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FAITH AND THOUGHT

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

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EDITORIAL

This issue contains the Lectures given to the Victoria Institute on 6 Feb. 1971 by Professor F. H. Hilliard, Chairman of the School of Education, University of Birmingham, and by Mr. Peter Cousins, Head of the Department of Religious Studies at Gipsy Hill College. In our next issue we hope to include Lectures given to the Institute at University College on 22 May on **PRESUPPOSITIONS IN CHRISTENDOM.'**

Binding. The bulk of the copies of **FAITH AND THOUGHT** are "perfect bound", i.e. glued at the edges as in most paper back books. A limited number have however been stitched as in previous years and these have been and will be supplied to library subscribers without special request or extra charge. Any other readers requiring them should notify the Assistant Secretary.

Schofield Prize (see p 2). As previously intimated the closing date for entries has been extended to 1 May, 1972.

Erratum p. 10 lines 8-9. The words in parentheses were added as we went to press and are ambiguous. Tomasch reached a conclusion similar to that of Konigsmark and Murphy.

IN THE NEWS

How does God Create? - Herzl's Dream - Providence and Waste Disposal - Death - Education and the Supernatural - Genetic Engineering - Very Early Writers and Mariners - Science is Janus-like - Cosmology - Earthquake Control.

HOW DOES GOD CREATE?

Volume 5 of the *Minnesota Studies in the Philosophy of Science* (1970, Minnesota UP, £5) contains the usual assortment of learned and interesting papers originally given as lectures at a Conference. One of these is by Howard Stein ("On the Notion of Field in Newton, Maxwell and Beyond", pp 264-310) who discusses how Newton hit upon the idea of 'field' in physics. (The paper is mostly concerned with Newton, only towards the end, it seems, did the author remember that he had promised also to talk about "Maxwell and Beyond" but now his time had gone!)

For Newton, as for us, a major puzzle is to understand how God created the universe. How is the creation of matter possible: how can it be made intelligible, or even *thinkable?*

At a date unknown (the MS was published for the first time by A. R. and M. B. Hall in *Unpublished Scientific Papers of Isaac Newton,* OUP, 1962) Newton penned some thoughts on the subject.

He had no idea how even to start talking about creation out of nothing, so he asked instead how God might have proceeded if, after having created some matter, He wished to make more. To do this, thought Newton, three distinct stages would (or *might*) be necessary.

In Newton's day it was believed that the primary quality of matter, the quality which made it matter-like and which could not be further analysed, was impenetrability. Imagine, says Newton, that in a world already containing matter regions of space are so modified that no matter can enter them from without. Secondly allow these regions to move in accordance with the ordinary laws of motion pertaining to bodies. (Rather like 'holes' moving in p-type semiconductors!) Thirdly and

lastly let the impenetrable regions affect our senses (or be altered by our volitions) just as if they are ordinary matter. In the end (perhaps even without the last requirement), thought Newton, it would be difficult if not impossible to distinguish the regions from matter: it might be proper therefore to think of new matter as having been created.

Newton held that the two first stages were fully intelligible or at least imaginable: the third is not so, but the relation between mind and the 'holes' which it postulates is the same as that between mind and matter which, though not understood,is empirically established.

Stein thinks that we have here the idea of a 'field' theory similar to that developed much later by Maxwell and other scientists: in both regions of space are endowed with a property, even though the property is different. A strong positivist leaning is also evident: two things may be assumed identical if there is no way of distinguishing between them.

This is an interesting example of how theological thinking influenced a scientist. In later years a belief in creation also, apparently, led Maxwell to the discovery of the connection between entropy and information, which is the basis of modern information theory (see **FAITH AND THOUGHT**, 1967, **96**, (2), 3).

HERZL'S DREAM

For years now it has been fashionable to psycho-analyse the great men of history, some of whom have been worked on time and time again. In addition to the favourite subjects of Stalin and Hitler (both brilliantly executed) a recent book (B. B. Wolman, Ed., *The Psychoanalytic Interpretation of History*, Basic Books, 1971) takes up the case of Theodor Herzl (1860-1904), founder of modern political Zionism: it is written by Professor Peter Loewenberg of Los Angeles. Christians interested in prophetic fulfillment will find this well-documented chapter (ch. 6 pp 150-191) full of interest.

As a boy of 12 Herzl had a dream which influenced him all his life. "The King-Messiah came, a glorious and majestic old man, took me in his arms and swept off with me on the wings of the wind. On one of the iridescent clouds we encountered the figure of Moses... The Messiah called to Moses: it is

for this child that I have prayed. But to me he said: Go, declare to the Jews that I shall come soon and perform great wonders and great deeds for my people and for all the world."

As a young man Herzl sought means for validating the image of Jewry – he schemed to do so by duelling, by mass conversion of Austrian Jews to Catholicism and by journalism and play writing. The redemption of the Jews, with himself as a second Moses, a messiah, became a consuming passion." Am I working it out? No! It is working me... This is what was formerly called 'inspiration' " (p 163). For many years frustrations seemed endless: like Moses he lived in Midian. Then slowly ideas came. Yet he realised that even his intelligence had to be subordinated to his mission. "If I had exercised self criticism, as I do in my literary work, my ideas would have been stunted." His megalomania ("They will pray for me in the synagogues. But also in the churches"; "If I point my finger at a spot: Here shall be a city, then a city shall rise there.") often led him consciously to fear insanity, yet still he deliberately presevered.

In 1895 Herzl wrote *Der Judenstaat* and showed the MS to a close friend who, after reading a few chapters, suddenly burst into tears. "He thought that I had gone off my head, and since he was my friend he was touched to tears by my misfortune." Herzl was warned by the newspaper for which he worked that if he published his scheme for a Jewish State it would cost him his job. Despite such discouragements he went ahead and published it (1896). Western Jewry was not impressed but he quickly gained a huge following among Eastern Jews and political Zionism was born with himself as a messiah.

Like all doctrinaire psychoanalysists Loewenberg bespatters his pages with talk of phallic genitial phases, narcissism, homoeroticism and the like: in restoring Israel Herzl sought to remedy maternal fantasy damage; his inspiration was his ego regression... Take it or leave it! The story is fascinating enough without these largely ill-founded conjectures! Behind the scenes it may well be linked with the story which Dr. Brodeur tells in the article which we publish (p 93).

PROVIDENCE AND WASTE DISPOSAL

Christians have long believed that our earth was planned as an abode for man. In a naïve form we find this philosophy in medieval times when it seemed natural to suppose that for every disease God would have provided the remedy to hand – a view which interestingly enough led to the discovery of the salicylates (from *salix*, the willow, which grows where rheumatic fevers are endemic), still by far the most extensively used of all drugs.

In the modern era essentially the same belief took a new form – that God had made the universe in such a way that man could solve difficult technological problems. Thomas Edison is well known as a passionate adherent of this view which led him in the pursuit, for example, of a suitable filament for electric lamps. Thoughts of a similar kind were probably in Marconi's mind when he experimented to see if radio waves would curve round the earth's surface, after Poincaré and other experts had declared that this was impossible.

The coming of atomic energy poses a new challenge to this simple view of Providence. Vast quantities of energy are locked up in the atom but it is difficult to tap them without creating at the same time great quantities of unwanted radioactively 'hot' isotopes which are difficult to dispose of without causing dangerous and world wide pollution. If God intended man to develop this technology, would He not have provided some simple means by which, wastes, and not radioactive wastes only, could be disposed of harmlessly?

A year or two back the new tectonic plate theory of geology, now in vogue, seemed to point the way to a possible answer. Owing to the spreading of the sea floor, the plates crush into one another. Rising over the top of each other at the edges. Might it not be possible to dispose of waste by forcing it to descend with a descending plate? The objection is that this would be too slow a method, taking thousands of years at the least. Another suggestion is to fire wastes into space, directing them into the sun perhaps, but this is obviously impractical, except on a minute scale, and is too costly and dangerous.

A new idea has now been suggested which would seem to solve the difficulty quite simply. Oceanographers, studying the deep ocean trenches in volcanic regions have found, not the highly disturbed crumpled strata which they expected, but uniform flat sediments. The reason seems to be that the sediments are thixotropic (solid in the ordinary way, but becoming liquid under vibration). The vibration caused by frequent small earthquakes appears to be enough to liquefy them momentarily so that a flat layer of solid deposit results. If wastes are sealed in semi-permanent (say 50-year life) containers and left on the ocean floor in such localities, it is reckoned that after a few earthquake shocks they will have sunk a mile or so. Leakages will not matter, they will be permanently sealed far below the ocean bottom and incapable of causing contamination. (T.J.G. Francis, *Nature,* 1971, 233, 98).

DEATH

The hope that empirical evidence may throw light on the state of the dead seems as far from realisation as ever. An obvious line of attack it to ask those who have "died" to describe their experiences. Modern medical practice opens up the new possibilities here, for it is possible in certain cases to bring patients back to life after they have been unconscous for a long time and after their hearts have stopped beating.

The medical press (M. Dobson, *Brit. Med. Jour.* 1971, Vol. iii, 207-211) has recently recorded the results of questioning twenty such patients. No reliable information could be gleaned: those with strong beliefs merely felt that their beliefs had been confirmed. An atheist said, "there is nothing there"; a believer, "there seemed to be music and angels singing on the other side". Not one changed his or her views about religion as a result of the experience.

EDUCATION AND THE SUPERNATURAL

In the Western world it has long been taken for granted that education is the best antidote to superstition. In the dark lands of the earth, where superstition is rife, all that was necessary was a thorough academic training. Science was

taken to be particularly important in this respect: as science is taught so superstition will disappear.

In 1969 Gustav Jahoda put this presupposition to the test, using students of the University of Ghana as his guinea-pigs. It turned out that belief in witchcraft was not diminished by education and that, comparing faculities, those who studied science were as prone to put their faith in the witch doctor as those who studied humanities. In addition, no correlation was found to exist between low intelligence and belief in superstition. (*Nature,* 1969, 220, 1356).

Similar work is now reported from the University of Pennsylvania where a survey of graduate students was conducted by C. Slater and L. Routledge (*Nature,* 1971, 232, 278). Here the tests concerned not witchcraft but belief in the supernatural in general. Again it turned out that education had no effect: such belief was as widespread among the graduates as among the population at large and the scientists were, if anything, slightly more inclinded to believe than the non-scientists.

GENETIC ENGINEERING

In a recent book (*Genes, Dreams and Realities,* Macmillan, 1971) Sir McFarlane Burnet discusses possibilities of genetic engineering in the future. He gives reasons for thinking that these will never be realised. In view of the immense complication of the living organism in which every single cell contains the information of the whole, in which there is no master cell, it will probably be for ever impossible for mere human intellect, however aided, to master the complexity of the interrelations of the parts to the whole.

The author considers the various ways in which it has been proposed that some degree of genetic control might be exercised but though in theory some of them might be feasible, it is doubtful, he thinks if in practice they will ever be put to use. If they are, it will be by a master race who, by controlling their own genes, will keep all other races subservient. By then, the benefits of genetic knowledge he suspects will probably have been exhausted already. "A discovery once made is never made again. And it may well be that most of the discoveries

needed for practical medicine have been made. . . . the contribution of laboratory science to medicine has virtually come to an end".

All of which sounds plausible enough. It is however unduly reminiscent of the pronouncements of some of the physical scientists at the end of the Victorian era: physics was virtually exhausted, there was nothing more of importance to discover.

VERY EARLY WRITERS AND MARINERS

Until recently it was supposed that the earliest writings dated from about the middle of the third millenium BC. A few years ago discoveries of baked clay disks or seals on which incisions are present were made in Bulgaria; these date from BC 4000 at the latest (*Antiquity,* 1968, **42**, 32) More of these incised disks have since been found and experts seem agreed that, if the marking does not constitute writing in the ordinary sense of useful information storage, it undoubtedly consists of ideograms or pictographs, (*Nature,* **230**, 552; for reproductions see *Arkheologiya,* 1970, 12, 3, 7). It is beginning to look as if writing started in the Balkans not later than BC 4000 and possibly much earlier.

A Birmingham team have recently studied obsidian impliments found in Greek caves dated by C-14 as human settlements of BC 6,500 or earlier. Fission track dating shows that the obsidian came from the Aegean island of Melos showing that there was sea trade between this island and the mainland 1500 years before the earliest maritime trade previously known (*Nature*, **233**, 242).

Both of these findings seem to relate to the pre-flood era and confirm the high degree of civilisation of man at this time as depicted in the Bible.

SCIENCE IS JANUS-LIKE

An interesting article in *Nature* (Hilary Rose, **229**, 459) discusses the Janus-like quality of science as seen by the young of today. A generation ago science was all the rage: "My grandfather preached the gospel of Christ, my father preached the gospel of socialism, I preach the gospel of

science" wrote the Editor of *Nature* in 1930. Science was to save man's mind from superstition and fear; his body from disease and hunger. It would turn deserts into gardens and make two ears of corn grow where one grew before.

The modern generation appreciates the benefits, but wonders if they are not neutralised by the new problems which science creates. For the novelist Brigid Brophy science has itself become the bloodiest superstition in history. For the social philosopher Jacques Ellul (*The Technological Society,* 1965) we are reaching the point where each technological solution creates a new problem in its wake. The car improves travel in the city but soon chokes the roads; psychology leads to the understanding of man but points the way to brain washing. Teller, imbued with the technological sweetness of the H-bomb cannot conceive of objections to outweigh the case for its manufacture.

The biologist G.A. Borgström (*Too Many,* 1969) writes in a not dissimilar vein. He wonders if large scale technological tampering with nature will ever break even. He cites the case of the Aswan High Dam in Egypt which, by encouraging the snails which harbour the disease, is infecting entire villages with *bilharzia,* and also upsetting established fisheries near the mouth of the river and lowering yields of crops which previously depended on river silt and annual flooding of the land. (An interesting article on the subject has also appeared in *The Plain Truth*, Feb. 1971).

Recent developments create doubt, even, about the reasonableness and objectivity of some scientists. The raging controversy about the relative IQ's of whites and black in America is proving highly acrimonious. In December 1970 Teller lectured at the American Association for the Advancement of Science. Placards proclaimed him as a war criminal: for safety he was protected by five gunned bodyguards. The veteran biologist Albert Szent-Györgyi stated publicly, "Because science is used for war we have lost the respect of the people and there is revulsion against scientists" (*Nature,* 229, 81). Similar statements have become common place.

COSMOLOGY

The perennial argument between the upholders of the evolutionary (big-bang) and steady-state theories of the universe continues unabated. Fred Hoyle introduced the stready-state theory largely because he found creation 'aesthetically' displeasing: "It is against the spirit of scientific enquiry to regard observable effects as arising from causes unknown (and unknowable) to science, and this in principle is what creation in the past involves"[1]. However, the steady state also involves creation, even if 'continuous', from causes unknown and apparently unknowable.

In recent years the theory of a creation in the past has led to the prediction of a number of important observations. (1) Lemaître predicted the expansion of the universe, later confirmed by Hubble; (2) the fall of star density with distance, confirmed by Ryle; (3) the background radiation predicted by Gamov, found by Penzias and Wilson, 1965; (4) the presence of about 25% of helium in stars, later confirmed[2].

Another argument in favour of the evolutionary universe is that it is difficult to understand how galaxies or other very large masses of matter (such as quasars, if this is their correct interpretation) could condense in an expanding medium. They could, however, be accounted for if they originated in the *ylem* (the name Gamov gives to the original fire-ball); irregularities condensing into galaxies are also possible at a later stage in an evolutionary universe (a result described as "another blow to the surviving advocates of steady-state theories"[3]). A BBC world survey of views of astronomers[4] showed fairly wide acceptance of the evolutionary view of the universe. Even those who do not hold it agree that it is at present favoured by observational evidence.

The evolutionary or explosion theory, unlike the steady-state theory, leads one to expect a deceleration in the velocities of very distant objects. No convincing results on this point are yet available.[5]

An interesting if difficult paper by Professor W. H. McCrea[6] summarises some recent mathematical developments in cosmology. He asks whether, in view of these, there is not an almost inevitable "must" about discovering the 'big-bang'; a discovery which, he argues, is highly insensitive to initial

assumptions. He raises many interesting points – one being that "any notion that the physical universe came into existence according to certain physical laws – which it, so to say, found waiting for it to obey – seems to be unacceptable": it follows that the laws of physics as we have them "permit almost nothing to be said about the 'start' of the universe" (Cf. Heb. 11: 3).

The background temperature continues to attract interest. Measurements give 2.7 K at wave lengths from 7 cm to 8.5 mm. Theoretically this should remain the same at all wave lengths but in the infra-red range there is a rise in the apparent temperature[7] which may, however, be due to spectral lines superimposed on the background.[8]

It is interesting that the background radiation seems to provide an absolute standard for motion in space: the velocity of the solar system through space (so defined) is found to be about 400 km/sec.[9] These and one or two other developments may make the current 'relative' view of position in space hard to maintain.

There is much speculation as to why our universe is made of ordinary matter (*koinomatter*): why not *antimatter?*, or both? Alfvén[10] discusses earlier views in a most interesting way. One suggestion is that both kinds were present at the start in the ylem: after mutual annihilation the slight excess of baryons (heavy particles of ordinary matter) alone remained behind.[11]

REFERENCES

(1) *Mon. Notices Roy. Ast. Soc,* 1948, **108,** 372. (2) See *Astrophysical Jour.,* 1967, **148,** 3; *Nature,* **229,** 301 etc. (3) *Nature* 1969, **224,** 108; (4) N. Calder, *The Restless Universe,* BBC, 1970; (5) *Nature,* **223,** 9; (6) *Nature* **228,** 21; (7) *Nature* **226,** 111); (8) *Nature,* **230,** 17; (9) *Nature,* **231,** 516; (10) H. Alfven, *Worlds and Anti-Worlds,* 1966; (11) *Nature,* **230,** 26.

EARTHQUAKE CONTROL

The Christian belief that man is called upon to control the world (Gen. 1: 28) suggests the possibility that man can exercise control over many events which have previously

been regarded as beyond his capability. Of these earthquakes at once come to mind.

Earthquakes occur when strains in the earth's crust reach a threshold beyond which fracture will result. The question therefore arises as to whether it is possible to relieve these strains gradually by artificial means, so stopping sudden destructive releases.

Two methods by which this might be done have now come to light. Underground nuclear explosions in Nevada have shown on occasion that energy released may greatly exceed that of the explosion itself, which points to the relief of natural strains. As expected, this is found especially in the hardest rocks: in soft rocks, salt deposits etc. where natural strains cannot accumulate to any great extent, the energy released corresponds roughly to the explosion energy. In addition, it has been observed that some time after a firing small shocks occur ten or more km. away from the explosion zone, thus indicating the possibility of relieving natural strains in a local area. As a method of earthquake prevention the method is certainly hazardous. (*Nature* 232, 520) There is also the risk that a nuclear explosion might precipitate a serious quake, a possibility which has been taken seriously in the past, though the connection between destructive earthquakes and test explosions taking place hours or days beforehand has not been confirmed (*Science,* 1970, **169**, 176).

Another possibility is that of fluid injection. It has been the practice to dispose of certain dangerous industrial wastes by pumping them down boreholes 10,000 feet or more in depth, but the practice has produced seismic activity along previously inactive faults. However, it appears that the pumping of water into boreholes might serve to release strain gradually in areas where there are potential faults (*Nature* 232, 448). In geothermal areas where hot geothermal water reaches the surface, Ward and Jacob (*Science,* 1971, **173**, 328) have made good use of microquakes to map faults.

DAVID D. BRODEUR

Israel and the Sovereignty of Jerusalem

The Victoria Institute does not often discuss prophecy. The year – day theory, so ingeniously elaborated by Dr. Gratton Guinness and others a generation or so ago, is rarely remembered today. Many though not all of the predicted dates have come and gone uneventfully. Now Dr. Brodeur comes up with the startling theory that we modern Christians have failed to see the significance of an event of vast importance. He sees the 'six-day war' as the end of the 'times of the Gentiles' and argues that it happened exactly at the time appointed.

The capture of Jerusalem on June 7, 1967, marked the beginning of a new era in the fortunes of the State of Israel. Jews and gentiles of as many hues as Joseph's coat discerned quite readily the Messianic implications of the unprecedented six days of victory: June 5-10, 1967. The victories included the Jewish capture of the Old City of Jerusalem, the remaining alienated lands west of the Jordan, the Sinai peninsula in its entirety and the Golan Hills of Syria. This swiftest and most far reaching series of conquests in three milleniums of Jewish occupance of ancient Hatti-land (Philistia-Canaan) almost instantly extended Israel's borders to a closer approximation of the spheres of influence of the Davidic–Solomonic kingdom than any subsequent Jewish colony, commonwealth or kingdom achieved, including that of Alexander Jannaeus.

Each of Israel's latter day victories, beginning with the Independance War of 1948-9, has been more far reaching than the previous. While the early years of this century-old

return were marked by severe hardships, an inexorable kind of progress is summed up in the recitation of its notable dates recording land grants, proclamations, settlements and military actions: 1869-70, 1878, 1882, 1897, 1909, 1917. 1948-9, 1956, 1967.[1]

Twentieth century Israel appears certainly to be the unfolding of Ezekiel's prophecy, the resurrection of the Valley of the Dry Bones (Ezek. 37: 1-15). What had been undone by 'God's servant' Nebuchadrezzar is being restored before the eyes of the world. Yet history can no more repeat itself than time can run backwards. Israel's unique history can only be explained intelligently in the light of Biblical prophecy. History has even now established that a large part of Biblical prophecy has been fulfilled in what has happened to Israel, the land and people.

The Roots of Zion's Alienation

The electrifying events of 1967 appeared in history like some creation week consummation, with all the blessings of Lev. 26: 8-9 which exults: 'Five of you shall chase a hundred, and a hundred of you shall chase ten thousand . . . I will confirm my covenant with you'. But the restoration only invites us to ponder the Diaspora and to search for its significance.

Study of the long history of non-Jewish occupations of Eretz Yisrael invites a pause at 609 B.C., when the land came under an Egyptian hegemony following the death of Josiah, in battle, at Megiddo. Hardly four years later, Egypt experienced an enormous defeat at Carchemish and as a result the Holy Land fell under the Babylonian hegemony. Careful examination of Old Testament prophecies justifies a distinction between certain compromises in the Jewish sovereignty prior to Josiah (the last righteous king that Jewry had), that could be rectified by prayer and repentance before Yahweh, and the compromises effected by Nebuchadrezzar between 605 and 588 B.C. that drew forth no national repentance from the rump kingdom of the Jews or from its leaders.

The national sins of the southern monarchy had in fact been steadily accumulating ever since Rehoboam took office as its first sovereign. On one side hung infidelity to the Torah, and in particular to the Holiness Code (Lev. 26). On the other side, the backsliding of Jerusalem strained the precarious, off-setting balance in the scales of divine justice. Then in time the delicate balance was destroyed under the long reign of the immoral Manasseh.[2] So much so in fact that by the end of the seventh century before Christ the nation was ripe for judgment, for despite the belated purges of Josiah, the sins of Jerusalem – sun worship, promiscuity, child sacrifice and even murder of Yahweh's prophets and the substitution of false prophets – continued as before (Ezek: 8: 9; 22: 1-12). Even though the predicament of King Hezekiah in Jerusalem before the menace of Sennacherib was resolved by the King's prayerful petition to Yahweh, who answered with marvelous deliverance, the apostacy and hardness of heart of Judah's last three sovereigns is illustrated by the rebellion of Zedekiah who adamantly and repeatedly refused to heed the prophet Jeremiah. Zedekiah's resistance led directly to the destruction of the monarchy, the temple, and the Holy City.

Yahweh thus spoke: 'Judah also will I banish from my presence . . . as I banished Israel; and I will cast off this city of Jerusalem which I once **chose**' (II Kings 23: 27). It began, this well measured end of Judah, in the year 605, 'In the fourth year of Jehoiakim, son of Josiah, king of Israel (that is in the year of Nebuchadrezzer king of Babylon)' (Jer. 25: 1). In that year, 605, Yahweh said to his prophet:

> If each of you will turn from his wicked ways and evil courses . . . then you shall live forever on the soil which the Lord gave you and to your forefathers . . . But you did not listen to me . . . Therefore . . . I will send *my servant Nebuchadrezzar* king of Babylon. I will bring him against this land and all its inhabitants and all these nations round it. (Jer. 25: 5-9).

Retribution indeed swiftly followed upon the oracle. Nebuchadrezzer came to Jerusalem in 605, during the late spring or early summer, and took the temple vessels and several of

the princes as hostages, among them the prophet Daniel (Dan 1: 1). At least two times more Nebuchadrezzer visited Jerusalem, early in 597 and at the beginning of 588. Each visit proved to be more destructive than the last. As a result of his final siege Jerusalem was left a heap of ruins, the productive capacity of the land devastated, the people taken into captivity except for a few tillers and overseers.

Simulacrums of Sovereignty

That Jewish sovereignty was not restored to the Jews by Yahweh after Babylon's fall, in 539, shortly after which the seventy years captivity prophecied by Jeremiah ended, is Scripturally confirmed:

> Those who escaped the sword he took captive to Babylon and they became slaves to him and his sons *until the sovereignty passed to the Persians,* while the land of Israel ran the full term of its sabbaths. All the time that it lay desolate it kept the sabbath rest, to complete the seventy years in fulfilment of the word of the Lord by the prophet Jeremiah. (II Chron. 36: 20-21).

This passage makes clear that while a seventy year period of land rest was paid in full, the control of the land and its inhabitants by aliens continued. Apparently Yahweh wanted to test His People further in order to win their hearts as well as their lips. The political conditions of the Judaic remnant that returned from Babylon is succinctly stated by Abba Hillel Silver who writes: 'During the Persian period, Judah continued as a semiautonomous province within a Persian satrapy and covered a very small area'.[3] This is hardly a definition of independence, sovereignty or self-determination.

Similarly, it can hardly be said that the Maccabean times were times of a national Jewish sovereignty over Eretz Yisrael, from 'Dan to Beersheba'. The Hashmonian successions reached their territorial apogee under the despot Alexander Janneus (Heb: *Jannai*) between 103 and 76 B.C.[4] Yet Janneus apparently did not succeed in wresting Ascalon and its hinterland from its Ptolemain overseers. Neither in fact did he

conquer any of the coast above Carmel, much of north-western Galilee remaining beyond his control. The short lived state bequeathed by Janneus was but a substantial fragment of Israel of Genesis promise and not to be compared with the the sovereignty of Israel since 1967. In utter contrast to former restorations of Jerusalem to Jewish participation or control (Cyrus, Judas Maccabeus, Edmund Allenby) the restoration of 1967 was effected solely by a Jewish action undiluted by foreign ally and unfettered by alien hegemony.

Therefore, it becomes painfully obvious that an *absence* of sovereign self determination in political life was the constant condition of the Jew in Eretz Yisrael from the first visit of Nebuchadrezzer, in 605 B.C., even to the establishment of the State of Israel in 1948 A.D. This tormented fettering of Jewish life in the Holy Land was the great, negative common denominator of the Jewish political and civil existence for no less a period than two and one half milleniums.

The Period of Alienation Foretold

One wonders if there can be found in Scripture, so voluminous with prophecies fulfilled and yet to be fulfilled, any positive or precise description of such an immense period of discontinuous Jewish occupations in Jerusalem and in the Holy Land? Leviticus, chapter 26, presents both outline and description of the peculiar period and even gives a logical key to the very length of the period. Chapter 26 is of course the great peroration to the Holiness Code – a series of solemn promises and equally solemn warnings. In this peroration peace and abundance are forecast as the fruits of obedience to Yahweh's commandments; while wars, desolations, famines, terrors, and *exiles* are to be the harvest of continuous disobedience. A sample:

> I will bring war in vengence upon you, vengence irrevocable under covenant; you shall be herded into your cities, I will send pestilence among you, and you shall be given over to the enemy. (Lev. 26: 25-26).

This harsh description of all that actually befell the Jewish colonies and commonwealths from Darius Hytaspes down to the second Roman dispersal is prefaced by a passage which contains a number. This number, or cypher, is repeated no fewer than four times and in a context that exhibits little variation. A sample:

> If after all this you have not learnt discipline but still defy me, I in turn will defy you and scourge you *seven times*[5] for your sins. (Lev. 26: 23-25).

Precise details of the future degradation of the dual monarchies and post-monarchical existence in the Holy Land was revealed to Moses. The following passage (which no authority can prove is of post-exilic origin) foretells the nature of Jewish religion and existence for nearly the next two and one half milleniums after the fall of Babylon:

> Instead of meat you shall eat your sons and daughters. I will destroy your hill-shrines and demolish your incense-alters. I will pile your rotting carcasses on the rotting logs that were your idols, and I will spurn you. I will make your cities desolate and destroy your sanctuaries; the soothing odor of your offerings I will not accept. I will destroy your land, and the enemies who occupy it shall be appalled. I will scatter you among the heathens, and I will pursue you with the naked sword. (Lev. 26: 29-34).

During the siege of Samaria in the time of Elisha, Jewish children were eaten by their starving parents (II Kings 6: 28-29). A generation later, Hezekiah became the first Judean King to destroy at least some of the *Bamot,* the idolatrous high places. Evidence that he did not destroy all of them is found in II Kings 23: 8-20.

With the scourge of Nebuchadrezzer, Yahweh's chosen instrument, all the judgments of Leviticus 26 began to come to fulfillment, and none of the blessings. The hill shrines and incense alters were rooted out of Jewish consciousness forever. 'Tender hearted women . . . boiled their own children; their children became their food in the day of my people's wounding' (Lam. 4: 10-11). Leviticus 26: 33 noted that the

enemies who occupy the land will be 'appalled' by the destruction. Lamentations confirms that Jerusalem's fall was 'beyond belief' (Lam. 1: 9).

Keil and Delitzsh termed this the 'fourth and severest stage' of the aggravated divine judgments. While these two great commentators thought that the series of judgments was not to be understood 'historically', they also saw that 'these divine threats embrace the whole of Israel's future (and) . . . correspond in every case to the amount of the sin, and only burst in upon the incorrigible race in all the intensity foretold, when ungodliness gained the upper hand'.[6] They noted that the eating of offspring occurred again in the Roman war of extermination under Titus.[7] They might have mentioned also that the abominable practice was predicted by Ezekiel about the 30th year of the prophet's captivity (Ezek. 5: 10).

It has been recognized that in pre-exilic times the religious unity of the Hebrews was essentially tribal and familial - not individual. A concept of salvation and after-life did not become firmly rooted in Jewish life until sometime after the return from Babylon. For centuries Yahweh was constrained to speak to His people in terms that they could readily understand - peaceful occupance of the land when they obeyed; terrors, wars and famines when they disobeyed. The sermon of Leviticus 26 speaks therefore of a national punishment, one of the land and the people. Yahweh still remained true to the covenant He made with Abraham and which He renewed with Isaac and Jacob. He would eventually assure Israel through His prophet: 'but I will not make an end of you, though I will punish you as you deserve, I will not sweep you clean away' (Jer. 46: 28).

The above passage reads in both the King James and JPSA translation: 'but I will not make a full end of thee, but correct thee in measure'.

Up to now, most commentators on Leviticus 26, including Kiel and Delitzsch, have failed to appreciate that Israel's days could be controlled by Yahweh in a manner consistent with *sheva* (seven) or the seventh day rest.

There is simply no valid justification to interpret parts of the Scripture allegorically or metaphorically and other portions literally. Yahweh is more than capable of combining both the literal and the abstract in a single verse or number in a single parable or prophecy. The Scriptures, including the words and parables of Jesus, abound with such examples of dual meanings and fulfilments.

New Testament Confirms the Old

After somewhat more than six centuries of vassalage to various powers, Israel witnessed the advent of Jesus Christ who spoke unflinchingly of terrible times that were yet before the Jews. He said:

> But when you see Jerusalem encircled by enemies, then you may be sure that her destruction is near. Then those who are in Judea must take to the hills; those who are in the city must leave it, and those who are in the country must not enter; because this is the time of retribution, when all that stands written is to be fulfilled. Alas for women who are with child in those days, or have children at the breast! For there will be great distress in the land and a terrible judgment upon this people. *They will fall as the sword's point; they will be carried into all countries; and Jerusalem will be trampled down by foreigners until their day has run its course.* (Luk 21: 20-24).

This notable passage is part of a longer oration which concludes with descriptions of signs in the heavens denoting the approach of the last days before the Messiah's coming. As with much of prophecy, several time-frames are apparent. The first portion speaks of the destructions and deportations of Titus which came about forty years after the words were uttered. A somewhat longer time-frame alludes to the actions of Hadrian's legions in 134-35. These events brought further destruction to Jerusalem and ended with massive deportations and the rooting out of the words Jerusalem and Judea from the lexicon of the Roman occupants.

Just as unmistakably, the prophecy refers to yet unfulfilled events in Israel, events which many exegetes feel will culminate in Dan. 9: 27, Zech. 12: 14 and Revelation 16: 16, the Battle of Armageddon.

In Jerusalem's 'trampling down' indeed began with the final siege of Jerusalem by Nebuchadrezzar in early 588 B.C. there must be some Biblical evidence to bring forth support for a conclusion that *seven times* of trampeling down by foreigners terminated in June, 1967. Before this can be determined it is worthwhile to examine, very briefly, the evidence of how the siege of 588 began. The major but not exclusive source of this period is the Book of Jeremiah.

The Beginning of the Alienation

The first visit of Nebuchadrezzar to Jerusalem in 605 did not overturn the Judean monarchy. But the Judean king, Jehoiakim, was nonetheless forced to pay tribute to Babylon. Toward the end of 598, Nebuchadrezzar again advanced upon the land, possibly delayed by battle reverses with Egypt. He captured Jerusalem on March 15-16, 597, waiting until the New Year (April 13) to install a new king, Mattaniah, renamed Zedekiah.[8]

Nebuchadrezzar surely mocked the Judean monarchy with the capture and banishment of Jehoiachin (Jehoiakim having been killed and thrown outside the city gates by a panicy faction at the end of 598). The exile of the foremost citizens the nobles and leaders left a party firmly in control that was favourable to Egyptian intervention against Babylon. Informed of revolt, Nebuchadrezzar entered upon the land once again, in late 589, but this time with a more deadly purpose than upon any previous visit. He apparently came to destroy the kingdom and to banish its people. So drastic a punishment was justified in the Babylonian's eyes because Zedekiah had willfully broken his solemn oath of allegiance to Nebuchadrezzar (Ezek. 17: 13, 18).

Josephus tells us:

> After maintaining his alliance with the Babylonians for eight years, Sacchias broke his treaty with them and went over to the Egyptians, hoping to overthrow the other side. And, when the Babylonian king heard of this, he marched against him and, after ravaging his country and taking his fortresses, he came up against the city of Jerusalem itself to besiege it. But when the Egyptian king heard of the plight of his ally Sacchias, he raised a large force and came to Judea to end the siege. Thereupon the Babylonian king left Jerusalem, and went to meet the Egyptians and encountering them in battle, defeated and put them to flight and drove them out of the whole of Syria.[9]

Josephus then tells us that the king of Babylon marched a 'second time' against Jerusalem and 'encamped before it, besieged it with the utmost energy for eighteen months'.[10]

This reference to a second time can only refer to the resumption of the interrupted siege, because Josephus has described two earlier sieges already, the first in Jehoiakim's reign (605) and the second in Jehoiakin's reign (597).

In attempting to equate the instant of Nebuchadrezzar's return to resume the interrupted siege with the chronology given in the correlative passages of II Kings 25: 1, Jer. 39: 4 and 52: 4, Josephus is plainly in error. The clear inference of these three passages in that Nebuchadrezzar arrived *initially* in the ninth year, tenth month, and tenth day of that month of Zedekiah's reign: that is, between January 5 and January 15. 588 B.C.[11]

Many scholars think that the Pharaoh caused the siege to be interrupted just after this date and not before.[12] In any case Ezekiel is most emphatic when he writes: 'These were the words of the Lord, spoken to me on the tenth day of the tenth month in the ninth year: Man, write down a name for this day, *this very day;* this is the day the king of Babylon invested Jerusalem' (Ezek. 24:1).

The largely non-dated later oracles of Jeremiah (chaps. 21, 33-34, 37-38) reflect a non-sequential chronology that makes it impossible to determine the exact time beyond which Yahweh can no longer offer to Jersualem and Judah opportunity for divine deliverance. Chapter 34 offers the possibility

that the oracle of doom without options or qualifications was uttered (vs. 2-3) ' . . . when Nebuchadrezzar king of Babylon (is) . . . fighting against Jersualem and *all* her towns' (vs. 1-2), that is, very early in the siege which began January 15, 588.

In any event, chapter 34 clearly states that the oracle was conveyed to Zedekiah while the Jewish fortresses of Lachish and Azekah still held out (vs. 6-7). Unqualified doom is conveyed in even stronger terms (vs. 17-22) while Nebuchadrezzar has lifted the siege in order to meet the Egyptians (vs. 21).

It is still not known for certain how long it took Nebuchadrezzar to vanquish Judah's ally led by Pharaoh Hophra. Some scholars think that the Ezekiel oracles (chaps. 29-31), which are fixed to that prophet's captivity date (March 16, 597), suggest that the intervention of the Pharaoh spanned most of the winter and spring of 587. This may be so, but there are difficulties which have not been convincingly answered.

Turning to Jeremiah chapter 37 we find the lifting to the siege referred to several times (vs. 5, 7-9, 11) and learn that Jeremiah is first imprisoned just after Nebuchadrezzar has gone away. After many days in prison (vs. 16-17) he is interviewed by Zedekiah and boldly tells the king what is about to happen. In chapter 34, which refers to the same period while the siege is lifted, we find Jeremiah transmitting a doom oracle from a Yahweh angered by the revocation of a proclamation that Zedekiah had recently made freeing the Hebrew slaves of Hebrew freeman residing in the besieged Holy City (Jer. 34: 8-22).

Still later when Jeremiah is confined to the court of the guardhouse (following his rescue from the mirey well) he is again interviewed by the king. Surprisingly, the prophet delivers an oracle promising deliverance of the city conditioned upon immediate surrender of Zedekiah (Jer. 38: 17-18). The oracle demonstrates Yahweh's eternal willingness to renew opportunities for repentance by fallen man, but Zedekiah buries it under false pride (vs. 19).

In ignorance of the exact date when this oracle was delivered, we can but speculate as to whether it was delivered

before or after the resumption of the siege. History only records that the reappearance of Nebuchadrezzar before the walls of Jersualem finally sealed the fate of the Judean monarchy and led to the destruction of the Temple and the Holy City.

A Cypherment of Leviticus 26

Convinced that the Six Day War of June, 1967, had achieved for Israel and Jerusalem a status that the Holy City had not enjoyed since the last days of the Judean monarchy, the writer investigated the cryptograms of the Old and New Testament. He concluded Leviticus 26 embodies a comprehensive description of the peculiar nature of Jewish occupance of the Holy Land during the Diaspora, the first seventy years captivity (Jer. 25: 11; 29; 10) of which was the prologue of a much longer period.

Leviticus 26: 25 speaks of a period of 'seven times' of judgment. Numbers 14: 34, Ezekiel 4: 6-7, Daniel 8: 26, and Revelation 11: 1-3, taken together, justify the conclusion that one prime key to prophetic time-measurement is the substitution of *shanah* (year) for *yom, yamin* (day, days). This is made particularly clear by Numbers 14. While a considerable body of literature has arisen in England over the past few centuries in support of an interpretation that one 'time' *(paam)* is 360 years, as inferred by Revelation 11: 1-3, nothing in Revelation's Judgment on Jerusalem (which bears a tone so strikingly similar to the Judgment of Ezekiel 4: 1-7) excludes the application of a prophetic 'time' to a *solar year in which each day is a year.* There is ample room for both interpretations.

Consistent with the Mosaic law and ritual. Leviticus 26: 25 indeed was prophecying of a great Levitical Week of Years; that is, a year of days of years. This great *sheva*, or seven, day-years is no less a period than 2556.6954 years (365. 2422 x 7).

When this cypher of Leviticus 26 is applied to the end-date: June 6-7, 1967, the date arrived at is March 7, 588 B.C. This is derived, as follows:

$$\begin{array}{r} 2556.695 \\ -\ 1966.433\ (\text{A.D.}) \\ \hline 590.262\ (\text{B.C.}) \end{array}$$

Unadjusted for the Christian calendar error, the date is March 7, 589. However, one year must be omitted from the span of years to compensate for the 'O' B.C. - A.D. fiction.[13]

The adjusted date now reads: March 7, 588 B.C., a possible beginning date of the *resumption* of the final siege of Jerusalem by Nebuchadrezzar. The resumption of the final siege of Jerusalem may have marked the point beyond which it became impossible for Yahweh, in His integrity, to allow Jerusalem to remain in the possession of His people. Zedekiah's belated attempt to escape at the end of the siege, his capture and blinding of Nebuchadrezzar, reflects the great severity of the divine judgment upon Jerusalem.

When the divine sentence of a forfeited independence had been completely served, June 6-7, 1967, appeared witnessing the termination of Yahweh's *seven times* of indignation against Jerusalem. The comprehensive events embraced by June 5-10 translate into the fuller restoration of Yahweh's sovereignty over the Holy City and much of the remainder of the Promised Land to His people Israel.

The Historic Islamic Claim to the Temple Mount

Pathos and irony abounded in the words of King Hussein when the proud Jordanian monarch told an American audience in Washington D.C., some two years after Israel's capture of Old Jerusalem ' . . . any plan for withdrawal must include our greatest city - *our spiritual capital,* the holy city of Jerusalem. To us - Christian and Moslem alike - Jerusalem is as sacred as it is to the Jews. And we cannot envisage any settlement that does not include the return of the Arab part of the city of Jerusalem to us *with all our holy places*'.[14]

The pathos in the plea of Hussein was that he brought the loss of Jerusalem upon his country by his own decision. The irony was in fact that the holy places of which he spoke inspired Muhammad and his successors precisely because

they were, in the first place, Abrahamic and Israelitic holy places.

Even a superficial examination of the Koran (Quran) reveals it to be unabashedly based upon the Hebrew Old Testament. A closer examination of the holy book of Isalm shows it to be a fairly skillfully disguised diatribe against Judaism and the most fundamental tenet of Christianity. Throughout the Koran Hebrews and Christians are referred to as the 'People of the Book'. One reference reads:

> It was He (Muhammad) that drove the unbelievers among the People of the Book out of their dwellings into the first exile.[15]

This reference is an allusion to the Prophet's expedition against the Jews of al-Nadhir of Arabia whom he reduced and drove out in 626. Further on, we read:

> He brought down from their strongholds those who had supported them from among the People of the Book and cast terror into their hearts, some that you slew and others you took captive.[16]

This passage is believed to refer to the Jewish tribe of Banu Qurayza which Muhammad raided, beheading 800 of their males (one abjured his religion to be saved). The incident took place in 627. In 629 the Jews of Khaybar were decimated by the Prophet and in 630 he took Mecca from his fellow Arabs. As Guillaume notes, by denying the divinity of Christ, Muhammad brought peace to the Arabian peninsula which had been repeatedly torn by the dissention of Christological disputes. 'But the price was the unconditional surrender of the essence of Christianity'.[17]

The Koran reflects constant attempts to cast doubts on the teachings of Christ and Judaism. One example:

> Believers, take neither Jews nor Christians for your friends. They are friends with one another. Whoever of you seeks their friendship shall become one of their number. Allah does not guide the wrongdoers.[18]

Throughout the Koran Muhammad presumes to judge the Jews. He states:

> Those of the Israelites who disbelieved were cursed by David and Jesus, the son of Mary: they cursed them because they rebelled and committed evil and never restrained one another from wrongdoing. Evil were their deeds.[19]

Islam has been both a religious and political persecutor of the Jews since the Hegira. When Muhammad died, in 632 A.D., he was preparing for an invasion of Palestine to drive the Byzantines from the Holy Land. His first successor, *(Khalifa)* was Abu Bakr, who died in 634. Already, by that year, Arab bands were raiding and terrorizing the unfortified towns and hinterlands of Palestine. The chronicles of that year show that the Christian ethnarch of Jerusalem, Sophronius, was not able to make his annual pilgrimage to Bethlehem on Christmas Day because of the Arab-Islamic menace.

After the Byzantine debacle on the Yarmuk, in late August, 636, the followers of Islam, now under *Khalifa* Omar, chased the survivors up to Jerusalem, laying siege to the Holy City. Sophronius is reputed to have expired, of heartbreak, soon after giving the city in formal surrender to Omar, early in 639.[20]

Omar instituted a policy of tolerance to the Jews, but this was short lived. In 681, *Khalifa* Yazid imposed a head tax on the Samaritan Jews who chose not to vacate Palestine. A permanent Islamic insult to the Temple Area crystallized (688-92) with the completion of the still extant monumental ciborium, the so-called 'Dome of the Rock', whose interior inscription candidly reveals its purpose: a politico-religious symbol of the 'final victory of Islam over the People of the Book.'[21]

The builder of the Dome of the Rock was Abd al-Malik, fifth *Khalifa* of the Umayya family of Muhammad's Mecca tribe of the Quraysh. Abd al-Malik had the splendorous octagonal monument inscribed with three basic themes: (1) that God is without heirs - a deliberate denial of Christ's claim of Sonship, (2) that Muhammad was God's greatest apostle - an attempt to usurp Christ's power and authority, and (3) that the mission of Islam is to convert the infidel, both Jew and gentile. This also constitutes a usurption of Christ's command: 'Go ye out into all the world . . ."

The Dome's carefully contrived symbolism in all strives to preempt not only the spiritual and historical claims of Christians but also those of the Jews. Erected over the rock on Mount Moriah from which by tradition Abraham was caught up into heaven, the Dome intended to convey more graphically the Koran's assertion that Abraham was not a Jew (which ethnically is true enough) but rather a devout Moslem! Islam, by this bold stroke, attempted to nullify Israel's lineal and spiritual descent from the one with whom God made His first personal Covenant.

The long Islamic sovereignty over the Dome of the Rock, broken for certain brief periods by other equally oppressive gentile conquests, was eclipsed during the fighting of June 6-7, 1967, exactly 1278.34 solar years from February 1-2, 689 A.D., which falls into the Islamic year (a.H. 69) that many scholars, including Aanavi of the Metropolitan Museum of New York, believe to be the year during which the foundation stones of the Dome were laid down.

The Book of Revelation, chapter eleven, speakes of a long persecution of the Jew. The prophecy is couched in a symbolic language similar to that of Ezekiel's received judgment upon Jerusalem (Ezek. 4: 1-8). The writer of Revelation is thus commanded:

> Now go and measure the temple of God, the altar, and the number of the worshippers. But have nothing to do with the *outer court of the temple;* do not measure that; for it has been given over to the gentiles, and they will trample the Holy City underfoot for forty-two months. Rev. 11: 1-3.

When the principle of Ezekiel, chapter four, and Numbers, chapter fourteen (a day for a year and a year for a day), is applied to this '42 months' of Revelation, it is discovered that each month is worth 30.44 solar years (one solar month is 30.44 days). Forty-two of these solar 'months' is exactly 1278.34 solar years, which in turn corresponds to the second half of the great *seven times* punishment period - 2556.6954 years.

Jerusalem's Density

The foregoing demonstration that the long absence of Israelitic sovereignty over Jerusalem is measurable and explicable by the arithmetic function of seven (and its half) vindicates metric prophecies of both the Old and New Testament and confirms the integrity of the Scriptures and their ancient moral teaching.

We are not Scripturally informed why Yahweh chose *seven* to consummate His creation; we are not informed why He chose *seven* to govern the period of prescribed ritual cleansings under the Mosaic law; or why, again, He chose *seven* as the number whereby He disciplined His people for two and one half milleniums.

Two years after the first Aliyah to Palestine, seven thousand Jews from Russia, Dr. H. Grattan Guinness (d. 1910) published his finding that levitical and prophetic times form a 'continuous septenary series'. He pointed out that the Mosaic Jubilee (Lev. 25: 8-12) ritual was a 'week of weeks of years'; that the 'seventy years' (Jer. 25: 11-12) prophecied for Judah's captivity was a 'week of decades'; and that the 'seventy weeks' of Daniel 9, a portion of which is yet unfulfilled, is a 'week of weeks of decades' (that is, 490 years).[22] All these *weeks* or *sevens* amply demonstrate Yahweh's utter consistency in building upon the Creation Week and His Commandment that the Israelities rest upon the seventh day (Exod. 20: 8). As stated in the foregoings, the 'seven times' of Leviticus 26 is *seven times a year of days of years* or, as Guinness expressed it, a 'week of years of years'. As stated earlier, the justification for assuming a year for a day of Israelitic transgression is found in Numbers 14: 34 and Ezekiel 4: 1-3.

Just as the universal theory of gravitation measures only the amount of change in the motions of heavenly bodies but is not able to explain what causes that motion, similarly we are able to measure the time span of a Biblical prophecy, set in motion two and one half milleniums ago, come to a rest at Jerusalem, the City of God, the spiritual capital of the world. At this fact we can only stand in awe and with Sir Isaac Newton exclaim, 'to us it is enough'.

Yosef Tekoah, Isreal's Ambassador to the United Nations, was indeed right when in 1967 he referred to the June event as a ' . . . great hour of biblical prophetic consummation'.[2 3]

The Scriptures do not speak of another alienation of Jerusalem from the Jews before Messiah's return. They do warn most emphatically that the Holy City will be invaded and ravished during the Armageddon (Zech. 12, 14; Rev. 16: 16). It appears therefore quite certain that Isreal will cling tenaciously to her beloved Jerusalem, as indeed the nation has shown every intention of doing since 1967.

REFERENCES AND NOTES

1. *1869-70* – purchase of land by the Alliance Israélite Universelle near Jaffa for the agricultural school Mikve Israel (Mique Yisrael); *1878* – founding of the first pioneering village, Petach Tikva; *1882* – first *aliyah:* Rishon le-Zion, Nes Ziona, Zichron Ya'akov and Rosh Pina founded; *1897* – First Zionist Congress - World Zionist Organization founded; *1919* – Tel-Aviv, first Jewish city, founded; *1917* – Balfour Declaration and the British capture of Jerusalem, ending a 400 year Ottoman domination; *1948-9* – Jewish War of Independance; *1956* – Israel's Bar-Mitzvah in Sinai; *1967* – Israel's capture of Old Jerusalem and extension of other borders.

2. Cf. Jeremiah 15: 3. Abba Hillel Silver categorizes the immoral practices of Manasseh whose deplorable dual distinction lay in being the most wicked king of Judah and in reigning the longest of any: "(1) He rebuilt the high places and erected altars for Baal and made an asherah. He worshipped all the hosts of heaven and built altars to them, even in the House of YHVH, and he placed a graven image of the asherah there. (2) He burnt his son as an offering. (3) He practised soothsaying and augury and dealt with mediums and wizards. (4) He shed much innocent blood. These were the abominations, the evil he did which provoked YHVH to anger (II Kings 21)". (Silver, Abba H., *Moses and the Original Torah,* MacMillan, New York, 1961. p. 40-41.

3. Silver, Abba H., *Moses and the Original Torah,* p. 102.

4. Some historians and not a few evangelicals still persist in pointing to the period of the Maccabees and Hashmonians as times of a bona fide Jewish national sovereignty. During these times there existed for short periods only a kind of *pseudo-sovereignty* that was in effect a *deferred sovereignty* of the Seleucids. During the long Persian domination of Palestine (539-332) the Jews were a satrapy (Neh. 9: 36-7). Jewish effected liberations were an erratic see-saw phenomenon and were never complete in their sovereignty. For example, Judas's dramatic entry into Jerusalem in 164 was made under the eyes of a manned Syrian fortress. While Simon was freed of paying tribute to Demetrius II Nicator in 142, he was really an unmolested ethnarch dubiously named by the Jews. His son John, known as Hyrcanus, succeeded a murdered father by popular support before Antioch could react. In time, Hyrcanus was subjected to tribute by Syria and he had to give up both cities and fortifications. Moreover, in 129 B.C. he had to have the confirmation of the Roman Senate. (Such a state of affairs as this is somewhat comparable to an Israel seeking U.N. approval for its assumption over Jerusalem in 1967 – something a fully sovereign nation like Israel has not done and is unlikely to do). The last of the strong Hashmonian rulers was Jannai (Janneaus Alexander, 103-76). Posing as a devout Sadducee, Jannai was a lusty, bellicose wretch who in a lifetime of military wanderings destroyed without mercy certain Nabatean and Greek cities. Twice in his checkered career he acquired nearly all of *Eretz Yisrael* and even a good part of what is today the western portion of the Hashemite Kingdom of Jordan. Yet no evidence exists that he held Askelon, though Gaza fell to him. Jannai in fact suffered almost as many notable defeats as victories. Only the fratricidal struggles of the Seleucids permitted him to carry on and the terrible factions among the Jews. In 88 B.C., he was soundly defeated by the Syrian, Demetrius III Eukairos, at Shechem. Demetrius had been invited into the country by Jannai's embittered rivals, the Pharisees. The same year, another Seleucid king, Antiochus XII of Damascus, decided to subdue the Nabateans and ran his army right through the Jannai defence line, which hinged on Joppa, and defeated Jannai east of Lydda. Resilient Jannai recovered yet again and a few years before his death extended his rule to its farthest limits. *However, the settlements he made in defeat are ample evidence of the true nature of his sovereignty.* He was murderous to his own people and his court was modelled after Hellenistic regimes.

Following his death, induced in 76 by alcohol, Antipater in about 70 began scheming for Judea, currying favor with Rome. When Pompey's aide appeared in Jerusalem in 66, Aristobulus and Hyrcanus II dropped their power struggle, so much did they dread Daniel's fourth empire and its illustrious general. Pompey annexed Syria-Palestine to the Roman Empire in 64 B.C. Antipater's infamous son, Herod the Great (34-4 B.C.), acquired the power by deceit and never earned the trust of the Jewish people, despite his temple rebuilding and great public works. Now from the death of Herod, until the destruction of Jerusalem, in 70 A.D., the Roman domination grew oppressive in direct proportion to Jewish revolt and resistance. (See Williams, Albert N. *The Holy City* , Duell, Sloan and Pearce, 1954, p. 197-206; *Daniel to Paul* edit. by G. Cornfield, *et al)* The MacMillian Company, 1962, p. 57-66).

5. Major English renderings of the ancient texts appear to be about evenly divided between calling *sheva* "sevenfold" and "seven times". The choice of "seven times" as the intent of Yahweh here hinges partly on the evidence that is afforded by the feminine *sheva* which presupposes the feminine *pa'an,* although the latter word is absent from the earliest known texts. The reconstructed phrase would properly read: *sheva pe'amin.* The scholastic battle over this raises the more fundamental question of the literal versus the allegorical or spiritualized interpretation of Biblical texts. The writer feels that there is room for both views
See: Herschel, Abraham Joshua, *Israel, An Echo of Eternity,* New York, Farrar, Straus and Giroux, 1967, p. 139-145.

6. Kiel, C.F. and F. Delitzsch, *Biblical Commentary on the Old Testament, Vol II, The Pentateuch,* Grand Rapids, Eerdmans, n.d., p. 473.

7. Josephus, *Wars of the Jews,* v. 10. 3; Kiel and Delitzsch, *op. cit.*, p. 475.

8. The Babylonian date is the second of Adar. For a discussion see: D. J. Wiseman, *Chronicles of the Chaldean Kings 626-556 B.C. in the British Museum,* London, 1961, p. 33.

9. *Josephus.* Trans. by Ralph Marcus. VI (Jewish Antiquities. Books IX - XI.) Cambridge, 1966. p. 217.

10. Josephus, *op. cit.*, p. 218.

11. Thiele, E.R., *The Mysterious Numbers of the Hebrew Kings* (rev. ed.) Grand Rapids, Eerdmans, 1964. p. 165-166. This edition has revisions for the Nebuchadrezzar period based on a

publication by the British Museum in 1956. While Thiele's derived date, Jan. 15, 588, must be very close to correct, II Chron. 36: 10 presents a problem. The Hebrew in Chron. may be translated as the 'turn of the year' or the 'spring of the year' as the stated start of Zedekiah's reign. Thiele cites also Ezek. 40: 1 to justify a Nisan 10 (April 22, 597) date for Zedekiah, rather than April 13th, the start of the New Year for Babylon in 597, when it is more likely that Zedekiah was named king by Nebuchadrezzar after swearing an oath of allegiance.

12. Accepting the Josephus theory, Smith cites Jer. 37:.5-11; 34: 21 and Ezek. 17: 15-20 (which describes Nebuchadrezzar's breaking off the siege long enough to turn back the Egyptian army) as indications that II Kings 25: 1 must refer to the date of Nebuchadrezzar's return to resume the siege. Smith admits that such evidence is 'extremely slight'. In fact, it is no evidence at all since the verses that Smith cites give no clues on the actual chronology of the event. (W. Smith in *Smith's Bible Dictionary,* Westwood, Fleming H. Revell Co., 1967, p. 761).

13. *The World Almanac Book of Facts 1971* (N.Y., Doubleday, 1970 p. 770) notes: 'The year 1 A.D. is the first year of the Christian era. Jan 1, 1 B.C. is just one year before Jan 1, 1 A.D. The elapsed number of years between a date B.C. and the same date A.D. is one less than the sum of the years. The Christian era was calculated by the monk Dionysius Exiguus in the 6th century after Christ. He placed Jesus' birth on Dec. 25 in the year 753 of Rome, and decided 754 should be the first year of the Christian era.' There is some reason to believe that Exiguus was ignorant of the Arabic concept of the mathematical zero, hardly known in Europe in his time. The world's major observatories have expressed preference for the one year subtraction theory over all other theories.

14. Quoted from the *Washington Post* (Wash. D.C.) April 20; 1969.

15. The *Koran,* trans. by N.J. Dawood. Penguin, Baltimore, 1966, p. 263.

16. The *Koran,* Penguin, 1966, p. 286.

17. Guillaume, Alfred. *Islam.* Harmondsworth: Pelican, 1954. p. 38.

18. *The Koran,* Penguin, p. 382-3.

19. *The Koran,* p. 385.

20. Caetani, Leone. *Cronografia Islamica.* Foglio 1 Paris, 1911, p. 182. Other sources have the death of Sophronius in March, 638 (Papenbroch, C.F. Caetani). One thing appears certain. The siege of 637 was for some time interrupted by plague (Caetani, *Annali Dell'Islam,* p. 923).

21. Grube, Ernst J. *The World of Islam.* New York: McGraw-Hill, 1967. p. 13. *Also:* Oleg-Grabar "The Umayyad Dome of the Rock" *In.* Ars Orientalis, Vol III, 1959, p 46: 53-54; 62. Falsely called the 'Mosque of Omar', the Dome of the Rock (Al-Qubbat as-Sakhrah) was erected by Caliph Abd-al-Malik (685-705) as a pilgrimage shrine for worshippers, when, according to at least one Arab historian, the local caliph at Mecca, Ibn al-Zubayr, began to exploit the pilgrims visiting the holy city of Islam. Thus for a time Jerusalem became a rival to Mecca and to the present day is regarded by Islam as its most sacred city after Mecca and Medina. The carefully contrived historic Islamic insult to Jewish holy places does not end with the Umayyad's placement of the Dome of the Rock. The Supreme Moslem Council (The Mehkema or Mahkama), or House of Judgment, still occupies a Saracenic building that sits upon the site of the ancient Sanhedrin, the Supreme Council of the Jews, destroyed by Titus. The Israeli authorities permit the Mehkema to continue to function just off the Temple platform in its medieval house between Wilson's Arch and the recently enlarged plaza before the Western Wall remnant. Effective Islamic (Jordanian) sovereignty over the Dome of the Rock and the Temple area ended with the Jewish victory of 1967. The Government of Israel immediately forced a reduction in the tariff imposed upon visitors to the sacred platform – the Haram esh Sharif – and also forced the Islamic religious authorities to accept a new opening to the platform between the Western Wall and the Al Asqa (Aska) Mosque, where no tariff can be collected of any visitor. (Beneath the foundations of the Asqa Mosque are believed to be the foundations of the palaces of the kings of Judah). The Moslem authorities since 1967 only regulate the visiting times to the Temple area and to their monuments there. Israel's effective sovereignty over this, and all other parts of Jerusalem, is complete.

22. Guinness, H. Grattan. *Creation Centred in Christ,* New York, A.C. Armstrong & Son, 1884. p. 270-279. (London ed 2 vol. 1896).

23. Tekoah, Yosef. *Barbed Wire shall not return to Jerusalem.* Israel Information Services, New York, 1967. p. 43.

All Scriptural quotations employed in this paper, except as otherwise noted, are from the 1970 Oxford Cambridge edition of the *New English Bible.*

Note. Dr. Brodeur studied international relations at Harvard (A.B. 1955) and in 1963 received a doctorate from Clark University in political geography. His address is Apt. 601, 55 West Chestnut Street, Chicago, Ill. 60610, USA.

Discussion.

Mr. H.L. Ellison Writes:-

This fascinating study raises major theological and philosophical problems. It belongs to a type of study which was not uncommon in the late Victorian period. The example best known to the Christian student is probably Sir Robert Anderson's calculations on Daniel's Seventy Weeks (Dan. 9: 20-27). There are various reasons why it has largely fallen out of favour, but it is far from dead, as may be seen from C.G. Ozanne's recent volume *The First 7000 Years.* Dr. Brodeur's treatment avoids the weakness of many such studies in that he does not have to depart from accepted chronology or to ask for special measures of time. He does not, however, meet certain questions of principle.

There is, firstly, the assumption that God chooses to bind Himself by measures of time, which act deterministically on men. Undoubtedly the New Testament sees God's determinate council behind the rejection of Jesus the Messiah, but there is clearly also the sense of heart-break that Israel did not recognize its Lord. Then it does not allow for the New Testament certainty that the Second Coming could be just around the corner. If, in fact, as such calculations suggest, the Parousia could not take place before 1967 at the earliest, it is hard to exonerate the New Testament of *suggestio falsi.* Thirdly, there must always be an element of doubt about a theory which was clearly unknown to the apostles. This does not mean that the arguments should not be taken very seriously, but that we need to seek a synthesis between an apparently unanswerable mathematical argument and equally apparently valid theological arguments.

Editorial Note With the greatest respect, after correspondence with Dr. Brodeur and consultation with others including Professor D. J. Wiseman, we find it difficult to understand Dr. Brodeur's calculation. The unadjusted date 590.262 would correspond, we reckon, to about 26 Sept. BC 590. To allow for the fact that there is no year zero, we

subtract one year from the negative number giving a date around the end of September BC 591.

Wisely Dr. Brodeur makes no claim to exactitude: his discovery is no less remarkable if the seven times of the Gentiles started just before the beginning of Nebuchadrezzar's siege of Jerusalem, perhaps when he set out from Babylon finally resolved to make a full end of the city. There is obviously some ambiguity about the start of the period, but it is small – less than 0.1% of the total time involved.

Later note Dr. Brodeur now agrees with the amended date. He says that this corresponds with the giving of oracles to Ezekiel, Chs. 20-23, and that most of the blessings and curses of Leviticus 26 are in fact alluded to in Ezekiel.

F. H. HILLIARD

'Moral Education' or 'Education of Character'?

In this paper, given at the 1971 (6 February) Symposium on Education convened by the Victoria Institute, Professor Hilliard of the School of Education, Birmingham University, traces the modern history of the terms used in the title. He concludes that the now popular term 'Moral Education', though it might appear innocuous and adequately descriptive of one aspect of the teacher's task, has connotations which are in fact secular, even atheistic, while its descriptive value is diminutive. The older term 'Education of Character', as used and refined by Martin Buber, is to be preferred as a description of the moral aspect of the educative process.

Among the several interesting changes which have come over British education in the last 30 or 40 years has been the increasing tendency to speak of moral education where previously – and certainly in the 19th century, – it was customary to talk rather of character-training. I suppose the earlier tendency is best illustrated in the more popular form given to it by Charles Kingsley's 'Be good, sweet maid and let who can be clever', and in more philosophical terms by Herbert Spencer who declared, 'Education has for its object the formation of character'. Certainly it is the case that Victorian Britain – and to a lesser degree perhaps Edwardian Britain as well – generally subscribed to the notion that formal education was above all concerned to form the characters of the young. So far as elementary schools, and after 1902 the new secondary schools also, were concerned this was due to a considerable extent to

the fact that they were strongly influenced by the attitude of the denominational schools which had preceded them in the field. On the other side of the educational fence the public schools had inherited a similar conviction as a result of the reforming work of Arnold, Thring and others in the 19th century. Had not Thomas Arnold declared: 'What we must look for here is, first, religious and moral principles; secondly, gentlemanly conduct; thirdly, intellectual ability'?

Today, however, we would hesitate to speak in these terms. Character training, and even (since 'training' would be anathema anyway) the 'Education of Character' do not appear to be any longer part of our language of education. On the other hand 'Moral Education' is, and seems to be an increasingly important part of it. Indeed it has in recent years begun to attract to itself a gradually increasing amount of the literature of education.[1–5]

I suggested a moment ago that Victorian Britain generally thought and spoke in terms of character training. There was one most interesting exception and I want, if I may, to allude to it in a little detail because at a later stage in this paper it will be necessary to refer to it again for the light that it sheds on certain characteristics inherent in current usage of the term *moral education.* The exception was that the 1890s saw the foundation of a body called the *Moral Instruction League.*[6] Briefly, the League was formed by a number of humanistically-minded men and women (as we would now call them: at the time they would have been described as agnostics or atheists!), philosophers, scientists, educationists with 'advanced' views and philanthropists who believed that the moral instruction of the young ought to be substituted for, or at any rate clearly distinguished from, religious instruction. The League had considerable success in influencing government educational policy, as can be seen by the fact that in the Education Codes issued by the Board of Education in 1904 and 1906 and in certain publications of the Board, stress was laid upon the importance of 'moral training' and 'moral instruction' of the a-religious kind for which the League had campaigned. In 1909 the league changed its name to the *Moral Education*

League and at the same time it altered the general direction of its activities. It had realised that it could not persuade the central government to put pressure on local authorities to introduce secular moral instruction in their schools. It therefore directed its efforts towards the local authorities and the teachers in an effort to persuade them to further this kind of moral instruction. In this matter it achieved some, though not very great success but for various reasons its support and efforts began to peter out from 1914 onwards. After 1919 it appears to have died altogether. Its origins, aims and achievements are of interest to the educationist today because, as I want to argue later, they represent the real roots of the current attitudes to 'moral education'.

However, this is to jump the gun a little. What I mainly want to do in this paper is to examine the questions, What more precisely is involved in the concept of 'moral education' as we now use the term, and, In what respects is it different – if it is so – from what appears to be the more positive and perhaps slightly suspect (from the standpoint of current thinking about education) term 'Education of Character'?

In juxtaposing these two terms I am not in fact intending simply to compare past with present attitudes in British education, but rather to compare two recent attitudes and concepts. For the fact is that the phrase 'Education of Character' is a key phrase and expresses a fundamental concept in the educational writings of Martin Buber, whose thought and writings exercised such a profound influence upon the development of the modern state of Israel. Buber's intellectual activity continued unabated almost up to the time of his death in 1965 and his views remained remarkably consistent throughout his long life. What he has to say about the education of character is contemporary, or almost so, and can be taken as an interesting point of comparison with current thinking here about moral education.

Martin Buber was not in any sense a professional educationalist, though he was intensely interested in education, and indeed was actively involved for a time in the adult education programme in Israel. He was for most of his life in Israel (to

which he came as a refugee from Hitler's Germany in 1938) Professor of Social Philosophy at the Hebrew University of Jerusalem. He is, of course, best known for the slender but impressive monograph which he published in 1923 – at the age of 45 – and which he called *I and Thou.* In it he set forth, in a highly individualistic blend of metaphysical, poetical and traditional Jewish prophetic styles, his conviction that the essence of existence is to be discerned in the full encounter of person with person and person with thing, the 'I' accepting other persons and all things as they are in themselves. This briefly, is what the phrase 'I and Thou' involves in contrast to an 'I–It' type of encounter or relationship in which the 'I' categorises and perhaps makes use for his own ends of another person or a thing.

I do not however propose to concentrate in this paper upon this most seminal of all Buber's writings, because it is with the application of the I–Thou principle to formal education, and particularly to the education of character, that I am concerned, and this is mainly developed for us in a lecture on the subject which Buber gave in 1939.[7]

Yet one must recognise at the outset that in a most remarkable way, Buber's fundamental convictions about the 'I–Thou' relationship, formed while he was still in Europe, were to find one of their most direct and powerful forms of practical application in relation to the aims and methods of adult education in Palestine. Two factors combined to make the whole task of adult education of immense importance in Palestine in the late 1940s and early 1950s. The first was the considerable increase in the number of Jewish immigrants into Palestine between 1935 and 1947. The second was the foundation of the independent state of Israel in 1947. It was immediately clear to leaders of the political and cultural life of the new State that there was an urgent need to educate the adult immigrant population, made up of people with diverse cultural and political traditions who had come from various countries in Europe, Russia and North Africa, in a manner which would give cohesion and a sense of national purpose to their life as members of the new State of Israel.

In 1949 therefore a Centre for Adult Education was formed, closely associated with the Department of Education of the Hebrew University of Jerusalem. One of its first acts was to establish a Seminary for Adult Education Teachers. The immediate purpose of the Seminary was to train instructors in a ten month course to teach adults in towns, villages, in kibbitzim and immigration camps. Buber was the initiator of the idea and he became the first Principal of the Seminary. He found in this venture an ideal means of applying to education the basic principles which he had enunciated twenty years previously in his 'I–Thou'. In 1950 he contributed an essay on *A New Venture in Adult Education* to the Semi-Jubilee Volume of the Hebrew University. In it he said of the kind of adult education which under his direction the Seminary had striven to promote:

> Contact is the root and basis of education. It means that the connection between teacher and student is not merely on an intellectual plane – the influence of a developed mind upon one that has not yet fully matured – but a connection between personalities, so that one human entity confronts another . . .what is sought is a truly reciprocal conversation in which both sides are full partners. The teacher leads and directs it, and he enters it without any restraint. I call this the 'dialogue principle' in education.

There has, I think been a tendency to try to interpret Buber's attitudes to and conclusions about education from an abstract standpoint, as though his application of the I–THOU principle to education was a philosophical principle, capable of being understood without reference to the particular situation in which Buber himself lived and worked. This seems to me true only to a limited extent, as the essay from which I have quoted shows. In all that he wrote from 1938 onwards about education Buber was primarily interested in the problems and purposes of education in the new State of Israel – certainly not unmindful of education elsewhere or indeed of education in general terms – but above all, influenced by the educational needs of Israel. This has to be appreciated particularly when one comes to consider his convictions about education as education of character.

As I remarked earlier, one of Buber's well-known essays deals with the education of character and was first delivered as a paper to a national conference of Jewish Teachers of Palestine in 1939 – one year after Buber himself had settled in Palestine. In it he deals with what he considers to be the most important application to education of the 'I–Thou' principle. If a genuine encounter of the developed personality of a teacher with the developing personality of his pupil is what is essentially involved in the educational process, then the principal outcome could hardly be seen in other terms than what is commonly called an education of the 'character'.

> Education worthy of the name is essentially education of the character. For the genuine educator does not merely consider individual functions of his pupils, as one intending to teach him only to know or be capable of certain definite things; but his concern is always the person as a whole, both in the actuality in which he lives before you now and in his possibilities, what he can become.

By 'character' Buber says he does not mean 'personality'. 'Personality' is a given, the 'ego' as Freud described it, or as Buber puts it in more Hebraic form, 'the unique spiritual-physical form with all the forces dormant in it' 'Character' is what a man may become as a result of the interaction between this 'personality' and his whole environment. It is 'the link between what this individual is and the sequence of his actions and attitudes'.[9] The distinction is important in any case, of course, but especially important to Buber's argument because he believes that though a teacher can do little to influence his pupil's personality he may hope to assist in the development of his character. 'Personality is a completion, only character is a task'. [9]

Having encountered this bold assertion by Buber the modern reader is bound to wonder whether as it is worked out Buber's conception of this over-riding task of education amounts to the blunt form of 'indoctrination' which it begins to sound like. The answer is that it is not. Buber was too much of a 'modern' and more an existentialist than a traditionalist, to allow him to believe that the task could be properly conceived in such simple terms. He was opposed to formalised and systemised attempts by the teacher to discuss

moral issues but believed that this did not mean that the teacher ought to tackle the job by stealth. He must not disguise the fact that education of character is his intention but he must wait for the moment when, his relationship with his pupils having produced trust, his advice is sought about a specific moral problem. Given this right relationship, Buber believed that the whole of the educational process, 'lessons and games, a conversation about quarrels in the class or about the problems of a world war' can, quite naturally and spontaneously, open a way towards the education of character.

It all begins at this point to sound to the modern ear both a little idealistic and perhaps even just a shade unhealthy – a suggestion of Thomas Arnold, or of the atmosphere of The Prime of Miss Jean Brodie! But the suspicion is quickly dispelled as one pushes on with the essay. Buber is clear that it is neither the 'values' of the teacher, nor indeed any traditional set of values, which the teacher may hope to encourage his pupils to accept as a result of their facing up to moral dilemmas: what can be expected is that each individual adopts an attitude which is 'real' for him. The kind of advice which a teacher gives to a pupil who seeks advice about a specific moral problem will, Buber says, 'probably lead beyond the alternatives of the question by showing a third possibility which is the right one'.[10]

What Buber had in mind when he spoke of 'a third possibility' is, I think, a reflection of the very strong existentialist stratum which is to be discerned in the structure of his thought. He was acutely aware of the 'pluralistic' nature of modern societies. In an earlier lecture given in 1935 in Hamburg which he called *Education and a World-View,* he declared:

> We live – one must say it ever again – in a time in which the great dreams, the great hopes of mankind, have one after another been fulfilled as the caricature of themselves. What is the cause of this massive experience? I know of none save the power of fictitious conviction. This power I call the uneducated quality of the man of this age. Opposed to it is the education that is true to its age and adjusts to it, the education that leads a man to a lived

> connection with his world and enables him to ascend from there to faithfulness, to standing the test, to authenticating, to responsibility, to decision, to realisation.[11]

In the later essay Buber's existentialist standpoint emerges even more plainly.

> We cannot conceal from ourselves that we stand today on the ruins of the edifice whose towers were raised by Kant. It is not given to us living today to sketch the plan for a new building. But we can perhaps begin by laying the first foundations without a plan, with only a dawning image before our mind's eye.[12]

I have not, of course, done justice in these brief references to Buber's writings to the full range and depth of his treatment of what he sees as the fundamental task of education. Nevertheless, I want to argue, first that what he calls the education of character is very different from 'moral education' as it tends to be conceived today, and secondly, that his view of what is involved in the education of character is by no means incompatible with the educational situation that confronts the modern teacher faced with the restraints and obligations imposed upon him by educational principles which are inevitably conditioned by the pluralistic nature of most modern societies.

In allowing references to the education of character to disappear from the current language of education, and substituting the more colourless term 'moral education', have we been altogether wise and realistic? I ought perhaps first to defend my description of 'moral education' as a more colourless term and propose to do so by referring all too briefly perhaps to the book which emanated from the Farmington Trust Research Unit at Oxford in 1967 called *Introduction to Moral Education.*[3] It is probably the most substantial of all the recent publications which have attempted to examine the meaning of the term. For my present purpose I propose to ignore the sections dealing with the psychological and sociological aspects of the process of moral education because in the nature of the case they deal with the conditions in which this aspect of education may proceed rather than with what it actually stands for.

John Wilson strikes the keynote of his discussion of the nature of 'moral education' in his first sentence. 'Moral Education is a name for nothing clear'. It would be fair, I think, to regard this as the main burden of his essay – that we do not yet know what moral education is, that it can refer to a number of different things, and that we shall not be clearer about what it ought to mean until a great deal more analysis of the concept has been done.

He argues that in common usage it is an umbrella term under which have sheltered a variety of different beliefs about the nature of the educational process and of practices associated with them. 'Moral Education, in various forms and under various titles, has been a matter of perennial concern . . . under such headings as 'bringing up children in the fear of the Lord', 'the education of a gentleman', 'educating the whole man', 'Character-training' and many others, various ideals and values have been held up by churches, states, political parties or social classes as the proper content of moral education'.[13] He then asserts that a great deal of what is said and written today about moral education consists of a more or less incoherent acceptance of, or reaction against, one or more of these traditional notions, and that what is now demanded is 'the public acceptance of more rationally defensible expertises which must stand on firm philosophical foundations'.

At first blush there may not seem in Wilson's argument so far any great disagreement with what Buber had in mind, apart that is, from terminology. It is agreed that traditional values, or as Buber prefers to call it, the conception of character, have lost their currency for many young people. But look more clearly at the remedies that are suggested for this problem. Buber takes it for granted that what he calls 'a new building (to replace the ruined Kantian structure) will have to go up: we are not in a position to sketch the plan for it. This being so we have to try to lay the foundations without a plan, with only a dawning image before our mind's eye.

Contrast this with Wilson's view that the main task is philosophical rather than intuitive and practical – to strive for the public acceptance of more rationally defensible expertises which must stand on firm philosophical foundations.

To be fair, Wilson is by no means indifferent to the need for action; parents and teachers have their own value-systems which they seek to transmit to the young: schools and society generally will make certain rules which the young will be required to observe. But all this, Wilson maintains, represents the pre-conditions of moral education.[14] Moral Education itself is a mainly intellectual process, the purpose of which is to impart those skills which are necessary to make good or reasonable (notice the equation here) moral decisions *and to act on them.*[15]

I do not want to labour the point that it is odd indeed to talk of moral activity as a 'skill'. If it were so, then some normal people would be better at 'doing morality' than other normal people because they possessed or were capable of learning certain skills rather than because, as is widely assumed, they had the will. But this is less important (because it is not a point which is laboured in the essay) than the tendency which runs right through Wilson's contribution to reduce moral education mainly to ethics, by which he would understand mainly the study of the language of morals.[16] Thus, in his view moral education is inevitably mainly a form of intellectual activity. The teacher must arrive at a liberal and neutral intellectual position by a careful examination of the nature of moral activity and moral principles. He in turn must aim principally at assisting his pupils to examine and choose, consciously and rationally, principles which should influence their moral behaviour. That this is not an unfair description of his point of view is indicated by Wilson's own rather defensive remark. 'The reader may feel that we have pitched our interpretation of moral education too high: in particular perhaps that in stressing the notion of rationality we have failed to do justice to the essential groundwork of moral education'. . . (p. 126).

I think it is worth remarking that in identifying moral education so closely with ethics, Wilson is accepting, apparently without serious question, the kind of interpretation which was given to the term when it first appeared as part of the language of education in the late Victorian period. Then it was secular, in the anti-religious sense, it was rationally-as

opposed to theologically-based, and it was geared almost entirely to 'instruction': the League which promoted it was called, as we have noted, *The Moral Instruction League* for the greater part of its existence.

It is not without significance that the renewed attention which the term 'moral education' has recently been given by educationists has been stimulated by the successors of the Victorian secularists, the members of the British Humanist Association and to a lesser degree, the National Secular Society. Their aims, broadly speaking, are closely parallel to those of the Moral Education League (as the Moral Instruction League called itself from 1909 until its demise about 10 years later).

Now it is not my intention in drawing attention to these facts to engage in polemics against Humanists or against their efforts to secure a place for their form of moral education in place of religious education in the curricula of state schools. I am concerned rather to suggest that before the term 'moral education' becomes an established part of our current educational vocabulary we should recognise the severe limitations which it brings with it as a result of its origins and more recent associations. My contention is that bearing in mind these limitations it is inadequate as a description of the task which in fact the schools and teachers are expected to undertake in relation to education in its moral aspects.

The existence within a pluralistic society of a variety of value-systems (religious, in various forms, humanistic, materialistic) certainly makes the task of moral education more complex than it appeared 60 or 70 years ago. This fact does not, however, allow us to invert the priorities in moral education, making the second-order or ethical aspect of it its major concern and reducing its traditional first-order function, its role in encouraging pupils to accept and apply to conduct certain values for themselves, to a subordinate position. This is to put the cart before the horse with a vengeance. Nobody would wish to belittle the importance of ethics. The endeavour to understand moral experience is an important part of man's rational activity. But morality preceded and precedes ethics: it is the groundwork, a first-order activity,

and ethics is part of the structure built on it, a second-order activity. Art, in all its varied forms is similarly a first-order activity, and aesthetics a second-order activity. Ethics might even with advantage be an activity in which older pupils who are capable of engaging in it might usefully learn 'to do'. But this would still be 'to do' only a secondary and not the primary activity in which they must engage if their education in its moral aspects is to be properly conceived. The major concern here is to encourage the young to develop a moral sense, to respect moral principles, to acquire moral values and principles, of their own, and above all, to translate their moral values and principles into practice in the various situations in which they will find themselves. In the course of this development some degree of reflection upon morality in its various manifestations will be inevitable and to this extent it could be argued that ethics may contribute to the developmental process. But the extent to which this is possible will depend upon the capacities of each individual and is therefore a variable. The constant is not ethics: it is morality in its first-order sense.

So if at present I want to find a term which adequately describes the task of formal education in its moral aspects, I am disposed to prefer Buber's "The Education of Character" to the term 'moral education'. It goes to the heart of the matter in a way which is by no means apparent in current usage of the term 'moral education', and the existentialist approach which Buber adopts in facing the question of what is meant by 'character' frees the phrase from earlier socio-theological associations, and from associated suspicions of 'indoctrination' which might in consequence cling to it.

In the pluralistic society it is certainly true that education in its moral aspects must free itself from in any of the attitudes and methods which may still cling to it from what Sir Peter Venables calls the Age of Assent, and adopt those which are appropriate of the Age of Consent. The teacher has to be alive to the importance of morality but to more than one particular value-system. He has to work from a wider variety of moral principles, values and practices than did his Victorian or Edwardian predecessors. His point of entry may be one

or the other or a mixture of several but he will have to have a point of entry, if he is to contribute at all to the education of the character of his pupils.[17] This is to say that he will need to be a person who himself consciously and deliberately engages in moral activity in the first-order sense. He may also engage in it in the second-order sense, be something of a student of ethics, but this is a secondary consideration. He will not necessarily be a teacher of R.E., (and certainly not, one hopes a teacher who is given the job of taking a 'subject' labelled on a time-table M.E.). He will be a teacher of any part of the curriculum. As Buber puts it:

> For educating characters you do not need a moral genius, but you do need a man who is wholly alive and able to communicate himself directly to his fellow beings. His aliveness streams out to them and affects them most strongly and purely when he has no thought of affecting them.[18]

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11 In *Pointing the Way, collected Essays of Martin Buber,* tr. and ed. M. Friedman, 1957, p. 105.

12 Ref. 7. p. 111.

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14 Ref. 3. p. 128–9.

15 Ref. 3. p. 27, 751.

16 This has, of course, been the view of the nature of ethics which has been favoured by most recent philosophers in Gt. Britain. R.M. Hare, for example, regards ethics simply as 'the logical study of the language of morals' (Preface to *The Study of Morals,* 1952, p. iii). Wilson on the whole appears to accept much the same point of view (see also his *Reason and Morals,* 1961, pp 2-3,). Mary Warnock however *(Ethics Since 1900,* 2nd Edition, 1966), believes that there are indications that ethics is emerging from an over-preoccupation with analysis of ethical language towards the study of moral behaviour.

17 Recent discussion of 'indoctrination' has not always sufficiently distinguished between the importance for effective teaching of the teacher having his own attitudes and convictions and the manner and extent to which he allows these to influence his teaching. For a recent attempt to balance these considerations, see B.G. Mitchell, *Indoctrination,* 1970. The Fourth R. Appendix B, pp. 353–8.

18 Ref. 7. p. 105.

PETER COUSINS

Comparative Religion in the School.

In this paper Mr. Cousins, who is Head of the Department of Religious Studies at Gipsy Hill College, discusses the possibilities of teaching comparative religion (CR) in schools. He finds that, despite the difficulties which he discusses in detail, there is much to be said in its favour, even though the Christian who advocates this course may find himself in strange company!

In our pluralistic and relativistic society religious education poses a problem for every educationalist. What precisely should we teach – in fairness, that is, to all members of the community?

The study of comparative religion (CR) seems at first sight to offer a ready solution because it receives support from a wide spectrum of the community.

When we examine the situation, however, we soon begin to realise that the very width of the spectrum may cause embarrassment: support for CR may even turn to opposition when one realises how alien may be the associates with which the lot of the CR supporter is cast!

Let us first ask who its supporters are, and what their motives are. We may start with those farthest removed from the Christian point of view.

CR in the school is often favoured by those who despise *all* religion: those who, like David Tribe, insist that every mention of religion in the state school should be 'completely impartial' as between one religion and another, or between religion and no religion at all. It is the declared wish of Tribe and those who think like him that Christianity should be treated, if treated at all, on a par with "astrology, spiritualism and demonology which are excluded from the

curriculum"[1] (Tribe) and to this end the teaching of CR is a first stepping stone. A rather similar attitude is displayed by the obsessive enemies of the establishment who wish to see the provisions of the 1944 Act abolished simply because it has for many years been part of the established order. For such CR is a handy weapon in the unceasing conflict with accepted standards.

The study of CR is also, at times, supported by the agnostic who sees in the religions of mankind remarkable examples of human creativity. Man is not only the tool-making or the talking animal; he is also the animal who prays, his religious systems testifying to his uniqueness – a uniqueness accepted by Christian and humanist alike (*cf* the title of Dr. Julian Huxley's book, *The Uniqueness of Man*). No religion on this view, is to be despised, for religion represents man's response to the mystery inseparable from all existence: a response which transcends subjectivity. Is it even possible, the agnostic may ask, to improve upon the religious way of expressing important human feelings and aspirations? In view of such considerations as these he is disposed to support the sympathetic presentation of religious beliefs and attitudes in schools. He will, however, favour CR because he is convinced that no single religion is adequate to express mankind's response to reality.

Religious syncretists may support CR because they suppose that all faiths are ultimately identical – a supposition which, by the way, is by no means clear to all scholars. Thus R. C. Zaehner, Professor of Eastern Religions and Ethics at Oxford, writes:

> The basic principles of Eastern and Western, which in practice means Indian and Semitic, thought are, I will not say irreconcilably opposed; they are simply not starting from the same premises. The only common ground is that the function of religion is to provide release; there is no agreement at all as to what it is that man must be released from. The great religions are talking at cross purposes.[2]

Others who would not go so far as to say that all religions are basically one, take it for granted that no one religion could be true for everybody and therefore conclude that the schools

must teach a sufficient number of religions for every child to have a choice. In its most extreme and doctrinaire form, the demand is made that all religions should be taught on equal terms. However, though such demands are often encountered, it may be doubted how far they are intended seriously. Do responsible citizens really want their children to be taught the religion of Congo pigmies or the Hindu Tantras? The implications of the value judgment involved in the plea that teaching should be confined to the 'higher' religions are rarely faced.

Finding that he will be aligned with such supporters of CR as we have considered, it is not suprising that the orthodox Christian sometimes regards the teaching of CR with suspicion. If his views are biblically based he may regard non-Christian religions as worthless or even demonic. "What pagans sacrifice they offer to demons and not to God", says St. Paul (1 Cor. 10: 20). This, however, may be a one-sided view. The Bible, not to say Christian theology, does not condemn every religious experience outside the Christian or Jewish faith. The Prologue to the Fourth Gospel affirms that the Eternal World enlightens every man and even Paul himself at Athens and at Lystra assumes that the pagans he is addressing possess a genuine if limited knowledge of the one in whose image they are made.

Again, the Christian must bear in mind that whatever his private attitude may be, it is a fact that non-Christian religions such as Islam and Hinduism are now in our midst and constitute an unimpeachable argument in favour of CR. It can hardly be questioned that the teacher must help the young to understand their environment.

We must also take into account the affect of the revolution in communication. Inhabitants of McLuhan's global village are perfectly well aware that its diverse inhabitants are not all white Anglo-Saxon Protestants. In fact without some knowledge of their religion and world view we cannot hope to understand or sympathize with our neighbours either in the next house or in the next continent.

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Despite the force of these arguments, however, a case may still be made for the view that only Christianity among the religions should be taught in schools.

Two reasons given for this view are based on practical considerations. Few teachers can teach Christianity really well let alone other religions. With RE still officially classified as a 'shortage subject' it is unrealistic to expect the situation to change overnight. A speaker sent by the local synagogue, mosque or temple might be considered but in view of the difficulty which some British clergy experience in communicating their faith, it is pardonable to doubt whether Sikhs and Buddhists whose native language is not English, will be successful in explaining beliefs of their alien religions to British children and adolescents.

Secondly, teachers have not the time available. Few secondary schools allocate even two 40-minute lessons a week to RE in all classes; many offer only one per week in the first three years and possibly less thereafter. This is hardly adequate to do justice to biblical history and literature, the religious concepts of the Old and New Testaments, church history, the church's contemporary role, the philosophy of religion, Christian theology, and the social and ethical implications of Christianity. Thus there may be, as Professor Hilliard has suggested,[3] a case for introducing CR as a separate subject with its own allocation of time, but one certainly cannot reasonably suggest adding world religions to the list already enumerated.

What further objections are there to CR apart from the practical difficulties? Opponents may rest their case on the unique role of Christianity in our culture. It remains the only religion of which most people have any direct experience. Buddhism, Islam and Hinduism are not in practice alternatives available to more than a tiny minority. The influence of Christianity is felt even where it is rejected; Beckett could not have written *Waiting for Godot* against a background of Eastern religion. Those who take this view make short work of the alleged distinction between religious and Christian education. For members of our society, the only way in which they are likely to gain insight into religion is through the Christian faith. Once they have grasped the

meaning of prayer, worship and priesthood in this context they will be equipped to understand these and similar concepts in other religions. The ignorant but devout Salvationist may well have more in common with the dedicated and bigoted Muslim than the eighteen-year-old intellectual who has passed an examination in CR.

Christians or those sympathetic with Christianity may take a weak or a strong view, believing either that Christianity is the highest among a number of valuable religions, or that it alone is true and all other false. But whichever of these two views is taken, it remains true that other religions are significantly relevant to an understanding of the world we live in. Nor should it be hastily concluded that CR studies will weaken the authority of Christianity: the reverse effect is not unlikely.

John Stuart Mill makes some points which are relevant here. He advocates complete freedom to propagate all opinions, whether true or false. After arguing that if we silence an opposing view point because it is false, we assume infallibility, he continues:

> Secondly, though the silenced opinion be an error, it may, and very commonly does, contain a portion of truth; and since the general or prevailing opinion on any subject is rarely or never the whole truth, it is only by the collision of adverse opinions that the remainder of the truth has any chance of being supplied. Thirdly, even if the received opinion be not only true, but the whole truth; unless it is suffered to be and actually is, vigorously and earnestly contested, it will, by most of those who receive it, be held in the manner of a prejudice, with little comprehension of its rational grounds. And not only this, but, fourthly, the meaning of the doctrine itself will be in danger of being lost, or enfeebled and deprived of its vital effect on the character and conduct: the dogma becoming a mere formal profession, inefficacious for good, but cumbering the ground, and preventing the growth of any real and heartfelt conviction, from reason or personal experience.[4]

Taking these points in order, we find some Christians who claim that Christianity contains "the whole truth" and who will therefore deny the possibility that CR can supply anything which Christianity lacks. Even if they are right, however,

all Christians are inevitably limited by individual and cultural factors in their grasp of their own faith. CR may serve to challenge and strengthen such people by presenting them with insights which they may at first sight judge to be alien to their faith, but which, on closer examination they see to be part of it. As an illustration we may take the activism and busyness of Christianity, in the Protestant West at least. The student brought up in this tradition may judge the quietism of much Eastern religion opposed to his faith. But if the contrast impels him to a closer examination of the biblical evidence and of Christian spirituality he will become aware of a very similar tradition which he might otherwise have overlooked.

Mill's third point is particularly applicable to the state of affairs that prevailed earlier in this century when many Christians certainly held their faith "in the manner of a prejudice, with little comprehension or feeling of its rational grounds." Any honest approach to CR is bound to pass beyond mere phenomenology and description of what religionists believe and practise, to a consideration of the validity of the claims to truth made by different religions. It is too often assumed, by both the friends and the enemies of Christianity, that such an investigation will do it irreparable damage. Whereas Christians should be the first to claim that the result is far more likely to be an increased awareness of the "rational grounds" for accepting the biblical revelation and the claims of Jesus Christ.

In the same way, Christianity has become for many people "a mere formal profession", its meaning obscured and its force attenuated". When, however, it is placed alongside other world views, its significance, implications and demands become clear. There is an immense and exhilarating difference between believing that all is God and that God created all. The arrogant or ignorant people who suggest that free will constitutes a problem for Christians alone will think again when they find Indian scholars discussing the identical question and asking whether man is saved as a puppy which runs to safety or as a baby monkey which clings to its mother and is carried. The unique value attached to the

Incarnation by Christians is enhanced, not obscured, when juxtaposed with the Hindu belief in *avatars*. For whereas the *avatar* of a god appears in form only, for a short time, and at no specific point in history, the Incarnation involves a becoming flesh, a human life lived and a human death died, and all "under Pontius Pilate." A class of sixteen year olds learned what Christians mean by being "born again" only when they were discussing the Buddhist doctrine of reincarnation - a very different concept and yet one which may at first sight appear similar.

* * * *

On balance there seems to be no doubt that we ought to find a place in our schools for the study of comparative religion. It is not difficult to find reasons for including it which will convince even the most fervent and convinced Christian. First of all, CR will help children realise that religion is a universal phenomenon and not merely the invention of an otherwise unimportant semitic tribe which has burdened the western world with an entail of neuroses and meaningless metaphysics. The untypical minority are not the practising Christians of this country but the handful of people who claim to have no religion.

Secondly, CR will show the formal resemblances between all religions – that all make certain claims (except perhaps some varieties of philosophical pseudo – Christianity), all prescribe certain types of behaviour, all are associated with certain emotions, Such teaching might make people less ready to make inaccurate and partial generalisations about religion: "It's nothing but feeling" . . . "It's all things you must do or you mustn't" . . . "It's just a way of explaining what you don't understand".

Thirdly, CR will help towards a better understanding of others. Such insight is especially important at a time when we are for various reasons and in various ways being brought into closer contact with members of alien cultures. Deriding and hating what we do not understand is so common a human failing that schools should do whatever they can to impart knowledge and insight. A fourth argument, related to

this, is that such knowledge can also give deeper understanding of world affairs, most obviously perhaps relating to the sub-continent of India, divided as it is by religious factors: or in the Middle East where Judaism and Islam have done so much to mould attitudes.

* * * *

If we leave until last our fifth reason – that children should be made aware of other religious options besides Christianity – this should not be interpreted as implying any low estimate of its importance. However, a distinction must be made between a valid and an invalid form of this argument.

In its invalid form, already mentioned, the claim is made that many religions should be taught so that children may make their final choice when they reach years of discretion. Those who reason like this know as little about the nature of religion as they do about what can in practice be done by teachers of RE in our schools today. It is quite a different matter to say that an important function of religious education is to show students the need for responsible choice between alternatives. CR can help to make this clear by offering what must necessarily be a limited body of knowledge about non-Christian religions.

Finally we must consider, briefly, what the inclusion of CR would mean in practice. Clearly new systematic teacher training would be necessary and the school time allocated to RE would have to be increased. If these obstacles could be overcome, CR might find a place in primary as well as secondary schools.

In the past, the study of non-Christian religions has usually been reserved for the higher forms of the secondary school. The systematic study of Christian theology is not possible before the student is capable of abstract thinking, and the concepts underlying Eastern religions are more difficult to grasp than those of Semitic religions – at least as far as Western students are concerned. So difficult is this theoretical study that many teachers who have attempted to teach CR even with sixth form students have concluded that young people are not in fact really interested in learning about other faiths.

However, if at first the study of other faiths was confined to Judaism and Islam, which have so much in common with Christianity, better success might be achieved. As these religions are also of great importance in our society their study is doubly recommended. A study of primitive religion might also be worthwhile; resemblances to and differences from higher religions would be worth considering.

If this type of abstract and systematic study were all that could be attempted, then CR would have to be confined to the upper forms in secondary schools. But religion is a human activity and expresses itself in human ritual actions. All religions cherish sacred objects and places, all involve religious activities in the home: all are concerned with certain emotions. So, it is plain that even young children can be introduced to CR in its simplest and most concrete terms. A common centre of interest in infant education is the home and family; often work on this subject includes information about the family life in other parts of the world. Since family religion is often an important aspect of family life, there is good reason to include references to this. Similarly, as slightly older children learn about other aspects of life in different parts of the world, they should surely learn about religion.

This does not mean that they will be given a potted version of the faith concerned. When children of eight or nine study geography they learn about things not abstractions. But sacred objects and sites and rituals are concrete and memorable. It is absurd to teach children about India without mentioning Hinduism; the omission is a powerful anti-religious instrument. Geography is not of course the only area of the curriculum in which CR is of importance. Art, history, literature and music are all fields in which the phenomena of religion present themselves quite naturally for attention. Inevitably something must be said about the ideas which lie behind the phenomena considered, but the ideas are far more likely to be understood in such a context than when they are presented in naked abstraction without reference to anything save other similar abstractions. Against the background of such a concern with religious behaviour, many parts of the Bible will take on new meaning, as sacrifice, priesthood, revelation

and worship are seen in a new light. There is certainly room for stories about the founders and great men of other religions and also for stories popular as folk tales.

It would seem reasonable to pay most attention to the religions of greatest local significance, and there are clearly great potential advantages in being able to make use of pupils who practise them. Teachers should be cautious, however, in approaching such pupils. They may not be particularly devout, and even if devout will possibly be ignorant. What impression of Christianity would be given by an eight-year-old British child addressing a class of little Buddhists? Or even by an average teenager, for that matter? On the other hand, even a shy boy or girl who does not know much about the theology of his family faith can give an interesting account of a religious festival, especially if a knowledgeable teacher asks the right questions where this is necessary.

By the time children are at secondary school they can begin to see how every religion has its own system of ethics. The resemblances are very important and studying them provides an impressive argument for the objectivity of ethical standards. (Christians who believe that all men are made in God's image have, of course, no vested interest in denying that men can distinguish right from wrong without reading the Bible). But there are also significant differences, and these can be related to the theology of a religion and possibly to the character of its founder. Such an ethical approach may well precede and prepare the way for a more theological and systematic consideration in the upper forms of the secondary school. Even here, however, visual material will be helpful, and teachers of RE today are fortunate in having available a fair amount of film and filmstrip.

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JOHN AITKEN

Malthus, Medicine and Mercy.

J. T. Aitken, Professor of Anatomy at University College, London, discusses the rising population of the world and the problems which face mankind, the medical profession and the individual doctor both as a result of this rise and of increased medical knowledge. He insists that compassion for the individual must always remain a characteristic of Western medicine.

Thomas Malthus, the economist and demographer, lived from 1766 to 1834. His economic studies have had more lasting effects than his population studies but he is best remembered for the latter, more particularly because they exerted a great effect on the thinking of Darwin and Wallace. In economics Malthus was a pessimist. He was against giving too much help to the down-and-outs because he thought it pampered them and encouraged laziness. What he would say about the present welfare state is obvious from his writings. His basic thesis was that population will always outrun production, more especially in the non-industrialised countries.

The Malthusian problem faces the world today as never before, chiefly because the physical limitations of our planet are now obvious. Of the 30% of Earth's surface which is land, much is desert, tundra or too high for cropping. In fact the great majority of people live in narrow coastal strips, especially round the estuaries and for short distances up the hillside.

In the undeveloped tropical bush, there is quick easy cropping with little incentive to improve. There are plentiful banana crops for about eleven months in the year! Strangely enough, the only hope for agricultural improvement in the developing countries seems to be around the towns. Urbanisa-

tion produces the necessity for a cash crop, and so there is better utilisation of water and of the land generally. In the towns, there is specialisation of effort, a measure of industrialisation, and cash is available to buy what cannot be grown in the town.

Proteins and fats are mainly obtained from animals and so are very expensive. In economic terms the profitability of land in developing countries is such that potatoes will produce about 30 units, wheat about 14 units and beef only two units of profit. Thus half the world now lives on a very low protein, fat and vitamin diet, while in this poorer half some ten per cent of all children suffer from protein deficiency (Kwashiorkor "first/second") disease.

Part of the blame for this state of affairs lies with the customs and taboos of the people concerned. Some groups of Indians will not eat wheat which can be more easily grown in bulk, but demand their customary rice. Many tribal groups will not allow eggs, milk or fish to be eaten by a pregnant woman. Correction of these views, which must be undertaken jointly by educationalists and medicals, is not easy. In some places the fight for education and literacy is losing ground – overcome by increasing numbers. Radio propaganda may, however, provide the remedy.

In the most advanced countries, man has ill-treated the land, much being eroded by quarries and mines or covered by towns, waste-tips and air fields. The oaks of the old forests are now largely replaced by conifers which yield a quicker monetary return, yet little of value grows under conifers.

The impelling need for conversation has been much to the fore of late but the perennial problem of distribution of the available food between the places of plenty and the places of want is not easily solved. At the local level, this means the ability to buy food from the producing farmer. Even on an international scale some token payment is needed, if only continued dependence and restriction of spheres of influence. This allows the producing country to sell its surplus hardware and to find employment for some of its own surplus population. The result is a sharp stratification of the developing society into the poor indigenous peasant and the wealthy expatriate specialist.

In places like India and China, the problems are vast. India adds at least 12 million to her population each year. She has made noble efforts to produce food and in 1969 almost had a surplus in some parts. But is it impossible to store much food in India both for religious reasons (vermin can't be killed) and economic reasons (grain silos are expensive to build), so there is little hope of storing surpluses to meet further deficiencies. Only the well-developed Western countries can afford to store food and thus the underdeveloped countries have become largely dependent on USA and Canada.

Population Statistics

A sound stable economy depends on the ability to conduct rational forecasting. The collection of national statistics really started a century or so ago. Before the 18th century only rough estimations, or even unsupported guesses, were available. The collection of census data is never easy, especially in an underdeveloped country, and their publication and interpretation are often matters of prestige rather than determinants for policy making. Nations, like people, often have an axe to grind. Even in a country like the UK prognostications in the 20's and '30's of a future declining population proved quite wrong until the late '60's. Now, with an increasing immigrant population a different pattern of reproduction has appeared which may take decades to conform with the statistical expectations of yesterday, if it ever does.

The proper harvesting of land and sea also demands forecasting and this, like population statistics, is difficult. As for the final outcome some, such as Colin Clark[2] are more optimistic about the future than others[1, 4, 7] but neither party is blind to the obstacles.

Christians should set an example in showing how needs can be met. Unfortunately the agricultural missionary is a much rarer person than the teacher or the healer. Again, if the UN in the '50's had devoted as much energy to the Food and Agricultural Organisation as they did to the World Health Organisation, things might have been different today.

Hutchinson[4] claims that a country should be regarded as over-populated if the resources available from its land are inadequate to support its population. In the case of the UK,

resources have in the past included coal which we exchanged for food from outside, while the land available included much of the Empire or Commonwealth which we probably exploited more than we usually admit.

All nations must now accept some significant social controls and limitations so as to preserve freedom for future generations. Otherwise they will inherit only the painful pressures of natural ecological control – starvation, plague, disease and fights for living space.

Population Problems

Successful planning for man's welfare must, as we have noted, involve prediction of the population in the years ahead. Such estimates tend to be highly inaccurate even in the UK where the unpredicted advent of the Pill, coupled with housing difficulties, has delayed child-bearing and encouraged smaller families. The birth rate may be expected to drop below the replacement level of 2.15 after 15 years. The increasing immigrant population with its different pattern of reproduction may cause new problems. In less advanced countries the difficulties are much greater than here. The cycles of activity are hard to analyse let alone control. India has tried to encourage men to have a free vasectomy (sterilisation) by offering transistor radio sets. The equivalent here would be a colour T.V. and a life rental.

Estimates have been made of the total world populations over the centuries. The time taken for the world population to double has come down from about 200 years (1650-1850), to 100 (1850-1950), to 30 (1950-1980). The rapid change in the rate of increase is largely due to medical successes in lowering the infantile death rate and increasing longevity. There is little sign that the rate is flattening much. Donald Arthur[1] who draws attention to population plateauxs and spurts, likens the situation to the modern control system with its feed-back mechanisms. Malthus thought that overpopulation would augment undesirable features such as conflict and malnutrition and so bring the population back to a base line. If the checking factors are all removed, then an explosion is imminent unless there is voluntary restraint in family size and more food is produced.

In the mid '60's, the estimates of world population were around 3,000 million. Everyday about 270,000 were born and 143,000 died. There was a daily surplus of 128,000 babies between the 4th parellels in Africa, Asia and S. America where the average annual increase is about 2.5%.

In the temperate northern hemisphere, the increase is about 1.3% per year. In these well-developed northern countries, and possibly all over the world, the age of maturity is falling by about 6 months in every 10 years because of better health, nutrition, etc. In time this might result in younger marriages and earlier children, and could compensate for the fear of an ageing population who are mostly unproductive of basic commodities. But the many young children and young wives also, do not contribute to the growth of basic commodities.

In the past, problems of over-population in the UK have been solved by emigration to America and the Commonwealth, but now not much virgin land is left and fresh water is in short supply in many lands. There is no one to lead the modern Pilgrim Fathers out into the new worlds of space! Indeed, emigration is becoming replaced by immigration and among immigrants it often happens that only a small proportion are bread winners (e.g. less than 10% of one sample in 1966[1]).

Many Christians want to show mercy to those in need, regardless of wealth, religion or race. But the help needed is first and foremost agricultural if survival is to be ensured. Over the past 30-40 years especially, modern medicine has vastly reduced the hazards of being born and of growing up. In India and Ceylon, for example, malaria has been almost irradicated by the use of insecticides, chiefly DDT, but the number of mouths to be fed has increased accordingly! In India, Ceylon, probably China and elsewhere this has led to a stark Malthusian problem.

There have been minor eruptions of resistant mosquitoes but the benefit done by DDT or exfoliating chemicals is far in excess of any known genetic damage. The recent banning of DDT and some other chemicals is an example of the hysteria which effects mankind, especially in the western countries. The number of possible mutations laid at the feet of DDT is

a mere drop in the bucket of the spontaneous mutation pool in man. These problems must be kept in proportion.

The Christian doctor is motivated in his desire to help individuals by his philosophy of man whom he holds to be distinct from the beasts in that he is made in God's image. For him, human life is a sacred trust: the way in which it is lived will exert a marked effect on a man's life in the hereafter, whether it is to be spent in God's presence or not. Because of these factors human life and death differ from animal life and death.

Family Planning

In view of the world population situation, all must take a responsible view of parenthood. For the Christian, this is enjoined frequently in Scripture. Parents are responsible for their children's care and welfare. They, not the State, must provide the food, clothing and shelter. There is certainly no direct command in Scripture against planning or spaced children. Nowhere is it implied that the sex act is only for the procreation of children. In this the teaching of the Roman Church differs from most Protestant churches. The Roman teaching is difficult to uphold from Scripture where man and woman are told to be 'one flesh' (husband and wife). At times, the Roman Church appears to be quite irresponsible in not curbing population increases, as also in its view that the mother and unborn child have an equal right to live.

It is generally conceded by Christians that killing is wrong, but methods of family planning which prevent fertilization do not destroy human life. The sperm may be killed by the million by a mercurial compound and in any case, many are naturally voided without being placed in the female canal. The more permanent methods, tying of the male ducts or the female tubes have legal implications because of the irreversibility. If a woman is widowed, she may want to marry again and her new husband may feel cheated if she has been sterilised. A similar state can occur with the man.

Supposing fertilization has occured, what then? Everything which results from the union of human sperms and ovum is potentially human. It may never reach independent life separate from the mother, so this potential is not realised.

The unborn child is totally dependent on the mother and so has limited rights as an individual. Only after birth does it assume the full rights and privileges of an independent human being.

The great majority of abortions occur spontaneously and when the conceptus is examined most carry chromosomal abnormalities and many are found to be grossly deformed. Thus spontaneous abortion is a natural defense mechanism. Up until recent times, the reasons for surgical abortion were medically defined and limited broadly to danger to the mother's health. The law has been extended now to include certain socially- defined conditions. It is hard enough to define the medical limits and many a woman who desparately wants a child can be sucessfully carried to term with quite severe illnesses. To define and limit social reasons is almost impossible. The excuse in some cases is merely a matter of convenience. If however the human conceptus is not qualitatively different from that of the apes and other animals, then little objection to the Act can be raised in this over-populated planet of ours.

Unfortunately the added load of surgical abortions has brought some hospital departments to a stand still. These women may take the places of others who are waiting operations for urgent medical causes. Is this right and who is to decide?

The ease of obtaining an abortion in some places and the widespread adoption of the 'Pill' has removed all restraint and the need for discipline on the part of some men. However, there is always a need for a responsible attitude to the sex act, even more so, when it is not a procreative act.

In Old Testament times, accidental miscarriage and also purposive miscarriages were recognised (Ex. 21: 22). If no injury was done to the mother, then a fine was demanded by the husband and agreed by independent elders. If the mother was injured, then just retribution was demanded up to life for life. In these cases the value of the unborn child was obviously recognised though not as highly as the wife and mother. It must always be realised that though abortion may be less dangerous than having the baby, the operation is not without its hazards even today in the UK. An act of apparent

mercy to the mother may occasionally end in a greater tragedy, her death.

In most of our big hospitals there is a unit for dealing with babies prematurely born. The intra-uterine age when a foetus can be incubated and rescued back to independence is being pushed further and further back. Someday, it may be possible to put a very young child on a heart-lung-incubator machine and so carry him to term. This is not yet possible and there are many technical problems to be overcome. Some people question the ethics of such an attempt.

At the moment, the dead foetuses are usually disposed of by incineration. If it should become possible to obtain from the foetus some rare hormone or chemical which could be used to help others, then I see no reason why this should not be done. After all the placenta, the afterbirth, is part of the foetus (not of the mother). It is derived from the fertilised ovum and its chromosomes and genes are just like those ot the foetus. Yet the umbilical cord is cut after the child is born and when later the placenta comes out, it is put straight into the bucket without any qualms of conscience. Many animals are much more economical of tissue and eat the placenta which is rich in blood (iron) and in hormones that help its uterus to contract and involute.

Already tissue obtained from foetuses has proved invaluable in research into certain types of acute leukaemia. In the present circumstances, as in many occasions in life, the liberty to research must not become license to give offence or to act regardless of the consequences. In the future, rules and red tape may so restrict research that progress becomes very difficult or even impossible. The present uncertain situation has produced an embargo on much research work on foetuses obtained at surgical abortions. However, all present research is a long way from the experiments done in Nazi concentration camps, but the emotive words "commercial dealings" or "slaughter" do not cool down the situation. The Christian doctor and researcher must have an extra-sensitive conscience so that he can speak out and warn of danger when necessary.

When the foetus actually acquires its soul and becomes truly human is still a matter for speculation and discussion.

Whatever is decided about this, potentially it is a human being and as such must be treated with respect.

In making abortion easier, the Government is working with Malthus, but the doctors appear to work against him because they are now able to give fertility drugs to a sterile woman and a multiple pregnancy may result. Of the three to six children usually born, most need very intensive care and it is yet to be seen how many will reach maturity.

Today, the doctors have a very massive armamentarium of drugs and devices to help their patients and so to prolong lives. Nowadays the newborn has almost twice the expectation of life he had 100 years ago and many centenarians are kept going with good nursing, antibiotics and loving care.

There are however two important questions to be asked: what is the *quality* of life that is lived?, and what is the *purpose* in living?

Quality is difficult to define but where, because of disease and disability, life is a real burden, most doctors would allow natural processes to take their course and leave the patient to die quietly and with dignity. The doctor should not officiously strive to extend the process of dying. If in any doubt, then of course, the necessary antibiotics, oxgyen and all the other aids would be given.

Secondly, there is the question of the purpose in living. "What is man's chief end?" It should be to glorify God and to enjoy Him for ever. Where the person born is very badly deformed, or has been badly injured by accident that independent life and full comprehension is impossible, then again withholding treatment and allowing natural processes to take their course is probably not wrong. In many car accidents irreparable brain damage is obvious. In these circumstances, the quality of mercy is being strained very far if a great deal of time, effort and money is expended, especially if it is at the expense of someone who has a better chance of a useful recovery.

In sophisticated Western countries, the problem has been thrown into stark relief by the development of the Intensive Care Units. The clock cannot be turned back nor ignorance pleaded as to the treatment. Those doctors who are involved in ICU's admit that their first duty is to their patients and

so they go all out to obtain the necessary funds for the kidney dialysis machines and the heart/lung machines, etc.

Some of these real and hypothetical problems of priorities have been discussed by Gerald Leach[5]. His approach is far from being Scriptural but he analyses many of the situations which confront or will soon confront us in Western countries. Unfortunately, he leaves the decision making to 'Society' but does not indicate how 'Society' is to produce its rules, whether by revelation, by democratic discussion or by Ministerial decree. In some places the attempt was made to decide who should go on the kidney dialysis machine by a Committee of doctors and laymen. The latter soon opted out because they had not been trained to make this kind of decision!

The cost of treatment in an ICU is enormous. This again must be set in the context of world need. Some developing countries have to finance their entire health service out of about 50p per head per year. There are numerous other problems of priorities too which Leach discusses.

Euthanasia

Euthanasia poses yet another problem. In this connection Duncan Vere[8] draws attention ot three important misconceptions.

1. Relief of pain is now possible by drugs which do not depress respiration, as morphia does. The administration of these drugs is *not* euthanasia-in-practice by the medical profession, as its advocates maintain.

2. The unconscious patient on a heart/lung machine who is totally dependent on the machine cannot be said to be 'alive', though he is not technically 'dead'. If the damage is so great that the doctors decide to turn off the machine, this is not euthanasia either. It is leaving to natural processes the outcome of a situation where medical intervention can no longer help. The decision to turn off the machine is a medical one based on the judgment of the doctors.

3. Few doctors are so arrogant to think themselves infallible. Estimates of the chances of life are difficult to make and nature often surprises even the most experienced by an apparent reversal of some process.

In euthanasia, some doctor, nurse or attendant would have to set about the deliberate dissolution of an adult, innocent of any criminal act. This, as Vere says, would be an innovation in the history of the UK. Up to now the doctor has been looked on as a friend, but the anxiety of the aged grandparent can be imagined when she sees the doctor preparing to inject what he says is penicillin but what she thinks may be cyanide! This would not be mercy.

However, there is an area of medicine dealing with old folk, geriatrics, where the pressure is on to keep the patients mobile and return them home as soon as possible. But often there is no one at home to look after them, or no room, so the inevitable tendancy is to return to a bed in hospital, to vegitate and to die. It has been suggested that most people live until they are about 20 before ever coming near death. Our grandparents faced death regularly in their large families, but sex was rarely mentioned. Today, sex is everywhere, but death is never mentioned. This situation leads to lack of purpose and meaningless despair. The Christian can face death because the sting of death, sin, has been dealt with in Christ's death.

Whether applied to individuals or to populations the main aim of medicine is to prevent and cure disease. This by itself leads to more people being alive, who would otherwise be dead. Mercy and compassion would appear to be acquired characteristics and as such not handed on to children. The built-in character would appear to be "man's inhumanity to man". Those things we ordinarily label as 'bestial' are more indulged in by humans than be animals. One of the very early signs of the developing Christian conscience was when Christian families refused to kill their babies by exposure, as was the custom of many families in Roman times.

In modern times too, most of the medical successes started in Christian-based institutions and have reinforced the upward trends in the population.

Family planning is hard to sell in the 3rd world. (a) because folks know that the infant mortality rate is still far too high and the expectation of life (even after 10 when most childish hazards are passed) is also still very low. It is about two-thirds that of most western countries, (b) because folks

look upon family planning as a device invented by western countries to diminish the number of Afro-Asians in the world!

As in so many problems of today, there is both a technical and a moral side to be considered. All the 'know-how' without incentive and moral drive leads to despotism and great power to the so-called 'privileged' few. The vast majority are reduced to mere serfdom.

Individuals and countries must get their priorities right. A balance of population and food production by ethically acceptable means must be found. This may mean strict family planning and large food factories but each country has to decide whether it is striving for the moon or for maize.

Christians can restore the sense of purpose in life for many who seem aimless and leaderless. The Christian Church over the last two centuries has done much to help in agriculture, medicine and education. But the problems are rapidly getting greater, not less, because of the rapid rate of increase of the population. Is the quality of mercy being strained too far? It is hoped not.

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Some Thoughts on Dreams

Dreams are closely associated with all religious faiths, Christianity not excepted. They figure prominently in the Bible while the story of Dives and Lazurus may suggest that experiences akin to having nightmares are possible after death. We cannot learn too much about the subject.

In a fascinating Symposium on dreams, edited by Milton Kramer, no fewer than 35 authors have a chance to express their opinions.[1] Nor is there much overlap - a common fault in badly edited symposiums. The result is a remarkably interesting volume. After perusing it, however, one is left with an overwhelming feeling that when all is said we still know next to nothing about the subject. Much less, indeed, than we thought we knew when Freud's ingenious theories, which were published in book form in 1900, seemed alone in the field.

Recent years have witnessed one interesting discovery, but alas, only one. It is the discovery by E. Aserinsky and N. Klietman in 1953 that the phases of sleep in which the eyes move rapidly (rapid eye movement state, REM-state or D-State) are accompanied by vivid dreaming; for if a subject is woken up at such a time he will usually (75% of occasions) be able to recall what he has been dreaming about. If, on the other hand, he is woken up when his eyes are moving slowly or not at all, dream recall is rare. D-states occur 6-8 times in an average night's sleep.

Since this now historic discovery there have been (up to the date of publication of the book under reviews) 16 detailed experimental studies on the subject all confirming the original observations.

Well, why *do* we dream? For Freud dreaming is a discharge of the unconscious. But L. J. West tells us that discharge theories make him squirm. A view commonly encountered is that dreams serve to rid the nervous system of the clutter of material accumulated during the day – in current jargon the brain is like a computer which needs occasional clearing of data so that more may be assimilated. To test this view, Demant experimented to see if deprivation of dreams would make his subjects irritable and nervous. To be sure it did just this, yet increase in tension was not confirmed by later workers. Psychological findings are difficult to confirm.

For Freud dreams are concerned with the discharge of instinctual drives, but more especially that of sex. This was suggested by the frequent presence of sex or sex symbols in dream life, but the alleged sex symbols are much more frequent than the sex and they *could* have been misinterpreted. The evidence is inconclusive. Boss (says H. E. Lehmann) suspects that many supposed sexual dreams are indicative of an intense desire to come closer to another person on a non-sexual level. The discovery (by Fisher) that penile erection often accompanies D-states seemed at first to constitute a brilliant confirmation of Freud's thesis; later work showed that the same thing happened in sleepy newborns and old men well advanced in senility. All is in the melting point again!

Freud invented the *censor*. When our dimly conscious thoughts seem so repugnant to us that we cannot, *dare* not, contemplate them in their stark reality, this imaginary imp obligingly wraps them up in symbols to soften the blow. None of the writers in this book takes the censor seriously. It was invented, we are told, to buttress Freud's sexual theories against the impact of brutal fact; its existence is not supported by the newer observations. If, at the beginning of REM, the sleeper is awakened before the censor has had time to invent disguises for the dream that has started, the dream that is remembered is not on average more repugnant than when the sleeper is awakened at a later stage in the D-state after the censor has had opportunity to get to work. Again early awakening does not terrify the subject as it should if Freud is right.

J. Wheelwright says his patients tell of incest dreams which really *ought* to be censored, yet they are not. In short, despite Frued's plausibility, evidence for the censor is hard to find.

If Freud's views hold no water, then why do people dream? A variety of unsupported theories will be found in this book, but we simply do not know the answer.

An interesting hypothesis (due to Synder) is that the D-state has the function of preparing us to wake up – a view quite contrary to Freud's which makes the dream a protector of sleep. Another view (which seems to be true of some children) is that people dream to amuse themselves. Much better spend the night dreaming than doing nothing!

The Symposium includes essays on the theories of Jung, Adler and the existentialists. For Jung, C. A. Meier tells us, the unconscious is a continuum in space-time in which, in dreams, all kinds of stimuli are superimposed. On the Adlerian view (discussed by B. Schulman) the purpose of dreams is to be found in the feelings they arouse. For instance you may have a private reason for frightening yourself. A patient of Rudolf Driekurs dreamed he was in prison. That evening he had filled in his tax return dishonestly, but next morning he corrected it before

posting. He did not at the time remember or in any way associate his dream with his action, yet as he realised afterwards the dream had generated a mood in which he no longer wanted to act dishonestly.

From a Christian angle this is interesting. It may well be that God intended dreaming to put us in a mood to do right: this might be a teleological reason for the existence of dreams. In the rush of life we decide to do wrong and rationalize our behaviour: in dreams we are warned, or influenced, perhaps without our knowing it.

Some of the most interesting of all the newer ideas about dreams and dreaming come from the existentialists; exemplified particularly by Medard Boss, the Swiss psychiatrist. Boss's views are here outlined by H. E. Lehmann.

Boss distinguished between three types of dream interpretation. An example is given of a man who dreamed that his brother was squeezed into a drawer. For Freud (*objective* interpretation) the dream says, 'I wish my brother could be boxed in: he meddles in everyone's business'. For Jung (*subjective* interpretation) the message is, 'You could be as happy and free as your brother, but you are cramped. Loose yourself before it is too late'. For Boss (*phenomenological* interpretation) it is the dreamer's way of expressing his narrow waking existence. First of all he must accept the situation as it is.

Elsewhere[2] Boss describes his therapeutic method. By way of example he details the case of a female atheistic patient who had recurrent dreams of monstrous and terrifying snakes and worms. Freudian analysis, which interpreted these as phallic symbols, proved useless. Boss urged her to reach a better relationship with the creatures, to let the snakes live happily in her world. Was she being cruel to them? Was that why they appeared so menacing? After a long fight against her inner fears the patient dreamed that she plunged head-long into water where the creatures lived. She was encouraged to draw the forms she saw. Gradually the dream-like visions took on religious forms. A figure of Christ appeared and church bells replaced snakes. Yet not a word about religion had been said.

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"We are not the first"

Some evidence exists that men, or man-like creatures existed on earth at various times up to a hundred or more million years ago, but this evidence has never been properly collected or assessed. Irresponsible and highly unlikely theories about very ancient man and his technology are, however, being bandied around. In this Review some of these theories are mentioned and reasons given for their dismissal.

A survey of the evidence that man, or civilised man, existed long before conventional views allow would be welcome at the present time. Human footprints found with those of the dinosaurs dated around 120 m years ago, shoe marks in coal seams 15 m years old, the maps of "the ancient Sea Kings" studied by Hapgood[2] which allegedly show Antarctica's coast line before the formation of the ice cap, nails and also a cube of steel with a channel cut round it found in coal are odd findings difficult to reconcile with orthodoxy: it is time they were assessed. At last a volume has appeared professing to supply the need.[1]

It can only be said that the result is keenly disappointing. Much of the material is here but its presentation is spoilt by the author's journalistic style and butterfly mind which flits from topic to topic just as each gets interesting. There is no real sequence and a critical judgment is sadly lacking. Sometimes, even, the subjects discussed seem wholly irrelevant. What, for instance, has the alleged success of certain alchemical transformations a few centuries ago to do with the theme of the book? No one doubts that man was on earth in recent times. As for many of the suggestions made, they too often border on the irresponsible and bizarre while sensible possibilities seem to be deemed too dull for mention. (For example, much play is made of the stories of the everlasting lamps, found still alight in modern times. The possibility, not mentioned, that some of these were due to ignition of natural gas seepages seems more reasonable than Tomas's theory that they were electrical contrivances using sophisticated lamps with a life of thousands of years!) In general, too, the documentation is poor – there is little more than a bibliography, a number of the books in which are as irresponsible as the present one.

However, neither this book nor others like it[3] should be ignored by

Christians. To a section of the public they offer a ready rationalisation for the rejection of Christianity. Beings from other planets visited our earth long ages ago (or not so long - according to Tomas the Siberian meteorite was a cylindrical foreign space vehicle which exploded accidentally just after it had altered course!) and were mistaken for gods. Biblical and apocryphal passages describe both space vehicles and space journeys (eg Elijah's chariot, Book of Enoch etc). The Bible has little to tell us that we cannot learn from other sources. Spacemen, UFOs, alchemy, the prophecies of Nostradamus, and ancient atom bombs displace biblical miracles while God himself is only an extra-terrestrial man in a space suit.

We need to think seriously what answer we should give to this line of thought which is only too acceptable to a section of the young of today. The following points appear to be relevant.

(1) In a masterly survey of the evidence the British scientist R. V. Jones considers the possible extra-mundane origin of UFOs. What finally convinces him that no one from outer space is now visiting us is that, in view of the many thousands of UFOs seen, apparently over thousands of years, it is fair comment to say that by now "surely one of them must have broken down or left some trace of its visit". But of trace there is none. A UFO might perhaps be possessed of "fantastic reliability, but this adds another order of unlikeliness", he adds. He realises that scientists have quite often made bad mistakes in the past but then (referring to one of the worst of these mistakes, that of the denial of the existence of meteorites) even the Parisian Academy did at least have the meteorites whose existence they denied, for examination.

Similarly, if Tomas is right in his contention that the present race of civilised man is not the first on earth, why has no complex mechanism from the past ever been unearthed? A crashed aeroplane, a mechanical chariot, a power station, a loom, or even a boiler? A few ancient pictures are produced in evidence one of which might conceivably be taken to be a rocket, but they are not convincing. If superbeings from another world have been here before we should expect to encounter their machines reasonably often.

(2) To this we should add the astronomical evidence that the nearest stars are of the order of tens of light years away: the distances are so huge that it is difficult to believe that successful journeys have been made.

(3) If, as Tomas and others assert, the ancients knew of anti-gravity devices, they must certainly have surpassed us in their know-

ledge of science. If their "gods" had interplanetary vehicles which could travel vast distances in space, they could not have depended on chemical fuel but must have been able to tap atomic energy. But despite the world-wide searches for uranium deposits conducted from the air, and on the ground by thousands of amateurs who use inexpensive kits, no one has every yet found a pre-modern radioactive source of greater intensity than natural ores. But if a high level of knowledge existed in the past, it is unbelievable that there are no ancient concentrations of radioactive elements with half lives in the million or hundreds of thousands of years range. If godlike super-technicians from other planets once brought these things to earth, why have none ever been detected, seeing that they are so easy to detect? The sensible answer is that they cannot be found because they do not exist.

Where, then, do we stand? That the recent ancients of classical times did, in fact, hit on many technological innovations resembling those in use today, there is no need to dispute. The flotation technique for mineral dressing was used in at least one Roman mine; there is respectable evidence that batteries were used by the ancients and simple calculating instruments too (Tomas gives a possible picture of one) and there is Stonehenge interpreted by some as an astronomical computer. And so on. Perhaps methods were sometimes hit upon which we have not rediscovered. Yet they did not, it seems, discover printing and every time anything was discovered the knowledge was soon lost: the same knowledge had to be rediscovered over and over again and progress was impossible.

Man, or a creature like him, may have existed at an extremely early date. If genuine the relics he has left are rare. We should dearly like to know more but at best, so far as we know, the nail represented the limit of his technology.

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REVIEWS

BIBLE ANIMALS

G. S. Cansdale, *Animals of Bible Lands,* Paternoster Press, 1970, £2.50

A century has elapsed since H. B. Tristram and J. G. Wood published their respective accounts of Bible natural history, which became standard works. During this period no comprehensive study of biblical biology has appeared in the English language. The Paternoster Press is therefore to be congratulated on its decision to produce, in two volumes, an up-to-date treatment of this interesting field. This, the first volume, is to be followed by a second dealing with the plants of Bible lands.

The Author, who is well known through radio and television programmes, is an experienced field naturalist; and this, coupled with his considerable research evidenced on every page has enabled him to write a book which will remain authoritative for many years to come.

The first two chapters deal respectively with the geography of the fertile crescent and the influence of man on the terrain and its animal life. The theory that the climate of Palestine has changed significantly since Bible times is discussed, and the Author comes to the conclusion that it probably has not.

The remaining chapters deal with the animals in various 'popular' categories. They are grouped according to their value or interest to man, as the Biblical writers would no doubt have viewed them. Thus we have cattle, beasts of the chase, beasts of prey, birds or prey, winged and creeping things, etc. Nevertheless, the Author makes plain, for the benefit of the non-biologist, what the taxonomic relations are of the animals he discusses. Each animal mentioned in the Bible is identified as closely as possible, its natural history described, and the significance of the Biblical allusion discussed. The treatment is scholarly, the Author drawing on historical, archaeological, linguistic, as well as zoological information. Despite this, the presentation is popular; the style, easy reading and, at times, even chatty.

Some appendices, a short bibliography, a couple of maps, some full indices, and some excellent photographs complete the book.

The main value of the book will be as a work of reference for Bible students and ministers concerned about accurate exegesis of the many biblical passages referring to animals. But, in addition, it would be a useful introduction to biblical biology for naturalists or archaeologists intending to work in Bible lands.

G. E. BARNES

POWERS OF NATURE

R. Harré, *The Principles of Scientific Thinking*, Macmillan, 1970. £4.50.

This is a fine work the writing of which must have entailed a great deal of patient and dedicated work. Though the subject matter is far from easy the presentation is remarkably good and original. At the beginning of each chapter the reader is presented with a resume, covering two or three pages, of the argument to follow: this is a feature which greatly facilitates the assimilation of Harré's arguments. The author's evident intention is to cover every aspect of thinking in the scientific field; it would certainly seem as if few fish have escaped the Harréan net.

The earlier chapters are concerned with deduction and induction, the use of models (some useful classifications here), the laws of nature, protolaws (hypotheses which may later be elevated to laws), confirmation, truth, statements immune to falsification and the principles of indifference which relate to space, time and parity (e.g. there is the rule that position in space has no physical consequences).

Perhaps the closing chapters in which the author utterly rejects the phenomenalistic view, will prove most interesting to the general reader and to the Christian in particular. A short summary of some of the points made in these chapters may not be out of place.

In chapter 9 Harré raises the question of explanation. In particular, what kind of explanation of nature can be accepted as ultimate?

In science, we explain change in terms of the unchanging but we do not forthwith proceed to look for an explanation of the unchanging in its turn. Thus we explain the seasons in terms of the movement of the earth round the sun, but we do not ask why the law of gravity or the sun and earth remain as they are. Also we do not try to explain numbers unless they seem to be connected with the necessity of law: we do not for example try to explain why there are just nine planets, not eight or ten.

This leads on to chapter 10 on the 'Ultimate Structure of the World' and to the further consideration of change. When, in science, we explain in terms of the unchanging, we may do so in two distinct ways: We explain the whole in terms of the parts or the parts in terms of the whole. Thus, taking the planet Earth, we may explain it by saying that it is made of rocks, etc., *or* that it is a part of a planetary system (a type of explanation particularly prevalent in biology).

Both these kinds of explanation lead to regresses: it is not thinkable that we shall ever reach the end of a regress or even have means of knowing if we do. The earth is made of rocks, which are made of molecules and atoms, which are made of electrons, neutrons and protons, which are made of . . . . The planetary system is part of a galaxy, which is

part of a group of galaxies, which is part of the visible universe, which is part of. . . .

Parallel with this we may explain in terms of what went before, or what will follow after. The car, made of parts, was assembled in the factory: the position of each part was determined by the forces applied. The making of the car is also to be understood in terms of what will be in the future, what function it is designed to fulfil. The future of the assembly of bits is the (partial) cause of their arrangement, they are arranged with this teleological end in view.

Again regresses confront us: causes can be postulated backwards or forwards endlessly. Stars and planets came into being as a result of evolution in nebulae, perhaps nebulae condensed from matter in space; the matter in space was there because of previous matter in a particular unstable state, which was there because. . . . Working forwards there is the 'heat death of the universe', but when is a 'death' not a 'death'?

(It seems odd that atheists of the Bertrand Russell kind imagine tnat because belief in God as Creator leads to the regress, Who made God? Who made the Being who made God?, who made the . . .?, the God-hypothesis must be rejected. On this showing science as well as God must be disallowed).

Since the explanations of science, whether static (what are things made of?) or dynamic (why do things happen?) both lead to regresses, they cannot be ultimate. Where then should we look?

In the seventeenth century the so-called primary qualities (extension, hardness, inertia etc) were commonly taken to be ultimates, as by Newton in the *Principia.* But Locke (to be followed later by Kant, Boscovitch and Faraday) took a different view. Locke quite correctly denied that a so-called quality is a quality at all; an alleged quality, he said, 'is nothing but a power'.

Philosophers, following Hume and more recently Ryle often attempt to explain away the concept of a power by reducing it to the empirical. 'It is brittle' means, according to Ryle, 'if maltreated it will break. . . together with a trail of subjunctive conditions of varying degrees of specificity trailing after it' just in case it does not break! Dr. Harré submits this kind of analysis to devastating criticism. Powers, he argues, are genuine enough: they are not to be dismissed or explained away. A vase can be brittle and yet not break, a stick of dynamite has the power to explode, if detonated, but may never do so.

Harre's way of thinking is, he admits, foreign to that of the tough-minded empiricist who thinks of 'powers' as identifiable with the occult qualities long ago discarded by science. Mere relics of magic; fishy, soft and mysterious, he reckons them, a concept appealing only to those with consciences too tender to face the harsh realities of empiricism. He prefers to confine his interests to 'the obvious, and the overt'. (p269).

But the empiricist is wrong. *Power* is a rich concept: it has a rightful place in science. With masterly skill Harré turns the tables on 'Humean emptiness'. He shows that powers are not occult qualities at all; indeed, they are not even qualities. In what ever language they may describe their activities, all scientists undoubtedly accept the existence of powers. The laboratory experiment is designed to test hypotheses about these powers – does the dynamite explode? To discover how a thing behaves is to discover its powers: often we must leave open for the time being what it *is*.

An important point to note here is that ultimate reality can never consist of particles for as Boscovitch argues, particles which interact must be deformed, i.e. they must consist of parts which move at different relative speeds. So, they must consist of yet smaller particles and cannot therefore be ultimates. In the long run ultimates must be powers. Dr. Harré (p 313) believes that Faraday had the clearest conception of powers of any writer in the past. Faraday saw clearly, for example, that polar theories could be fundamental. This led him to a field theory in which each point in space is a centre of mutual influence on every other.

The conclusion of the book may be summarised in two sentences. 'We discount phenomenalistic positivism as an internally consistent but absurd caricature of natural science' (p 305); 'Every fundamental theory must, as expressed in the language of physics, be a field theory' (p 313).

The author does not discuss religion but his philosophy is one on which the theologian might build with profit.

SOAPY SAM

Standish Meacham, *Lord Bishop: the Life of Samuel Wilberforce* (1805–1873), Havard and OUP, 1970. 13.5 dollars.

This fascinating book tells the story of Samuel Wilberforce, 'Soapy Sam' as he was called in his day for, as he used to explain, he was often in hot water but always emerged with clean hands!

Samuel Wilberforce was one of the four sons of William Wilberforce the evangelical of the Clapham sect who did so much to eradicate the slave trade. Samuel was the only one of the brothers to maintain his connection with the evangelical party 'till middle life. Not 'till he published his father's biography, revealing the tolerance and catholicity of William Wilberforce's Christianity, did the narrower section of the

evangelicals turn against him and precipitate a controversy. Even so he had equal or fiercer disputations with the High Church of his day.

Samuel Wilberforce was undoubtedly a born controversialist, always outspoken on issues about which he felt deeply. His attack on the authors of *Essays and Reviews* was every bit as severe as his well-known attack on Darwinism to which all too few pages in this book are devoted.

Wilberforce is often depicted as an ignorant layman who unwisely ventured to attack Huxley at the famous meeting of the British Association in 1860 and was deservedly beaten. This picture is unfair to him: his scientific credentials were considerable. Besides a life long interest in natural history, he was Vice-President of the British Association and had served on the Council of the Geological Society. Moreover, he had many friendly relationships with leading scientists of the day such as Buckland, Lyell and Owen. Darwin said of his attack on Darwinism in the *Quarterly Review* that it was uncommonly clever; it picks out with skill all the most conjectural parts and brings forward well the difficulties'. Despite his occasional bantering ('our unsuspected cousin-ship with the mushrooms') Wilberforce is still worth reading: unfortunately it was this regrettable bantering which precipitated the unfortunate episode at Oxford.

This is a fine biography, pleasingly written and packed with information about Victorians and the state of the church at the time. It is a pity that so little is known about Samuel Wilberforces's youth but the author has certainly made the best possible use of information available to him.

VICTORIAN SCIENCE

G. Basalla, W. Coleman and R.H. Kargon (Eds.), *Victorian Science,* (PB) Anchor Books, 1970, G. Bell and Sons Ltd., 510 p. £1.20.

This is a reprinted selection of fifteen of the *Presidential Addresses to the British Association* given in the latter half of the nineteenth century; it also contains two Editorials from *Nature.*

The immediate impression one gains on opening the book is one of gratitude for the clear modern print: it is a great deal easier to read than the originals from which it was taken. The book is divided under subject headings *(Science and Society, The Physical Sciences, The Life Sciences, Method and Metaphysics* etc), there is a good index and each Address is prefaced by useful notes about the author's life and work.

The Editors explain at the beginning that the book is intended as a representative survey of Victorian Science and that they have dispensed with the "customary scholarly apparatus and editorial marks". In fact it is, at times, quite hard to find one's way about when comparing with the originals: half a dozen pages or more down to a single paragraph may disappear without the slightest warning, thus giving at times a staccato effect. It is understandable that omissions were necessary but the insertion of dots would have been helpful. The omitted parts, eg, in Tyndall's address in 1894, are often of great interest. Sometimes the policy seems to be to omit what later turned out to be wrong. For instance William Fairbairn in 1861 referred to Brewster's theory that the colours of gem stones are due to the presence of coloured hydrocarbons and not to oxides as had previously been supposed. This interesting aside is simply omitted. All footnotes in the originals are also omitted.

In view of their subsequent influence on the history of science, it might seem that some of the Presidential Addresses to Sections of the B.A. would have had better claim to republication than some of those which are here reprinted.

Nevertheless, these points notwithstanding, the collection of the Addresses in inexpensive handy form is to be welcomed, the more so as there is lengthy reference to the perennial issues of science and theology.

AN ECCLES MISCELLANY

J. C. Eccles, *Facing Reality,* 1970, Longman (and Springer Verlag), 212p, £3.50 and PB £2.25.

Everything that Sir John Eccles, brain scientist, Nobelist, writes is worth reading and this book is no exception. Though most of material here collected has been published before, it is not all easily available and it is gratifying to have it in a single volume. Inevitably there is some repetition but this tends to be confined to striking sentences rather than to long passages and little space is wasted.

Because the original audiences or journals were so varied, the standard expected of the reader varies too. Sometimes (for the non-specialist) the subject matter is beclouded with technicalities, at others its clarity, simplicity and charm is reminiscent of a Sherrington.

Eccles covers the whole gamut of scientific-philosophical thinking – the mechanism of the brain the role of synapses in memory; the

self and its relation to anatomy; the unity of conscious experience (Eddington Lecture); the nature of science; freewill and the conditions necessary for the "free flowering of science". Towards the end he discusses the nature of the soul but here he seems to have little fresh to say.

Let us look at some of his comments. Among the perennial problems discussed is that of life elswhere. Following G. G. Simpson (1964) and T. Dobzhansky (1967) he argues that if a materialistic picture of evolution is accepted, the evolution of man cannot have been deterministic in character but opportunist – as is, indeed, implied by the doctrine of the survival of the fittest. The factors involved in man's emergence were so extremely special, so very long continued, so incredibly intricate, that it is almost impossible to suppose that man or man-like creatures would or could have arisen elsewhere. This conclusion would still apply if say, in our galaxy, there are millions of other planets suitable from a physical point of view for the maintenance of life. Consider that on earth, though there are (including those that have been but are no longer) many millions of species, only *one* of them has attained rationality. To suppose that beings like ourselves are to be found elsewhere is therefore "not merely questionable but improbable to a degree which would usually mean rejection of a scientific hypothesis" (quoted from Dobzhansky, *The Biology of Ultimate Concern,* 1967).

The technology of space travel reminds us that, apart from hit or miss raids, there is absolutely no other possible place for man to live except on earth. All men must realise that they share our wonderful and beautiful planet as brothers and that there never will be anywhere else to live. Modern astronomy, it is said, derogated Earth from its privileged status as centre of the universe, but in this context astronomical arguments are trivial. The criterion must surely be that earth is man's home; for him this home is central. There is no other (p 100).

Chapter 7, in which Sir John discusses the effect of his philosophy on his science, is of unusual interest. When young, he tells us, he accepted the inductive view of scientific discovery: it was the scientist's job to induce the true hypothesis from the facts at his disposal. As part of this philosophy he held that " it is the highest degree regrettable and a sign of failure if a scientist espouses an hypotheses which is falsified by new data so that it has to be scrapped altogether". But alas, precisely this happened to *him.* He had advocated an hypothesis which was

beginning to look wrong: he felt very depressed for failure in the scientific profession loomed ahead.

At that time Eccles believed that transmission across a synapse was electrical in character. Fortunately, just about this time he read Popper and was convinced by Popper's thesis that hypotheses ought to be so framed that they can be refuted: it was therefore no mark of failure if this happened, indeed it was a great credit to the man who was able to put forward a testable hypothesis. This proved "the best news I had had for a long time" says Eccles. Henceforth he deliberately couched his hypotheses in forms which could be refuted and rejoiced when falsifications followed. "Other scientists were being wasted in defending the no longer defensible" but thanks to Popper he, John, made great strides in his chosen field. Released from fear and remorse his science became an exhiliarating adventure.

Sir John feels that most of his fellow scientists still do not understand the scientific method: they fail to think of science as a shared enterprise and adventure of mankind rather than as a means to achieve personal advantage or to show off equipment.

Eccles's theory of freewill is well enough known: here it will be found again, updated of course and presented more persuasively than ever. Building on Eddington's suggestion that mind might control the behaviour of matter within the limits imposed by Heisenberg (a view which Eddington rejects because he was thinking of an object as large as a neurone) Eccles points accusingly at the synaptic vesicle of 400Å diameter, which has an uncertainty of position of about 50Å within one second. It is here, he thinks, that mind might operate. For significantly enough this distance, 50Å, turns out to be the thickness of the presynaptic membrane across which specific transmitter substance must be discharged. Using Ryle's colourful imagery, the ghost operates a machine not of ropes and pulleys, but of "neurones that are momentarily poised close to a just threshold level of excitability" (p 127).

Enough to whet the appetite! One final comment, this time on the volume itself.

The printing is rather small, but clear and generally typical of the Springer 'house' style. A curious feature is the use of high gloss paper for parts of the book and not for others, rather evenly mixed between the sections. Reading of the high gloss pages is of course quite difficult unless one's reading lamp is exactly positioned!

POPPER AND KUHN AT WAR.

Imre Lakatos and Alan Musgrave (Eds.), *Criticism and the Growth of Knowledge,* CUP, 1970, 282 p., £1 or 3.45 dollars PB; £3.50 board.

The rather forbidding title of this book gives little idea of how interesting it is. It arose out of a Symposium on T. S. Kuhn's work, with Popper in the chair, held in London in 1965, but the papers have since been revised and rewritten.

Kuhn writes the Preface first and this is followed by eight papers given by well-known authorities on the history and philosophy of science. The level of sophistication varies a great deal – sometimes the going is easy enough, at others it is quite difficult. All tastes catered for!

The book contains too much matter, already highly condensed, for a reviewer even to summarise the contents: all that can be done here is to explain what the book is about and to high light a few of the points made.

Two theories of the growth of science are in vogue. Karl Popper paints the scientist as a man who erects hypotheses, like Guys, to be destroyed. Kuhn divides science into two kinds, one (ordinary science) is a hum-drum affair developing slowly but always plodding along in the same dull rut: the other (revolutionary science) is the phase of innovation in which a new rut is made or discovered and a clean break made with the past. The discovery of the new rut he freely compares with religious conversion. In many respects indeed Kuhn sees the growth of science as like that of religion. In the Bible we see how periods of miracle are followed by longer periods of normal religion: ' the word of the Lord was precious (rare) in those days; there was no open vision . Kuhn estimates that, on average, there will be one short 'miracle' period every two centuries in any given branch of science.

Both these positions are, of course, stated blandly: both authors realise that there is much agreement in their thinking. Nevertheless, it is still debated whether the main stress should be put on Popper's or on Kuhn's point of view: is the growth of science a matter of refutation (Popper's falsification theory) or of problem solving (so introducing Kuhn's miracle periods)? Is its basic drive a matter or reason, or the logical process involved in the psychology of discovery?

Toulmin thinks Kuhn is basically right but points out that normal and revolutionary science may easily merge into one another. In early

days evolution was supposedly a gradual process; later many supposed that only radical mutations were important. Today acceptance of multitudinous micromutations tends to obscure the difference. In geology Lyell was a uniformitarian, Agassiz a catastrophist. Later Lyell realised that many earthquakes are far more violent than he had supposed, while Agassiz multiplied his postulated catastrophies and diminished their size. Similarly Kuhn's normal and revolutionary science tend to merge into one another.

According to L. Pearce Williams, Kuhn tells us what scientists *do*, Popper what they *ought* to do, but neither supports his case convincingly from the history of science. Against Popper, spectroscopy developed steadily from 1870-1900 with little refutation, yet Ångestrom was surely a scientist!

As the book develops the similarities between scientific and religious faith come increasingly to the fore. The hypothesis is set up and subjected to criticism: if it is unscathed there may come a moment of committment. The hypothesis is then the ruling paradigm. Facts seemingly at variance are now explained, even explained away, in terms of the newly found faith. As in religion, so in science, too great a reliance upon the results of observation and too little reliance upon faith and intuition may lead a man to jump on the wrong bandwagon. In the nineteenth century all the experimental evidence supported the view that heavier elements were not built up from hydrogen, for atom masses divided by the mass of the hydrogen atom were not always integral numbets. Many worked in this field: in the end Soddy almost made fun of their labours. 'There is something surely akin to if not transcending in the fate that has overtaken the life work of that distinguished galaxy of nineteenth century chemists rightly revered by their contemporaries as representing the crown and perfection of accurate scientific measurement. Their hard won results . . . appears as of as little of interest and significance as the determination of the average weight of a collection of bottles, some of them full and some of them more or less empty."

Lakatos cites cases in which science has advanced because researchers have knowingly put inconsistencies into cold storage. Popper, he thinks, makes consistency and falsifiability mandatory requirements for any scientific theory; which they most certainly are not (p 143) Kuhn, on the other hand, tends to make each research programme of normal science into a Weltschauung: "the history of science has been

and should be a history of competing research programmes (if you like it paradigms)" (p 155).

Feyerabend is stimulating as ever. Everything that Kuhn says about science, he claims, can be said about criminals. He reminds us of the Dillinger laboratory, set up in Dillinger's own garden, where dress rehearsals of bank holdups were staged using life sized models of target banks. All quite legal (we may suppose) on one's own ground!

At the price the book, in its PB form, is a good buy. It is well bound (sewn) and beautifully printed. By way of criticism it is worth mentioning that no initials are given for the 400-odd authors cited, nor is there a subject index.

BEFOULED WORLD

Francis A. Schaeffer, *Pollution and the Death of Man: the Christian View of Ecology.* Hodder and Stoughton, 1970 PB, 93p, £0.30.

Before starting to read this interesting little book it would be well to read two essays, reprinted at the end as Appendices I and II. The first (1966), "The Historical Roots of our Ecologic Crisis" by Professor Lynn White Jr., was given as a lecture to the AAAS. The second (1967) "Why Worry about Nature", by Professor Richard L. Means, quotes from the first and enlarges upon its theme. Schaeffer's purpose in writing the present book is to attack the joint thesis of White and Means.

Put bluntly the White-Means thesis is that environmental pollution at the present time is the fault of Christianity. The Bible informs man that he is lord of creation the corollary is that man, now armed with Christian arrogance, can do as he pleases. The noble savage, on the other hand, is ecologically conscious: he populates his trees and shrines with spirits and will not act irresponsibly for fear of hubris. Unlike the Christian he knows of no transcendent God to deprive nature of its spirit. So that the remedy for the pollution problem is for Western men to turn to Eastern though: to agree with Aldous Huxley that to be a good ecologist one must be a Buddhist.

Schaeffer thinks this view merits attack because he is sure that in various guises it will gain credence in days to come. In the course of his attack he first analyses current attitudes to nature. A common attitude is that of romantic pantheism which projects mans' thoughts and feelings into his surroundings. In this way he upgrades nature but

downgrades himself: respect for the individual vanishes. Cows and rats (as in India) may reap the benefit, for with such a view point a rational respectful control of nature is difficult to justify. Orion, the rat catcher, in Camus' novel *Plague* cannot decide whether to destroy rats or to harm men by letting rats live.

Another common view is the Platonic according to which there is something evil about nature. Spirit is superior to matter and when we die we are well rid of our crude material bodies. It is this legacy rather than Christianity (though in part it has regrettably enough been absorbed by Christendom) which leads to disrespect of nature and in the end to pollution of the environment.

Schaeffer argues effectively that in the Christian view matter is *not* evil: *firstly* because it is God's creation, *secondly* because God raised the physical body of Jesus, made of matter, not just his soul or spirit. Since God made us *and* nature, an attitude of neighbourliness and respect for our natural environment is incumbent on the Christian.

So Schaeffer claims that a rock has a god-given right to be a rock. Even the moss on it "has a right to live. It is equal with man as a creature of God" (p 45). We must not destroy it needlessly. We Christians "have spoken loudly against materialistic science, but we have done little to show that in practice we ourselves as Christians are not dominated by a technological orientation".

Man, in seeking enjoyment, must respect the world around him and limit himself accordingly. Horror and ugliness arise when men seek to do things just because they *can* do them: because they are technically sweet. As Christians we must love nature, because God made it. "If I don't love what the Lover has made. . . and love it because He made it, do I really love the Lover at all?" (p 67) asks Schaffer. Lacks of love for nature, he argues, can in the end lead only to meaninglessness in life.

The book does not read smoothly: the sequence is often disrupted, the arrangement seems faulty, insufficient care has been taken with the composition (eg, "false biblically for a Christian to have . . . ." p 46), there is needless repetition and the occasional exaggeration is reminiscent of cheap journalism ("Tissues were filled with DDT", p 7: a few tenths of a part per million, perhaps?). Despite these failings Dr. Schaeffer has written an important little book: we are indebted to him for his insights and for drawing attention to a little studied aspect of the Christian faith.

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