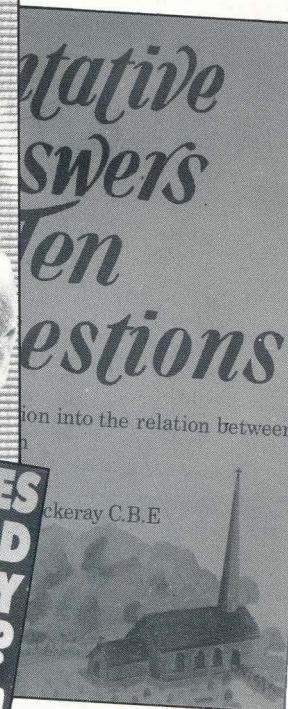
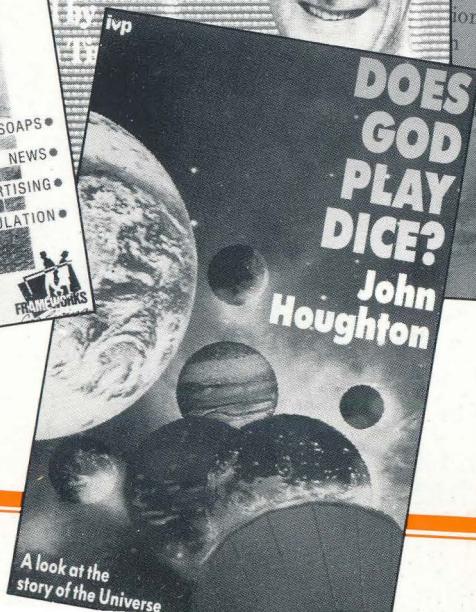
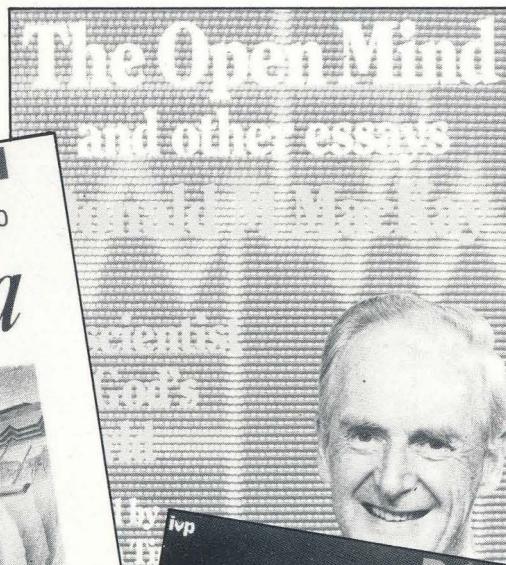


FAITH & THOUGHT

• BULLETIN •



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EDITORIAL

After the last issue of Faith and Thought Bulletin had gone to press, we were saddened to hear of the death of Professor F. F. Bruce, one of our Vice-Presidents. This occurred shortly before Professor Bruce's 80th birthday, and this issue includes a tribute to Professor Bruce by our Chairman, Terence C. Mitchell.

The main article in the Bulletin is the submission for the Gunning Prize Essay, 1990, which was won by Reginald Luhman, to whom we offer our congratulations. Reg's article, 'Who Was Adam?' will provoke discussion, and the next issue of the Bulletin will contain comments from a referee of the submission, and the author's reply. Any other comments, on this or any other matter, are always welcome.

Please note the announcement about 'Tomorrow's World', and make this book known to others. It is a fascinating insight into 'Revelation' by a scientist and our late Editor.

PROFESSOR FREDERICK FYVIE BRUCE D.D. F.B.A.

The death of Professor Frederick Fyvie Bruce on 11 September 1990 has deprived Biblical scholarship, both evangelical and general, of one of its most effective workers. From the appearance of *Are The New Testament Documents Reliable?*, published by the Inter Varsity Fellowship in 1943, he issued a series of highly informative surveys, histories, expository volumes, and Biblical Commentaries, which increased in frequency after his retirement in 1978. All of these, as well as his many articles, were couched in clear, elegant English. He served as President of the Victoria Institute from 1958 to 1965 and edited the Journal (*JVI*) from 1949 to 1956. He remained an Honorary Vice-President until his death, and continued to lecture to it from time to time.

Born in 1910 in Scotland he took his first degree in Classics at Aberdeen University, where Sir William Ramsay had been Professor of Humanity (Classics) from 1886 to 1911, leaving a tradition of philological study tied closely to archaeology, which always formed one strong strand in Professor Bruce's work. Before going up to university he had already studied many of the books of Ramsay and Deissmann and therefore had a sound grounding in the valuable data supplied by epigraphy and papyrology. He played a very practical part in the latter field when he contributed £1 to the £100,000 needed to purchase the Codex Sinaiticus for the British Museum in 1933. At Aberdeen in his time the occupant of Ramsay's chair was Alexander Souter, well known for his *Pocket Lexicon to the Greek New Testament*, and, as Bruce says of him, he was 'a lifelong researcher', and therefore an example of the possibilities of academic life. After post graduate study at Cambridge where in addition to further Greek studies Bruce attended lectures on Sanskrit from E. J. Rapson, and a short period in Vienna studying Greek in more depth, together with Indo-European philology under Paul Kretschmer, and the Indo-European Hittite language under Robert Bleichsteiner (involving him in a study of the cuneiform script, and inevitably some acquaintance with the Semitic Akkadian language) he was appointed to a lectureship in Greek at the University of Edinburgh in 1935. A fellow member of the academic staff was Gordon Childe, Professor of Prehistoric Archaeology, who included syntheses of early near eastern archeological material in his studies.

He moved in 1938 to a Lectureship in Greek at the University of Leeds, where he remained throughout the war. It was during his time there that the direction of his academic studies, begun as largely directed to Greek secular language and literature, turned more

towards biblical studies. He had attended a crash course in Hebrew under instruction from his friend Dr. Rawidowicz, who subsequently took up a chair at Brandeis University in the U.S.A.

In 1938 the Inter Varsity Fellowship of Evangelical Unions established a Biblical Research Committee, and this body organised annual summer schools at which Dr. W. J. Martin taught the Old Testament and Bruce the New Testament. Under the aegis of the Research Committee he undertook the preparation of a commentary on the Greek text of Acts, which finally appeared in 1951 after ten years work. A by-product of this was that most useful volume *Are the New Testament Documents Reliable?* (1943; rev. ed., 1960 as *The New Testament Documents: Are They Reliable?*). A characteristic feature of his work on this is his acknowledgement of his debt in preparing it to a little-known volume by Joseph Barber Lightfoot. This knowledge and appreciation of the work of scholars of earlier generations has been valuable to those who have learned from him.

In 1947 he moved to Sheffield as Head of the Department Of Biblical History and Literature, being raised to Professor in 1955. He established a school of biblical studies there which has become one of the most productive of any in Britain in recent years. In this period he put together a number of papers to produce another highly informative volume *The Books and the Parchments* (1950) which has been through various revised editions.

His move into biblical studies was timely since the discovery of the Dead Sea Scrolls virtually coincided with his arrival in Sheffield, and provided a fruitful field of study. He gave his first thoughts on this discovery in a lecture to the Victoria Institute in 1950, the talk appearing subsequently in the *JTVI*. His *Second Thoughts on the Dead Sea Scrolls* (1956) following on from this still gives a useful introduction. Apart from articles, his monographs *The Teacher of Righteousness in the Qumran Texts* (1957), and *Biblical Exegesis in the Qumran Texts* (1959) were substantial contributions, and his acknowledged expertise was reflected by the fact that he was one of four scholars invited to lecture at the British Museum when an exhibition on the Scrolls was held there in 1965. His involvement in the archaeological side of biblical studies was strengthened when he took on the editorship of the *Palestine Exploration Quarterly* in 1956 at the suggestion of the previous editor Professor S. H. Hooke. He was well into the biblical field at this time, having become a member of the Society for Old Testament Study in 1947 and the Society for New Testament Studies in 1948.

In 1959 he moved to his final post as Rylands Professor of Biblical Criticism and Exegesis at Manchester, following in the footsteps of A.

S. Peake (1904–29), C. H. Dodd (1929–35) and T. W. Manson (1935–58). His work was now fully in the biblical field and recognition of his eminence was reflected by his election as annual President of the Society for Old Testament Study in 1965 and of the Society for New Testament Study in 1975, by granting of a D.D. degree by Aberdeen University, and by his being elected a Fellow of the British Academy in 1973. In 1961, soon after he arrived in Manchester, he published *The English Bible* (1961; new ed., 1979 as *History of the Bible in English*) to coincide with the appearance of the *New English Bible*. His name had been suggested to the publisher as the potential author by Professor C. H. Dodd, the Director of the New English Bible project.

His retirement in 1978 did not bring an end to his productivity, and in fact with more free time, valuable publications flowed from his pen. An impression of his major contribution to the exposition of the Bible and its world can be gained from a survey of his books. His commentaries covered in substantial part of the New Testament: *Matthew* (1970), *John* (1983), *Acts* [Greek text] (1951; rev. ed., 1989), *Acts* (1954; rev. ed., 1988), *Romans* (1963), *1 & 2 Corinthians* (1971), [Greek text] (1982), *Ephesians* (1963), *Philippians* (1983), *Colossians, Philemon and Ephesians* (1984), *1 & 2 Thessalonians* (1982), *Hebrews* (1964), *The Epistles of John* (1970), and his *Expanded Paraphrase of the Epistles of Saint Paul* (1965) acts as a very effective explanation of those texts.

On the exposition of the New Testament and its background his output includes: *The Work of Jesus* (1979), *The Real Jesus* (1985), *The Hard Sayings of Jesus* (1983), *Jesus and Christian Origins Outside the New Testament* (1974), *Paul and Jesus* (1974), *Paul: Apostle of the Free Spirit* (1977), *Paul and his Converts* (1962), *The Pauline Circle* (1985), *Men and Movements in the Primitive Church* (1980), *The Apostolic Defence of the Gospel* (1959; rev. ed., 1977 as *First Century Faith*), *The Message of the New Testament* (1972), and on the historical background of biblical events: *Israel and the Nations* (1963), *New Testament History* (1969), and *The Spreading Flame* (1959), the latter, which began as three volumes in the 'Second Thoughts Library' (a counterblast to the well known rationalistic 'Thinkers' Library'), taking the story into the period of the early church, and providing the starting point for the Paternoster Church History which grew out of it and of which he was the general editor.

His last major publication *The Canon of Scripture* (1988), as so often before, presents a wealth of reliable information in readable form.

One of the great contributions made by F. F. Bruce was his leading of the way for men of evangelical Christian faith into the world of

secular scholarship, particularly in the universities. The posts he held and the honours he received show that he was fully accepted on his own merits in that world, but he never concealed his personal faith, and from his time as an undergraduate at Aberdeen when his academic achievements helped the Christian Union of which he was president to gain recognition as the 'Aberdeen University CU', he provided wise and active support to Christian witness in academia. As a member of the IVF Biblical Research Committee from 1941 he took part in the decisions to set up annual summer Old and New Testament meetings, to establish a residential centre for biblical research, and to prepare a Bible Commentary and a Bible Dictionary. The annual summer meetings have continued ever since, with Bruce as the Nestor for many years of the New Testament group; Tyndale House was established in Cambridge in 1944-45; and the one-volume Commentary and Dictionary were published in 1953 and 1962 respectively, with F. F. Bruce as one of the principal editors of each.

He will be greatly missed by all those who knew him and his work, not least by the Victoria Institute.

T. C. MITCHELL

WHO WAS ADAM? PALEOANTHROPOLOGY AND THE BIBLE

INTRODUCTION

What shocked Darwin's contemporaries most was the claim that man had evolved from the apes. Not only was it a challenge to man's pride, but it also struck at the heart of the Biblical doctrine of man as created in the image of God and involved in the sin of the first man, Adam. The wife of the Bishop of Worcester, on hearing the news, is supposed to have said: 'Descended from apes! My dear, let us hope it is not so; but if it is, that it does not become generally known.' Unfortunately for her, news had already leaked out. Even before the publication of 'The Origin of Species' in 1859, ancient human remains were found in the Neander Valley in Germany. Although the remains are now recognized as being fully human and having '... the same postural abilities, manual dexterity and range and character of movement that modern men do,'¹ when they were first discovered they were thought to be a missing link between man and the apes. The great French anthropologist of the day, Marcellin Boule, described Neanderthal

Man as a shambling brute of low intelligence, jutting chin and walking like an orang-utang.

The early history of paleoanthropology was marred by over zealous investigators vying with each other to be the first to find the 'missing link(s)' between man and the apes. This led to fossils being incorrectly described and dated. Each new discovery was hailed as unique when generally it could be assigned to a genus already occupied by other hominid fossils. Scientists of the day were quick to react to the proliferation of names given to the new finds. These names were supposed to reveal the identity of the fossils. Some contained the name ape-man (*Pithecanthropus*) as in the case of the



skull cap and tooth discovered by Dubois in 1891. He was inspired to search for the missing link by reading Haeckel's book, 'The History of Creation' in which the latter speculated that the remains of a speechless ape-man (*Pithecanthropus*) must exist somewhere in the Middle or Far East. Other finds were given the name 'hear man' (*Pleisanthropus*) and 'equal to man' (*Paranthropus*) by Broom or 'southern ape' (*Australopithecus*) by Dar. Some fossils were put in a genus that indicated their place of origin, like 'East Africa man' (*Zinjanthropus*), described by Louis Leakey. Scientists soon recognized that this only added to the confusion, and now all pre-human fossils are classified in one of only two genera, namely *Australopithecus* and *Homo*. Commenting on the history of paleoanthropology, John Reader writes, 'Throughout the study of fossil man, the related elements of interpretation, theory and preconception have always been firmly

connected with the personality and persuasive ability of their proposer. Thus the science has been dominated by ambitious individuals and has advanced as much by the force of argument as by the strength of the evidence, as much by the lure of the treasure hunt as by the discipline of science.² He applies this criticism as much to recent researchers, like Richard Leakey, who ascribed the title 'Oldest Man' to the skull often referred to as '1470', as he does to older ones. He says, '... modern paleoanthropologists are no less likely to cling to erroneous data that support their preconceptions than were earlier investigators. Dubois and the 'Missing Link', Leakey and the 'Oldest Man'—both dismissed objective assessment in favour of the notions they wanted to believe.'³

PROBLEMS INVOLVED IN ASSESSING HOMINID FOSSILS

It ought to be said that investigators today are more aware of the problems and less likely to fall into the fallacies of previous generations. Sir W. E. Le Gros Clark in his classic study⁴ highlighted some of the problems that were often overlooked. Among these he points to the following:

- (1) *Variability and Continuity*—Variability due to age, sex and individual differences are present in all populations and variations in the size of teeth and jaws and cranial capacities '... should not delude the palaeontologist into making specific distinctions on the basis of such characters alone.' Thus, for instance, one cannot directly compare the cranial capacity of modern man and the *australopithecines* without allowances being made for differences in size and body weight.
- (2) *Qualitative Assessment*—Statistical comparisons are only valuable with closely related forms and '... they become of less and less practical value as the relationship becomes more remote.' Reliance on inadequate statistical data can lead to ludicrous results as was the case of *Hesperopithecus*, a supposed hominid reconstructed from what was later discovered to be a peccary's tooth.
- (3) *Treating Metrical Data*—Characters vary widely between, and even within, groups and care must be taken in assessing them.
- (4) *Importance of accurate assessment of Geological Age*—In the early days discoveries were often made by chance and it was impossible accurately to date the material. Where dating has later been done, the earlier dates have often been reduced dramatically, as in the case of the Taung skull which was once believed to be one of the oldest fossils and is now given a date of 900,000 Yrs B.P. Clark comments, 'In the absence of any degree of certainty, there has been

a tendency for some anatomists to select the evidence for antiquity that seems best to fit the morphological status of the fossil. But this tendency must be strenuously avoided, for it introduces a very obvious subjective element . . . (one) is not entitled to ignore the evidence simply because it conflicts with preconceived ideas of evolutionary history.¹⁵ This was particularly relevant in the case of the Piltdown hoax. Reader claimed the affair made two points, ' . . . accurate geological and stratigraphical determinations are essential . . . (and) when preconception is so clearly defined . . . reproduced . . . enthusiastically welcomed and so long accommodated . . . science reveals a disturbing predisposition towards belief before investigation.'¹⁶

(5) *Importance of distinguishing generalized (primitive) and specialized characters*—Extreme specialization may exclude a specimen from being ancestral to a less specialized group, minor deviations do not. But neither do they demand it. Thus brow (supraorbital) ridges are found in both *Homo erectus* and Neanderthal man which could indicate that both were ancestral to *Homo sapiens*. However, on palaeontological grounds, the Neanderthals were probably not ancestral. Morphology needs to be supplemented by palaeontology. Other explanations may explain such features, for instance diet¹⁷ or disease. The latter is particularly important in the case of the early Neanderthal finds. Virchow found evidence that the individuals whose fossils had been found suffered from rickets, a view later confirmed by the detailed study in 1957.¹⁸

In the last few decades much more material has been discovered, particularly in Africa, and a clearer picture of human evolution is emerging. Even so the fossil material is still 'tantalisingly incomplete and the specimens themselves (are) so often so fragmentary and inconclusive, that more can be said about what is missing than about what is present.'¹⁹

THE AUSTRALOPITHECINES: NEAR MEN OR APES?

The australopithecine collection, begun by Dart with the Taungs skull in 1924, has been added to over the years by discoveries in various parts of Africa. It contains fossils once given human status, like *Paranthropus*, *Pleisanthropus* and *Zinjanthropus*. The genus contains two types of individuals called *gracile* and *robust*. They had small brains and large jaws similar to those of modern apes. The skulls were generally larger than those of apes and the position of the skull on the body made them more human than apelike. Their teeth, however, seem to resemble neither modern man nor ape. It was once thought that they represented an extinct group of apes, a view

championed by Sir Solly Zuckerman in the 1950s. In a recent article,¹⁰ the pygmy chimpanzee (*Pan paniscus*) has been described as the best prototype for a common ancestor of both the African apes and man. The authors show that the pygmy chimpanzee is similar in body size, cranial and facial features and as well as in limb measurements, to the australopithecines. The latter however are distinguished by the structure of the pelvis.

The discovery of footprints at Laetoli, Tanzania, in 1977 indicated that the australopithecines could walk, perhaps clumsily and for only short periods. The robust specimens differ from the gracile by having more massive jaws and often a sagittal crest on the skull like the modern male gorilla. For this reason some anthropologists believe the two types represent male and female (in gorillas the female is about half the size of the male). This is unlikely, as the gracile forms have a much narrower range of geographical distribution, which suggests they are variants in the same genus. The gracile perhaps being a carnivorous hunter and the robust a vegetarian. *Zinjanthropus*, now renamed *Australopithecus boisei*, was one of the robust forms whose huge teeth were probably adapted to a diet of vegetation and nuts (hence the nickname 'Nutcracker Man').

The status of these remains is still problematic. There is no clear evidence of tool making and the dating of the remains is still open to dispute. Specimens from the Olduvai Gorge in Tanzania have been classified as two million years old on the basis of potassium-argon dating, but 'this method is not without its difficulties and much remains to be settled about the Olduvai dates.' The fossil material from Ethiopia had been dated some two million years earlier; but 'it would be premature to accept these dates now.'¹¹

OUR RECENT ANCESTORS?

Fossils considered by most authorities as directly ancestral to man are classified as belonging to the genus 'Homo'. These include *Homo erectus*, *Homo habilis* and *Homo neanderthalensis* (Neanderthal Man). The Javan fossils, discovered by Dubois, and the Chinese fossils discovered by Black in the 1920s have been classified along with others subsequently discovered in Asia, Africa and Europe in the group *Homo erectus*. These hominids were widely distributed and apparently existed from around one million years to three hundred thousand years ago. They were characterized by having large eyebrow ridges (supraorbital tora), an ape-like jaw and human-like teeth. The cranial capacities of the fossils vary a great deal and some fall within the normal range of *Homo sapiens*. There is some evidence

that they made tools and used fire. Although it is generally believed that they were ancestral to either Neaderthal Man or modern man or both, some authorities now regard them as a sub-species of *Homo sapiens*.¹²

Homo habilis, or 'handy man', was a term coined to describe fossils discovered at Olduvai in the 1960s as well as the famous skull '1470' discovered by Richard Leakey in Kenya in 1972. These differed from *homo erectus* by having thinner skulls, moderate brow ridges and lower cranial capacities. There was doubt expressed at the time of discovery whether all the bones actually belonged to the same creatures, and it was pointed out that they were more similar to the australopithecines than they were to the *erectus* remains. David Pilbeam at the time even called them *Australopithecus habilis*,¹³ which for Leakey amounted to a contradiction in terms. More recently Pilbeam has accepted that they are different, but finds *Homo habilis* difficult to visualize. He stresses that both *habilis* and the australopithecines were contemporaries and that, 'By about 1.75 million years ago . . . *Homo habilis* disappeared from Africa and was replaced by an even larger brained hominid: *Homo erectus*'.¹⁴

Neaderthal Man had massive brow bridges and limb bones, a low cranium, a sloping forehead and teeth larger and more thrust forward than in modern man. Hence he has been regarded as a stage between *Homo erectus* and modern man. Yet his brain was slightly larger, on average, than that of modern man. There is no agreement as to which remains constitute the transitional stage and which are genuinely Neaderthal.¹⁵ The issue is further complicated by the finds at Mount Carmel in Israel which apparently demonstrate interbreeding between Neaderthal Man and *Homo sapiens*. The Neaderthals disappeared, but no one really knows why. Perhaps they merged into the human populations or were replaced by them or perhaps they became extinct because they could not adapt. A recent re-examination of neaderthal bones¹⁶ showed a deficiency in Vitamin D which is indicated by the existence of rickets. It is also suggested that some of the creatures died from syphilis.¹⁷ Whatever the explanation for their demise, the fact remains that by about 40,000 years ago only *Homo sapiens* existed. It would be convenient from an evolutionary point of view to believe that there was a direct progression from the australopithecines through *Homo habilis* and *Homo erectus* and the neaderthalers to modern man, but the evidence suggests otherwise. Many would still basically adopt the view given by Louis Leakey in 1966, that the australopithecines never 'represented a direct ancestral stage leading to *Homo erectus* . . . All that can be said at present is that there was a time at Olduvai when *Homo habilis*, *Australopithecus*

(*Zinjanthropus*) *boisei* and what seems a primitive ancestor of *Homo erectus* were broadly contemporary and developing along distinct and separate line.¹⁸ Although palaeoanthropology can, at present, give no clearer answer to the problem of man's origin, an answer is beginning to emerge from another branch of science, namely molecular biology.

NEW LIGHT ON AN OLD QUESTION

Two significant discoveries in molecular biology have a direct bearing on the questions already raised. First there is the confirmation that humans and the African apes are physically closely related. The distance between the DNA sequences in man and the great apes is closer than that between the horse and the zebra. More surprisingly the research demonstrates that the split between *Homo sapiens* and the African apes occurred not ten million years ago, as suggested by anthropologists, but no more than four to five million years ago. Indeed Goodman found that '... the cladistic distances in phylogenetic trees constructed from amino-acid sequence data... yielded a "molecular-clock" divergence date between *Homo* and *Pan* (chimpanzee) of only 1-1.5 million years B.P. (before the present).'¹⁹ He thinks he must have made a mistake in the calculation, but it is equally possible that other (radiometric) dating of the fossils is at fault. Using this information, Gribbon and Cherfas claim to have found the answer to the riddle of the disappearance of the australopithecines—the graciles turned into chimps and the robust forms into gorillas!²⁰

Of even greater significance is the discovery that all human beings probably had common ancestors or even an ancestor (the 'hypothetical' Eve) some 100,000 years ago. This hypothesis, significantly nicknamed 'The Noah's Ark Theory',²¹ is based on the analysis of mitochondrial DNA from 147 women drawn from five different geographical populations. Mitochondrial (mt) DNA was used because mutations accumulate faster there than in the nucleus and because it is inherited maternally and does not recombine.²² Researchers discovered, 'that all the present-day humans are descended from (an original) African population.' Other research has also confirmed this.²³ The research also calls into question the possibility that *Homo erectus* evolved into *Homo sapiens*. Rather the authors 'propose that *Homo erectus* in Asia was replaced without much mixing with the invading *Homo sapiens* from Africa.' Jones and Rouhani further suggest that there may have been a time when there was just a single couple. They write, '... population genetics theory tells us that the mean effective size of the ancestral population for all Africa

throughout this period (c.50,000–30,000 years ago) must have been 600 individuals; or alternatively that the bottleneck of 6 individuals for 200 years, or even a single couple for 60 years.²⁴ Some creationist writers have taken this as proof of an original Eve or proof that all existing peoples are descended from Noah's family. Nancy Darrall wrote, 'It is interesting that the bottleneck in the expansion of the human population occurred at the time of Noah (Genesis 7) when, at the most, only four types of mitochondrial DNA existed which could be passed on to future generations . . . The scientific results, rather than contradicting the Genesis account, are in agreement, though other explanations are possible.' This approach begs many questions, not least that the dating given by the scientists is wildly inaccurate.

WHAT IS MAN?

Physical appearance alone cannot determine whether a particular fossil is human. Other factors such as evidence for the making and using of tools, the cultivation of the soil, the domestication of animals and, above all, the use of language are much better indicators.

a) Man the Toolmaker?

Stone tools associated with fossil remains have been carefully examined and classified (Mary Leakey's work at Olduvai Gorge is a good example). From such work it has been shown that there was an evolution of stone culture starting with chipped pebbles and graduating through 'core' tools associated with the Old Stone Age to sophisticated 'pressure-flaked' tools of the New Stone Age which still survive in some aboriginal cultures in Australia and South America. It is generally assumed that *Homo erectus* made stone tools, although some authorities believe that he was the prey of other, more human, creatures who had been responsible for the tools.²⁵ Tool making and tool use does not, of itself, prove humanness. Chimpanzees can adapt and use tools very effectively and orang-utangs have been taught to chip flint stones and use them to cut through rope.²⁶

b) Language: Peculiar to Man?

A great deal of research has been undertaken in an effort to prove that apes can be taught to 'speak' a language. Some sought to teach them to imitate human speech but others, more realistically, tried to teach apes sign language. The most famous are the Gardners with the chimp, 'Washoe', the Premacks with 'Sarah' and the Pattersons with the gorilla, 'Koko'. Although the animals learned how to use over a

hundred signs with consistent reliability it is now generally conceded that they were not actually using language. A careful analysis of the experiments showed, '... not that the chimps can acquire the rudiments of language but that they can acquire a sophisticated number of tricks and talents that they perform more or less appropriately in order to secure rewards rather than to communicate for its own sake.'²⁷ The majority of the original researchers now accept that they over-attributed in evaluating animal responses. What for instance could Koko have understood by the expression 'rotten stink(er)' or what theology did he have in mind when using the phrase 'rotten devil'? Some of these experimenters have written that 'Unlike children ... apes do not seem to have moved beyond this point (i.e. using an appropriate symbol to obtain a reward). To date, there is no evidence that Washoe, Sarah, Lana, Koko or Nim achieved symbolization proper.'²⁸

Language seems to be a peculiarly human attribute. Every child, except one that is severely brain damaged, acquires linguistic competence. Although all human languages are complex, humans seem to have an innate ability, an 'internal grammar', which enables them to master language. Even people like Helen Keller, born deaf, dumb and blind, can learn to communicate through language. Children, like the unfortunate Genie, who was imprisoned and deprived of human contact for the first thirteen years of her life, was taught to speak and her speech '... theoretically knows no upper bound. These are aspects of human language that set it apart from all other animal communication systems.'²⁹ In their comprehensive survey of the subject of language acquisition Wilson and McKeon³⁰ quote the famous linguist Noam Chomsky who said that, 'Man has a species-specific capacity, a unique type of intellectual organization which cannot be attributed to peripheral organs or related to general intelligence, and manifests itself in what we may refer to as the 'creative aspect' of language use—its property being unbounded in scope and stimulus free.' Elsewhere Chomsky writes that, 'A human language is a system of remarkable complexity. To come to know a human language would be an extraordinary achievement for a creature not specifically designed to accomplish the task.'

We know that man had language when we first encounter writing about 3,500 B.C., by which time he had already started agriculture, domesticated animals, built towns and practised religion. It is difficult to establish exactly when man first began to communicate by speech. The famous wall paintings depicting animals and stylized humans found in the caves of Lascaux, which may have been a form of symbolic magic or the celebration of the hunt, can be dated some

15,000 B.C. Most accept that Neanderthal Man practised some sort of religion. He seems to have buried the dead, sometimes with other objects and, at one place, apparently decorated the corpses with flowers. J. S. Wright³¹ is, nevertheless, probably right in urging caution in interpreting the meagre data. Sir John Eccles commented on the immense time lag between the development of the full-size human brain and any significant progress in cultural evolution. Wallace, co-founder of evolution with Darwin, believed that although natural selection could have endowed primitive man with a brain it was only God's intervention that could explain human intelligence. Eccles writes, 'I find myself in general sympathy with Wallace, who was more open-minded than Darwin.'

WHO WAS ADAM?

Where does the Biblical Adam fit into this picture? The answer depends upon the interpretation of both the scientific and the biblical evidence.

One could deny that the Bible has anything positive to say on the issue and insists that the stories in Genesis are mythological explanations with no connection with what actually happened. Parallels with the mythology of other ancient Near Eastern cultures are scanty. S. H. Hooke³³ has to assume that the soil used to make Adam was moistened to make it agree with the Babylonian story of the making of man out of clay and blood and the Egyptian myth of man's being made on the potter's wheel. There is a Sumerian story of paradise containing eight trees, the eating of which produced suffering, and it has been observed that the name *Ninti* for the goddess parallels Eve because the word means both 'rib' and 'life'. The mythological explanation has some support from ancient Jewish interpretation which contains all sorts of fanciful elements. For instance Adam was said to be a giant who stretched from one end of the earth to the other. Before marrying Eve Adam supposedly mated with Lilith who bore him demons. He is also said to have had intercourse with the animals before realizing that none was suitable as a mate. Even so the Jewish exegetes believed that Adam (see Luke 3:27, Acts 17:26 and especially Romans 5:12-18). Blocher, commenting on the Romans passage says, 'The epistle to the Romans dots all the i's so thoroughly that those who deny Adam's historicity are forced to use pretty poor bolt-holes.'³⁵

The Genesis narrative is not pure history. Even literalists who insist on a real talking snake in the Garden of Eden are forced to admit the existence of pictorial elements, like God walking in the garden, His

making man from dust and His slaughtering of animals to make clothes for Adam and Eve.³⁶ It is best to see the stories as a kind of religious drama.³⁷ According to Genesis both man and the animals were made from dust (identical Hebrew words are used to describe both creations in Gen. 2:7 and 2:19) and, once created, they are described as living souls (Heb. *nephesh*). What makes man unique is not his body but his being in the likeness of God. This is generally taken as a reference to man's spiritual nature imparted by God's breath (Gen. 2:7).

Those who believe Adam was an actual person have interpreted the Biblical data in various ways. Creationists have generally regarded the australopithecines as apes and irrelevant to the questions of human origins and classified both *Homo erectus* and Neanderthal Man as degenerate descendants of Adam.³⁸ This is unacceptable for the scientific reasons outlined above. Additionally they could only be related to the Biblical Adam if the dates usually assigned to these hominids are drastically revised. Creationists have consistently criticized questionable assumptions such as the existence of a water canopy around the earth prior to Noah's flood. Many Christian geologists have rejected such criticisms and accepted the usual scientific dates.⁴⁰ Dates have been revised drastically in recent years, often by up to a million years, and the origin of man is regarded as more recent than it was some decades ago. Nevertheless it still cannot accommodate the creationist position.

Another approach is to identify Adam with New Stone Age (Neolithic) man.⁴¹ This makes good sense of the Genesis material which refers to agriculture, animal domestication, a settled existence and, apparently, metallurgy (Gen. 4:22). Pearce believes that Gen. 1 refers to the Old Stone Age and chapters 2 onwards to Neolithic man, and Berry⁴² finds the existence of pre-Adamic (Old Stone Age) man a convenient explanation of old 'chestnuts' such as where Cain's wife came from. There are considerable difficulties with this view, not least the consistent Biblical claim that all races of mankind derive from Adam and that the transmission of sin occurred because of mankind's solidarity with Adam. Berry, by treating Adam as the federal and not the actual head of the human race, presumably believes we are involved in Adam's sin through some form of Pelagian imitation. Pearce seeks to avoid the problem by maintaining that, as a matter of fact, Neolithic Man completely replaced Palaeolithic Man. He writes, 'That there is no genetic connection between Adamites and former races gains support from the remarkable emptiness of the lands into which the migrating farmers came ... This would indicate that the Adamic race was a fresh start

eleven thousand years ago.⁴³ He believes that Noah's flood was a local, but extensive, one that affected only Neolithic Man⁴⁴ and was forced to admit in a personal reply⁴⁵ that the Americas and south eastern Pacific was already populated before the Flood and that these people were unaffected by it. One way out of the difficulty would be to claim that Noah's Flood was genuinely universal,⁴⁶ but the arguments against this seem overwhelming.⁴⁷

Perhaps we should not try to fit the Genesis material into a rigid historical period. Mitchell⁴⁸ has demonstrated that there is nothing in Genesis that demands a date in the Neolithic period, and Adam and his immediate descendants could quite easily be located in the Upper Palaeolithic. If Adam was a representative of the Old Stone Age then obviously the Genesis narrative must extend over a much longer period than is usually assumed. It is now generally agreed, even by creationists,⁴⁹ that the genealogies give little guidance for actual dating of individuals. In fact we know from contemporary sources, like the Sumerian King List, that genealogies had a theological purpose and that many names were omitted from lists. Also terms like 'father' can stand for 'ancestor'. An example of this is mentioned by Kitchen⁵⁰, who points out that King Tirhakah (c.680 B.C.) honoured his father, Sesostris III, who lived c.1880 B.C.! Recent study suggests that the purpose of the Genesis genealogies was to emphasize the divine choice of the line of king David.⁵¹

CONCLUSION

Science and the Bible both agree that modern human beings are one species that had a common origin. Both science and the Bible could support the view that modern man is a distinct species having no relationship with extinct hominid species, but equally, and more likely, it could support the view that modern man has evolved from one or more of such groups. The Bible suggests, if it does not demand, that man and the animal creation are physically related, but that man is unique in that he is answerable to God. This is confirmed by the claim that humans alone can speak, write and have a religious awareness. There is therefore no inconsistency in holding both the belief that man has evolved and that he is also a unique creation of God, who used evolution as the means of creation.

It is still difficult to identify Adam with a particular type of primitive man partly because there are no clear criteria for dating the Genesis material, although the flood of Noah, if Pearce's observation are accurate, might provide a historical marker (i.e. 5–4,000 B.C.) Perhaps the opening chapters of Genesis contain a series of traditions about

early man covering a considerable period of time. My own view is that the Garden of Eden is not a real geographical location, but an idealized garden analogous to the idealized picture of the New Jerusalem coming down from heaven in the book of the Revelation. This is supported by Jewish interpretation which saw Eden as the ideal Israel (see Apocalypse of Baruch and Ecclesiasticus ch.24). It was the place where God dwelt with men in the beginning. The stories of the making of Adam and Eve (seen by Spanner as a dream sequence⁵²) and the story of the Fall should be taken as pictorial representations of historical events. This version too has the support of ancient Jewish scholars as well as the overwhelming support of modern Biblical scholars.

REG LUHMAN

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ANNOUNCEMENT

The book 'Tomorrow's World' by R. E. D. Clark, is available from David Burgess, who was instrumental in committing the manuscript to publication. The price of the book is £4, plus £1 postage and packing from:-

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BOOK REVIEWS

Pietro Corsi *Science and Religion: Baden Powell and the Anglican Debate, 1800–1860* CUP. 1988. 346 pp. Paperback £32.50

Those attempting to make the mental leap between the Boy Scouts and 'Science and Religion' will be interested to know that the subject of this biography, an Anglican priest and Savilian Professor of Geometry at Oxford, was the father of the Boy Scouts' founder. Though less generally known than his son, Baden Powell is still widely remembered as one of the 'seven against Christ' of *Essays and Reviews* (1860). In that controversial volume of liberal theological scholarship Powell repudiated the evidential arguments for God's existence which he had previously expounded, and particularly repudiated the apologetic value of miracles. A tireless popularizer and interpreter of science, his death in 1860 deprived him of an important role in the Darwinian debate and saved him from the likelihood of prosecution for his contribution to *Essays and Reviews*.

Those familiar with this indefatigable religious apologist will probably be acquainted with his middle years, when he expounded a natural theology which emphasized the evidence for God found in the regular laws of nature. Few, however, will be familiar with the early Baden Powell to whom Pietro Corsi's biography introduces us. Far from the liberalism of later years, we find in this account a Baden Powell whose family and early patrons were leading High Churchmen. His early apologetic writings were theologically conservative, and were written in opposition to Unitarian rationalism—an intellectual position in many respects similar to Powell's own final stance.

The scene is thus set for a fascinating story: a tireless Christian apologist restlessly searching for a successful apologetic strategy, and occasionally radically revising, not to say reversing, his strategy in the light of new ideas. Corsi's consummate ability both as a storyteller and as a historian and master of detail allows him to make good

use of this promising material. The reader is carried along by an intellectual tale of great interest. For those involved in the history of religious and scientific thought this book will be a delight.

For those in other disciplines Corsi provides a taste of the best that historical scholarship can offer. The book will also raise for readers a host of interesting and demanding questions about the development of Christian apologetics, and about the science-religion interface. The reviewer's only reservation in recommending this book to non-historians is that Corsi's admirable sensitivity to theological niceties might at times exceed the general reader's interest.

For the historian, this theological sensibility is one of the greatest strengths of the biography, and is all the more laudable since Dr. Corsi is a historian of science. He skillfully portrays Baden Powell in his theological context—not only intellectually, but personally and socially. Indeed this biography can almost be said to contribute as much to the history of the Anglican Church as to the history of science. Corsi's bold pledge to locate Baden Powell within the 'Anglican debate, 1800–1860' is fully redeemed. We are also treated to a very sensitive account of Baden Powell's interactions with the academic and political circumstances of his day.

This is a masterful biography of an interesting and hitherto rather neglected figure, and deserves to be widely read. By displaying Baden Powell's many and varied apologetic strategies, Corsi opens up to the reader an interesting and stimulating vista. Essential reading for the modern religious apologist.

JONATHAN R. TOPHAM

Jane Goodall *In the Shadow of Man* Revised Edition, Weidenfeld and Nicolson. 1988. xix+297 pp. Paperback £8.95

This is a revised edition of a book originally published in 1971. In the first edition Jane Goodall recounted the beginnings, in 1960, of her work on Chimpanzee behaviour, at Gombe on the eastern shore of Lake Tanganyika; and recorded her early observations of those animals. Although written in a popular style, the book was immediately recognized by zoologists as a record of extremely important work. The revised edition brings the account up to date, with an added chapter, headed August 1987; and carries an Introduction by Stephen Jay Gould.

Jane Goodall, as a young lady in her mid-twenties without any academic training for the job, was invited by Dr. L. S. B. Leakey, the famous palaeontologist/anthropologist, to undertake a study of the

behaviour of a group of chimpanzees living on the shores of the lake. Pre-historic hominid remains are often found by lakes, and Louis Leakey thought that this group of Eastern Chimpanzees might throw some light on human origins. The aim was to observe the animals without in any way interfering with their normal behaviour. This meant spending long hours, often alone, on the mountainside or in the forested valleys, hoping to catch a glimpse of her subjects. This, at first, proved a very difficult task, as they would not come within 500 yards of her position. But after three years, her patience and courage were rewarded when two adults approached to within a few yards, and spent a few minutes observing her. A year later she was accepted as part of the normal environment by most of the group. Thus began the work of what is now the Gombe Stream Research Centre, Tanzania, an internationally recognized centre for the study of non-human primate behaviour.

Jane, her photographer Hugo van Lawick (whom she met and married during the course of the research), and others who later came to assist her, were able to recognize by sight, and sometimes by sound, the many individuals who composed the ever-changing group. As a result, this book is not an abstract account of the behaviour of a generalized chimpanzee, *Pan troglodytes schweinfurthi*; but describes individual chimps with their changing moods, and manifold reactions to other members of the group, to members of other groups, and to members of other species. Chapters are devoted to the group hierarchy, to family life, to sexual relations, to the infant, the child, the adolescent, to adult interaction, and to predation. The reader will recognize, without problem, the many parallels with human behaviour, as well as the obvious differences. Some of the similarities Goodall discusses towards the end of the book—sometimes she adopted, on the basis of these parallels, somewhat unconventional methods in mothering her own small son, with apparent success—and draws tentative conclusions concerning the origins of human behaviour patterns.

The importance of her work lies, not so much in the fact that she has recorded in meticulous detail the lives of members of another species—others have done that for many other species—but in the species that she has investigated. The chimpanzee is genetically man's closest relative: they share 99% of their genes, and the chimp is actually closer to man than to the gorilla. Anatomically and physiologically they are very similar; their brains have almost identical 'wiring'; they share the same diseases. Goodall's work has shown that the similarities extend to their behavioural, psychological, and emotional aspects as well. All these similarities make the chimp an

ideal subject for research into ways of alleviating human suffering. And medical research has not been slow in exploiting this material. But this raises ethical issues. The demand by medical laboratories for young specimens results in the wholesale slaughter of mothers, and the death of many young who are dependent upon their mothers. This, together with the African's taste for chimpanzee meat, and the laying waste of vast areas of its natural habitat, means that it has become an endangered species. Furthermore, the cramped and solitary housing of the animals' social and psychological needs in many zoos, are totally deplorable. This book should do much to rouse the conscience of those who, probably through ignorance, have caused much suffering to captive chimps; and to lead to improved living conditions for these highly intelligent and fascinating animals that have so much to give to *Homo sapiens*.

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