of creative power, and thus its usage stands in contrast with the “Word” of the Hebrews. It always referred to something natural “even to the extent that the account of a thing and the thing itself coincided, so that “Logos” is to be translated

“thing”.¹⁴ Or it was a principle or law discoverable through calculation, or reason. Or, more profoundly, it was the establishment of nature or essence. Logos could therefore be a “significant utterance”. The important element in the Greek usage for us, therefore, is that it contains a *nous*, thought, by which a thing is known and grasped. To grasp the Logos in this sense is to grasp the thing itself — i.e. its nature is brought to light.

But there is no sense in which this is revelation from God to man. Rather it is “revelation only in the sense that one perceives the inner law of the matter, or of self, and orientates oneself thereby.”^{13b}

By contrast the Hebraic use of the verbal equivalent, predominant in New Testament usage, even in *John*, was revelatory and dynamic. Kittel writes: “Only in the Hebrew is the material concept with its energy felt so vitally in the verbal concept that the word appears as a material force which is always present and at work, which runs and has the power to make alive.”^{13c}

Thus it is that the prophets, for instance, are seized by God, by His spirit and His word; the power of God finds recognisable expression in that logos which is Law, which is prophecy, and which is often accompanied by signs and images. (There is a connection between ‘image’ and ‘word’ from the earliest prophecy.) Thus it is, too, that the other sphere of revelation, Nature, has everywhere in the Old Testament its creation attributed to the word of God. *Genesis*, Chapter one, embodies this, and may itself be a re-fashioning of an older account; the work God does (Chapter 2 v. 2) being replaced by the word He speaks.

It is the coming together for us of both the Hellenic and Hebraic understandings of Word that makes the account in John’s gospel and in the Epistle so peculiarly rich. The Word is a message that corresponds to a reality; and that reality corresponded exactly with the historical figure the apostolic age had known:

That which was from the beginning, which we have heard, which we have seen with our eyes, which we have looked upon and touched with our hands, concerning the word of life — the life was made manifest, and we saw it, and testify to it . . . and we are writing this that our (your ?) joy may be complete. (1 John 1: 2-4).

Hence there is in the figure of Christ as Word both the Hellenic suggestion that by this, reality can be known and grasped, "the account of a thing and the thing itself merge" in a way and in a sense not guessed at by the Greeks; and yet there is the dynamic and revelatory "seizing" which is wholly Hebraic. And it is this fusion which leads us on to see the Logos Christ figure as that model for creation as "event" which was the second category in which we understood the act of writing. Christ the Word, is not a symbol. He is an event, a revelation assessable only in its own terms, owning its own vitality and life. And it is in *this* sense, rather than in the thought of Christ the metaphor of God, that we find the true theological basis for that "way of happening" which is writing. For as we have seen, writing is an event. A poem is not an idea put into words, but something discovered by the putting into words, living its own life by virtue of that act of creation.

Nor is any distinction to be drawn between the speech, action, and being of Christ. They are a unity; three aspects of the same event, and to be experienced as such. This unity is so extended that ultimately Logos comes to contain the whole range of the Christian message: "There are not two Words of God but only one, which is given as such in the continuity and unity of salvation history, from the prophets to the Son. The first part of this in time is meant to point to the second, the second to fulfil the first."^{13a}

Once we have understood that in the theology of Christ the Word there is the unity of God's revelation to mankind, we then begin to realise those other elements which are relevant to our study of the Word as a model of making.

Gustav Aulen has pointed out one aspect of this unity.^{13e}

The acts by which God makes Himself felt are classified in Christian language under three heads: creation, judgment, redemption. We have already noted the sense in which Christ the Word embodies the creative power of God. But He is also the expression both of God's judgment and of His redemption; and in the sense that creation has been completed, and yet is continuous, so also is the activity of judgment and redemption.

All three, as Aulen reminds us, refer also to the present: "Behold, now is the acceptable time, now is the day of salvation."¹⁵ (2 Cor. 6: 2). He speaks, therefore, of "God's acts of creation, judgment and redemption as ever-continuing and of the relation of this his three-fold activity to the here and now."^{12a}

It will be remembered that judgment/justice, (in the sense of appraisal and its proper expression) and reclamation, (in the sense both of discovering meaning and redeeming dereliction) were qualities attaching to that category of "event" which was essential to the nature of writing. In the theology of the Word we find these qualities linked with the activity of creation. And it is this point which helps shape Tolkien's view of the act of writing. He sees every writer as "making a secondary world" . . . as being "a sub-creator", who, deriving his creative power from elsewhere, "wishes in some measure to be a real maker, or hopes that he is drawing on reality; hopes that the peculiar qualities of this secondary world . . . are derived from Reality, or are flowing into it."^{16a}

To illustrate such a structure of reality he justifies, in the writing of fairy tales, two elements which exactly accord with those qualities we have just noted as consonant with Creation: judgment and reclamation. He calls them, in the categories of his own writing, Taboo and Eucatastrophe; and in his own work they are exemplified by 'prohibition' and 'the consolation of the happy ending'. He writes of

. . . The great mythical significance of prohibition.
A sense of that significance may indeed have lain behind

some of the taboos themselves. Thou shalt not — or else thou shalt depart beggared into endless regret. The gentlest 'nursery tales' know it. Even Peter Rabbit was forbidden a garden, lost his blue coat and took sick. The Locked Door stands as an eternal temptation.^{16b}

and secondly he speaks of the Consolation of the Happy Ending.

Since we do not appear to possess a word that expresses (it) — I will call it Eucatastrophe. . . . The good catastrophe, the sudden joyous 'turn' . . . This joy, which is one of the things which fairy stories can produce supremely well, is not essentially 'escapist' nor 'fugitive'. . . . It is a sudden and miraculous grace, never to be counted upon to recur. It does not deny the existence of *dyscatastrophe*, of sorrow and failure. The possibility of these is necessary to the joy of deliverance; it denies (in the face of much evidence, if you will) universal final defeat, and in so far is *evangelium*, giving a fleeting glance of Joy, Joy beyond the walls of the world, poignant as grief.^{16b}

Now granted that Tolkien is speaking about one particular form of writing, there is an element of truth in what he has to say about the *evangelium* of the writing act which is not so particular and narrow. Speaking more generally of writers he acknowledges their attempt to achieve a quality "that can fairly be described by the dictionary definition: inner consistency of reality."

'Is it true?' The answer to this question that I gave at first was (quite rightly) 'If you have built your little world well, yes; it is fine in that world', that is enough for the artist, (or the artist part of the artist). But in the 'eucatastrophe' we see in a brief vision that the answer may be greater — it may be a far-off gleam or echo or *evangelium* in the real world . . . The Gospels contain many marvels; . . . among (them) is the greatest and most complete and conceivable eucatastrophe. The Birth of Christ is the eucatastrophe of Man's history. The Resurrection is the eucatastrophe of the story of the Incarnation. This story begins and ends in joy. It has pre-eminently the "inner consistency of reality".

. . . For the Art of it has the supremely convincing tone of Primary Art, that is, of Creation. To reject it leads either to sadness or to wrath . . . Because this story is supreme ; and it is true. Art has been verified. ¹⁶

“ The God of creation ”, that is, (both the writer’s God and the God of Christian theology), “ and the God of salvation, are one and the same.” ^{12b} Hence, although the power of the Word is “ dangerous ” as both Dorothy Sayers and David Jones have pointed out, because of its “ capacity to bring to Judgment ”, in the dereliction of that hour there is eucatastrophe, there is grace, there is *evangelium*. ^{10b, 4b}

Only the power of the Word is adequate to encounter the power of the Word. The only power which can compass the Word of judgment, the Law, is the Word of reclamation, and hence both these qualities pertain to the Word as event, in time and out of time. The word of joy, of eucatastrophe, to be rooted in reality, in power, must be no mere mechanistic contrivance, but, as we saw in the poems we looked at, a word that could “ catch a meaning ” and/or could “ make a vineyard of the curse ”. Such a word will not be escapist or fugitive. Rather, as in Auden’s poems, it experiences dereliction and in the encounter affirms life. Helen Oppenheimer ⁷ insists that this joy expressed through æsthetic arises from a dereliction which is redeemable finally because grounded in God’s, not one’s own ; a suffering God is essential to the concept. That is, God the artist is willing to pay the full price of tragedy. It is this which makes for the combination of dereliction and glory in the Word, a combination that affirms meaning, significance. The Greek notion of the Word fuses fully here with the Hebraic ; ‘ meaning ’ and ‘ power ’ become one.

‘ Thy words were found, and I ate them, and thy words became to me a joy and the delight of my heart ; for I am called by thy name, O Lord, God of hosts . . . Therefore thus says the Lord : . . . If you utter what is precious, and not what is worthless, you shall be as my mouth ’. (Jer. 15: 16, 19). ¹⁷

“ A joy and delight ”. Poussin has been quoted as saying

“the goal of painting is delight”, and David Jones comments that festal qualities ought properly to be associated with all art including that of writing, however difficult it is to posit the delight. Part of this delight is the result of that ordering, unifying, making coherent which we saw as another quality attaching to writing as event.

. . . “a new ‘something’ has come into existence . . . partakes in some form, however difficult to posit, of that juxtaposing by which what was *inanis et. vacua* became radiant with form”.^{4c}

But another element in this delight is that it has no end beyond itself. It is not only that, theologically speaking, creation of the world “was not a necessary but a gratuitous act”,^{4d} (and) that this gratuitousness in the operation of the Creator is reflected in the art of the creature. The boy “flaunts his kite” and “climbers climb a peak because it is there.” It is, perhaps, even more than this, the notion of creating “for fun”; a Maker who scatters primroses on a bank behind a shed, where they will never be seen, rather than neatly displayed in serried ranks where they will be most visible. A Creator whose masterpieces are not necessarily ‘witnessed’, who creates for the joy of it. The human creative spirit often thrives on appreciation; but it is at its most mature and most relaxed when it creates in joy, writes for fun, and accepts response as a secondary pleasure. The notion of “play” which Moltmann is exploring¹⁸ in his theology of joy seems to me strongly present here. The Knox translation of Proverbs Chapter 8 alluding to Wisdom as with the Logos when all things were formed, playing before Him at all times, runs.

I made play in this world of dust, with the sons of Adam for my play fellows.^{4d, 19}

‘Play’, ‘fun’, can be transitive or intransitive in nature, and seem to me to gather together both the notion of ‘delight’ and the ambiguity of ‘witness’ we noted earlier. They hint too at that celebration which is the formalising of fun, and which marks the order the writer imposes on his material. “It is still perfection

we are at", as Charles Williams said.

It is Williams who leads us to the final part of what he himself calls "the religious diagram of art."²⁰ He speaks of the need for "accepting in the re-creation the original creation".^{21a} That is, of receiving in the human maker's art an awareness of the original divine activity, and this, of course, is where the work of the Holy Spirit, "the Comforter" appears (how relevant the name to the work of the writer as we have seen it rooted in Logos!). He has the continuation of the work of the Logos by the continuity of empowering. I do not wish to go into all the ramifications of the Trinitarian doctrine here, even where it is relevant to the making of writing: Dorothy Sayers has already done this most fully and provocatively in the book from which I have quoted, *The Mind of the Maker*. And the delightful story she tells of the Japanese gentleman is sufficient *caveat*. (This apocryphal sir exclaimed "Honourable Father, very good; Honourable Son, very good; but Honourable Bird I do not understand at all!"^{21b})

But in looking at the extended and developing theology of the Logos we noticed that it was seen as continuing and continuous, in the work of the ascended Lord and His Spirit. Perhaps we may be helped here by T. de Chardin's comment²² that the power of the Word Incarnate penetrates matter itself, and stimulates collaboration in *us* so that Christ can reach plenitude. Hence each man builds a work, an opus, and in making his own soul contributes to the making complete of the world, the universe in its temporal and eternal categories, the Heavenly Jerusalem. In such an activity, the "soul wedded to creative effort" the power at work is the Spirit, the direct continuation of the "word of power" which we saw upheld the universe. Dorothy Sayers commented

The Power, the Spirit . . . is . . . a social power, working by bringing all minds into its own unity, sometimes by similarity and sometimes by contrast. The Power . . . is also within you, and your response to it will bring forth further power, according to your own capacity and energy . . . and a communication of Power

to the world about you.^{10c}

This is precisely in accord with what Kittel called the “genuine and all pervasive New Testament dialectic of grasping and being grasped”. There is for the writer both a passive and an active role in relation to this creative power, and that same dialectic is inherent in the work he produces, in its potential effect on the reader. Hence the “now-ness” of his activity; hence its existence as event. The readiness is all . . .

To make is such. Let us make. And set the weather fair . . .

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3. Hughes, M. Vivian, *A London Family*, Oxford, 1946.
4. Jones, David, *Epoch and Artist*, 1959; (a) p. 149; (b) p. 160 “These forms . . . came into being by the operation of a mind free to judge . . .”; the “virtue of art” is said to be “to judge”; (c) p. 166; (d) p. 157.
5. Eliot, T. S., “A Game of Chess”, *The Waste Land*, Section ii.
6. Martin Jarrett-Kerr, in *Studies in Literature and Belief*, Rockcliff, 1954, p. 178, quotes Thomas Mann as saying “Peace . . . signifies a gift of intelligence before God” and comments, “There is a sense in which any work of real integrity, a work arising from true disinterestedness, is the product of ‘intelligence before God’. And to however small an area the field of creative imagination may seem to have shrunk, so long as man is man there will still be this intelligence.”
7. Helen Oppenheimer in the Pastoral Theology lectures in the University of Durham, February 1974, speaking in her lecture on “Felicity” of the necessity for teleology to involve some element of happiness, referred to the “aesthetic” power in this. Beauty penetrating into song was a form of reality; that is, the aesthetic gave a form of disclosure where the glib statement did not. So — as in the Book of Job — the aesthetic expressed a moral truth where the flat narration could not. The extra element at the end of that book, therefore, even if “tacked on” was self-authenticating, a disclosure of glory, of blessing which “goes with the grain of the universe”.
8. Vergil, *Aeneid*, Bk. 1, 1.
9. It will be apparent in the ensuing pages that I am not attempting an apology for the Christian view of creation, but assuming its validity in order to explore its value as a base for literary aesthetic.
10. Sayers, Dorothy L., *The Mind of the Maker*, 1941; (a) p. 17; (b) p. 88; (c) p. 96.
11. Heb. 1: 1–3. See also Rom. 1: 4, 8: 3; 1 Cor. 8: 6, 10: 3f; 2 Cor. 8: 9f; Phil. 2: 6f; Gal. 4: 4.

12. Gustaf Aulen, *The Drama and the Symbols*, SPCK, 1970; (a) pp. 51, 52; (b) p. 58.
13. Ed. Gerhard Kittel (Trans. G. W. Bromiley), Eerdmans, 1967, pp. 69-143; (a) p. 91, "From the very first the NT Logos concept is alien to Greek thought. But it later became the point of contact between Christian doctrine and Greek philosophy."; (b) p. 90; (c) p. 93; (d) p. 129; (e) pp. 51-2.
14. I am indebted to Mr. H. L. Ellison for pointing out to me that since the Q'umran discoveries Johannine exegesis has been more emphatically on the basis of the Hebraic elements than Kittel suggests.
15. Aulen glosses this, "now is the day of creation, now is the day of judgment".
16. Tolkien, J. R. R., "On Fairy Stories", in *Essays Presented to Charles Williams*, OUP, 1947; (a) pp. 82, 83; (b) p. 47.
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REVIEWS

Janwillem van de Wetering, The Empty Mirror: Experiences in a Japanese Zen Monastery, Routledge and K. Paul, trans. from Swedish, 1973, £2.00.

As a young man the writer of this fascinating book was troubled by the problem of suffering. He read much about Christianity but he did not like it because it seemed to command him to believe what he did not believe: also it did not tell him why men have to suffer. Disillusioned with the religion of his parents he became a rebel, thought he was always right, and wanted to destroy the establishment. Gradually he began to wonder if Buddhism was not after all a better religion than Christianity. It taught that suffering is caused by the desire to have and the desire to be. Suffering became less severe after 500-600 reincarnations which seemed kinder than eternal hell fire.

So young Janwillem, now an ardent Buddhist at heart, saved enough money to last two years, travelled to Japan and enrolled in a Zen monastery. There, as with every new monk, the Master gave him a koan, or riddle, to solve. And every time he saw his Master thereafter the great man said, "What is your answer?"

A koan might be, "Every one knows the sound of two clapping hands. Now what is the sound of one clapping hand?". Or, "Show me the face you had before your parents were born, show me your original face." Or it might be just "Mu" which means emptiness, denial of everything. Or some other word such as Sky, God or Love.

Once given a koan, you must think about it all, yes literally all, the time: it must fill your entire

universe. Then one day enlightenment will come. But it is impossible to meditate on your koan for long on your own. Only when others are present will pride and shame stop you fidgeting, finishing too soon, or scratching yourself. Sitting motionless for hours on end, especially in the half-lotus position, is intolerably painful and productive of severe sores. Your troubles are aggravated if noisome insects suck your blood — but you must not mind. (Many monks say that meditation itself is insect-repelling and think it wrong to use insecticides because Buddha did without them in the Indian forests.) After a meditation session the monks roar with laughter if you mention your sufferings: if your mind was really filled with your koan you ought to have felt nothing. If after long hours of meditation a monk dozes the others are always ready to beat him with a stick — they know how to hit hard.

After weeks, months, years it may be, the Master, if he feels in the right mood, suddenly announces that you have solved your koan and gives you another. He may do this even if you have said nothing at all. If you actually try to find an answer, a verbal intellectual answer, to your koan, or indeed to talk philosophically or sensibly in any way, you will be rejected and laughed at.

The monks visit the Master at 3.30 a.m. every morning and at other times in addition during the day. Even so they find ways to break the monastery rules. There is a little ladder for climbing over the wall at night. They hide civilian clothes in their monastery temple and go out to visit cinemas, get drunk or frequent the brothels.

Janwillem talks to his friend Gerald who had earlier solved his koan. Gerald confesses freely that many of his friends who had received training in meditation and had passed all the tests were jealous, grabbing and conceited. Often they were gluttons and drunkards.

Latterly Janwillem was allowed to live with his friend Peter who was most tolerant, understanding and kind. Yet in a fit of temper he once found himself about to attack his friend with a knife.

After a year and a half of training the author asks, "What have I learnt?". "That I had to do my best, that I had to try and do everything as well as possible. But I could have learned that in Rotterdam. . . . But they managed to teach me something else here. Not only has one to do one's best, one must, while doing one's best, remain detached from whatever one is trying to achieve." But this last seemed impossible any way. In a fit of deep depression he locked himself up for three days. "The whole Buddhist adventure now seemed one huge failure, and I wanted to leave." On a mountain he nearly took his life. Disillusioned a second time, he returned to Europe — and so came to write this book.

Well and movingly written, with fascinating accounts of conversations with those he encountered, it would be difficult to imagine a more suitable book to lend or give to young people who, disillusioned with the West, listen to siren songs from the East. One passage is especially moving. One day a monk in one of the monasteries was requested by the Master to read the Christian book to him. The monk read the Sermon on the Mount. The more he read the more the Master was impressed. "That's beautiful", he kept on saying, "That is very beautiful". At the end he said nothing for a long time. Finally, "Yes, I do not know who wrote that, but whoever he was, he was either a Buddha, or a Bodhisatva. What you read there is the essence of everything I have been trying to teach you."

J. Banks (Ed.), Reconciliation and Hope,
Says on Atonement and Eschatology,
Duckworth Press, pp.316, £4.00

This collection of essays on various aspects of the Atonement and Eschatology has been put together by an international group of like-minded NT scholars as a 60th birthday tribute to Dr Leon Morris, Principal of Ridley College, Melbourne. Readers of this JOURNAL will be more familiar with the works of Dr Morris himself (such as The Apostolic Preaching of the Cross; The Cross in the NT, and his NT Commentaries) than with the writings of some of the authors here represented. The essays make an erudite collection ranging over the fields that Dr Morris has made so much his own, particularly the meaning of the atonement.

It is difficult to review in any meaningful way such a wide selection of specialised subjects as this volume contains but perhaps a few comments may be allowed. Three of the essays are particularly interesting. The first is "The speeches in the Acts" in which F.F. Bruce develops the theme that Luke recorded them on the same principle as Thucydides, giving as nearly as possible "the general purport of what was actually said"; though Bruce includes his own suggestion that Luke may have used a form of shorthand (presumably for those few speeches which he actually heard in person).

"Paul's Understanding of the Death of Jesus" by James Dunn brings out the importance to Paul of the earthly life of and historicity of the man Christ Jesus, as representative man in contrast to Adam the representative of physical man. The significance of this doctrine for Paul's understanding of the atonement is that Jesus in becoming man shared in the lot of fallen humanity (Rom. 8:3), in "sinful flesh", which does not mean he shared his guilt but its fallenness, a distinction of great importance. Moreover, Jesus overcame this fallen nature in his resurrection and thus became representative of new man. The rest of this essay includes some thought-provoking comments on whether or not 'substitution' as it

is commonly understood in evangelical circles, really describes what Paul taught about Jesus' death. It would do preachers of the gospel good to read what the author has to say about this before they too glibly prepare their next evangelistic address.

The great virtue of the article by J. Davis McCaughey of Melbourne on "the Death of Jesus" is that after a masterly exposition of 1 Cor. 15 he shows what none of the other writers in this volume succeed in doing, namely that he is in touch with contemporary non-Christian thought in relating 'survival' after death, as commonly understood by classical as well as more modern writers (such as Dostoevsky and Camus), to 'resurrection of the body' he deals not with esoteric theological conundrums but with the problem close to us all. With its emphasis on the decline to zero point of hope in man's future, this essay is more obviously grounded in experience than any of the others. This is, after all, where theology must be both applicable and applies.

HEH

R.V.Sampson, Tolstoy:the Discovery of Peace, Heinemann, pp.205, 1973, £3.50.

This book is disturbing, challenging, antidemocratic, antitotalitarian and proChristian. It starts with the author's confession that, though he had thought war was wrong, WW2 found him convinced that the Nazis were unique in their evil ways and so "I went to war", saying to myself that I would have refused to go to any other war in history, but that this one was different." Events of 1956 (the Suez affair) when his own country seemed so clearly in the wrong, drove him to examine the causes of war more closely. He found in the Christian gospel and in Tolstoy's writings the answer he sought. Wars are fought because some men desire power and because most men are prepared to do what is expected of them, finding "their emotional security in conforming to the collective consciousness of the group with which they identify,

and from which they receive in return an important part of their identity as individuals. (On this second point, S. Milgram reaches the same conclusion in his recent Obedience to Authority, Tavistock, £2.50) The injunction, Resist not evil, cuts the ground away from under the legitimacy of the human will to power while Christian freedom is incompatible with a situation in which VIPs at the top treat those below as automata. (Witness the Cuban crisis, discussed in this book, in which Kennedy and Khrushchev both relied on absolute obedience "from large numbers — indistinguishable in this respect from machines — no matter how humanly atrocious the orders received by them." p. 189)

This is a scholarly book. The early part is historical, the ambivalence of Christians on war receiving especial attention. It is the same man, Martin Luther, who on different occasions wrote: "As concerns yourself, you would abide by the Gospel and govern yourself according to Christ's word, gladly turning the other cheek and letting the mantle go with the coat, when the matter concerned you and your cause"; and, on another occasion when speaking of a just war, "It is a Christian act and an act of love confidently to kill, rob, and pillage the enemy, and to do everything that can injure him until one has conquered him according to the methods of war. Only one must beware of sin, not violate wives and virgins."

Four chapters follow (2-5) in which the writings of de Maistre, Stendhal, Herzen and Proudhon, all four of them formative influences in Tolstoy's thinking, are analysed. A much longer chapter (6) follows which deals with Tolstoy himself: in this his great work War and Peace is the central theme.

For Tolstoy as for many others, the battle of Borodino brought the world face to face with the fact that in years to come wars would be won not primarily by bravery but by sophisticated weaponry and logistics. Tolstoy highlights the desire for power in a

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corrupt culture which rates power as the zenith of achievement. Captain Prince Andrew Bolkonsky "made friends with and sought the acquaintance of only those above him in position and who could therefore be of use to him." (p. 127) And so did others in War and Peace.

For the author as for Tolstoy the true reading of history is not that of the forces of freedom versus the forces of unfreedom, but the battle between evil and good. Evil consists of the will to power, expressed by coercion and domination of man by man: good the renunciation of that will and the consequent enlargement of the ability to love. "Not so with you", said Jesus, speaking of the power structure of the world (Luke 22:26).

This book is well worth reading. If the author's views seem visionary at times he is aware of it — and has his answer ready. His style, his erudition, his sheer familiarity with his subject, may make the book difficult for those who are not literary fans, but if the presentation had been less erudite would the book have been published at all? "To admit of no violence whatever as legitimate is to repudiate all politics, all power, and thus expose to the light of day the unwanted truth that the responsibility for ending the evils in the body politic rests inescapably on each one of us, who can only contribute to moral progress by mending his own life. Those who make this truth clear are apt to experience difficulty in getting their voices heard anywhere." (p. 200)

Marie Zimmermann, RIC 1, Documentation, Computer and Christian Communities, CERDIC, Univ. of Strasbourg, pp.418, PB, 150 French francs or 34 dollars.

This is the first volume of RIC now published belatedly. It provides a list of periodicals covered in the RIC computerized reference volumes (RIC 68-72) which

have been arriving of late in libraries, a list of religious publishers, a list of 100 bibliographical reference works, a "Thesaurus" in the form of a chart with many subsidiary charts which enable one at a glance to find the index numbers assigned to topics which combine different headings (eg. Jewish--Christian). There is also a history of earlier attempts to index theological literature and an explanation of how the present 1100-odd index words were chosen from a much larger number. The scope is international. The purpose is to provide ready access to information about Christian churches and institutions but it is not clear (at least to the reviewer) what further coverage is implied by the constant reference to "religious sciences". A useful feature is division of articles and books listed (in RIC 68-72) into very important / important / interesting. The work as a whole is an invaluable source of reference whilst the numerical system adopted keeps bulk to a minimum.

The document sent for review in isolation, is bewildering. There is nothing to say what RIC means (it means Repertoire des inst. chrétiennes); the puzzled reader is fortunate if he quickly discovers that the table of contents is placed at the end instead of the beginning; the headings and explanations are given in up to five languages in a strangely un-systematic way; there is no index and the English (except in the historical section) is often poor and sometimes borders on the unintelligible. Even the naming of the volumes seems curiously odd: RIC 66 covers the theological publications for 1968, but what does the "1" of "RIC1" mean?

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PART 3

The first part of this index was published in volume 44 and covers volumes 1 to 43 (1966 to 1971); Part 2 covers volumes 44 to 70 (1972 to 1978); Part 3 which follows (now much fuller than the previous indices) covers volumes 71 to 100 (1979 to 1985).

ABBREVIATIONS

Asterisk(*)—the first page of an article; c—correspondence; d—contribution to a discussion; f— and pages following (used sparingly; frw indicates that a further review by the same writer will be found in the pages ahead); n—note; ob—obituary; r—review; rw—writer of a review.

Volume numbers are underlined. In volumes 95 to 98 the paging in each separate issue starts again at page 1. In these volumes the issue numbers are indicated by parentheses. Thus 95(2)16 indicates page 16 of volume 95 part 2. Where a paper is followed by discussion and the discussion does not immediately follow after the paper, the page at which it starts is given by the number which immediately follows. Thus 85 35*107d indicates that the article referred to starts on page 35 of volume 85 and that the discussion starts on p. 107 with other matter intervening. If the discussion is in the following volume this is stated.

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